THE ROLE OF THE ENVIRONMENT ON HEALTHY AGEING AND COGNITIVE HEALTH: SPACE PROJECT

SPACE
SUPPORTIVE ENVIRONMENTS FOR PHYSICAL & SOCIAL ACTIVITY, HEALTHY AGEING & COGNITIVE HEALTH

QUEEN'S UNIVERSITY BELFAST

Outdoor Recreation Network

REC

The main presentations within this meeting will be recorded and made available online following the event.

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Welcome

Lee Newton

Head of Consumer Operations,

Ordnance Survey

ORN Executive Committee Member

ORN Vision

‘Support and encourage everyone to responsibly enjoy and engage with the outdoors’

ORN Academic Research Group

The ORN Academic Research Group (ARG) helps researchers share insights with each other and with those who work in more practice and policy fields. The sessions take place on a quarterly basis online and contributions are welcome on research topics related to outdoor recreation from those working in universities and colleges, research institutions, and sector organisations.

Prof Ruth Hunter

Professor of Public Health and Planetary Health, Centre for Public Health, Queen's University Belfast

Dr Shay Mullineaux

Research Fellow – SPACE and GroundsWell projects, Centre of Public Health, Queen's University Belfast

Dr Niamh O'Kane

Research Fellow and science communication/impact lead – SPACE and GroundsWell projects, Centre for Public Health, Queen's University Belfast

Outdoor Recreation Network

GEOPORTAL:
INTRODUCTION AND DEMONSTRATION

SHAY MULLINEAUX

RUTH HUNTER

ON BEHALF OF THE SPACE TEAM
INCLUDING RUOYU WANG, CONOR GRAHAM, GEMMA MCNICKLE, RICO SANTIAGO, JENNIFER MCKINLEY

IN PARTNERSHIP WITH QUEEN'S UNIVERSITY BELFAST AND ORDNANCE SURVEY NI

https://www.qub.ac.uk/sites/space/

SPACE

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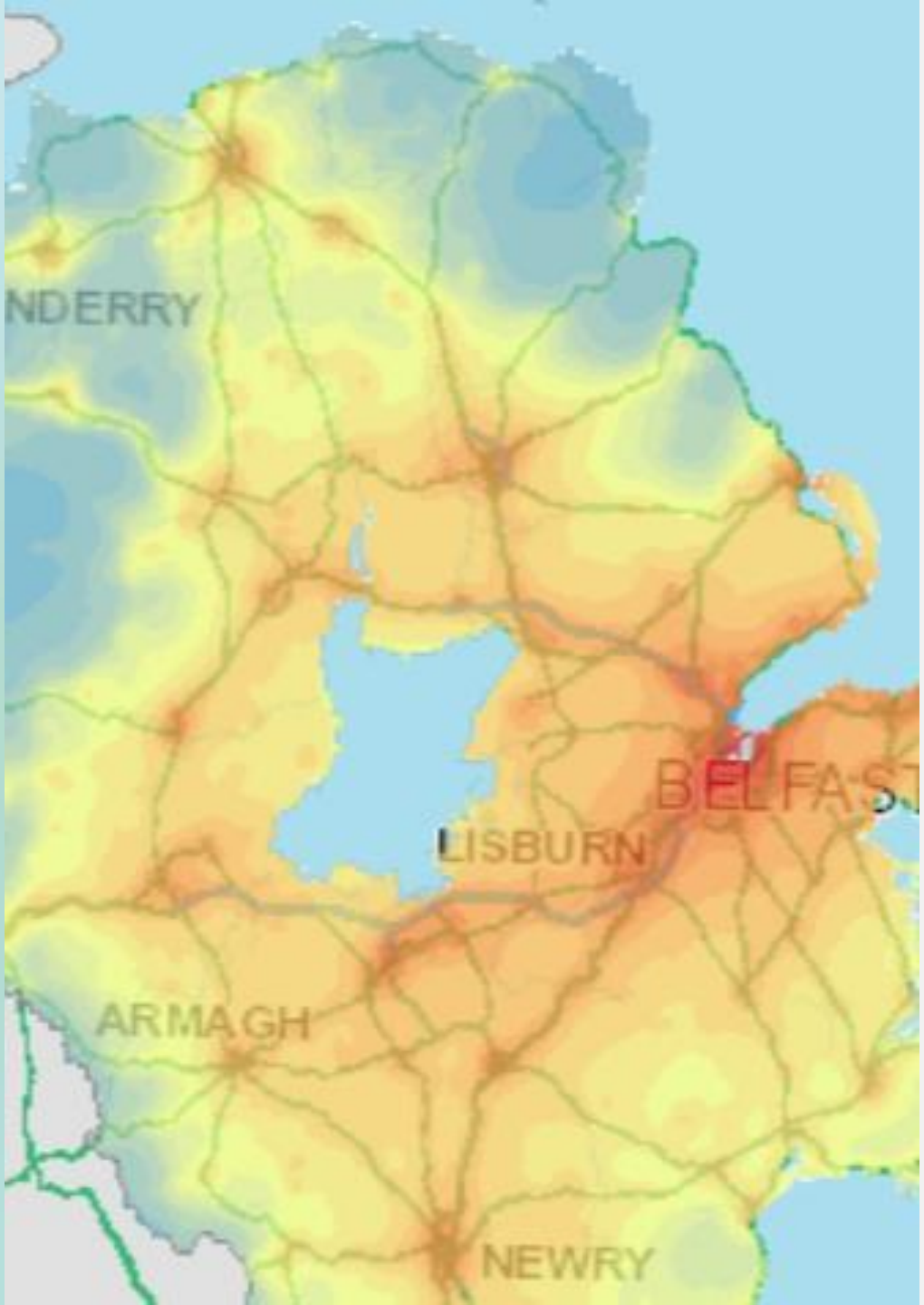
UKRI Economic and Social Research Council

UKRI Healthy Ageing Challenge Social, Behavioural and Design Research

SPACE

What is a Geoportal?

It is a site where users can **explore, discover, download and visualise** spatial data relating to the work in the SPACE project



Specification

- The SPACE Geoportal was built online using esri ArcGIS online software
- The Portal itself is configured using **esri Hub**
- The Map Viewer is using **Experience Builder**

Benefits:

- QUB AGOL set up allowed for ease of software access
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Healthy Ageing Challenge Social, Behavioural and Design Research

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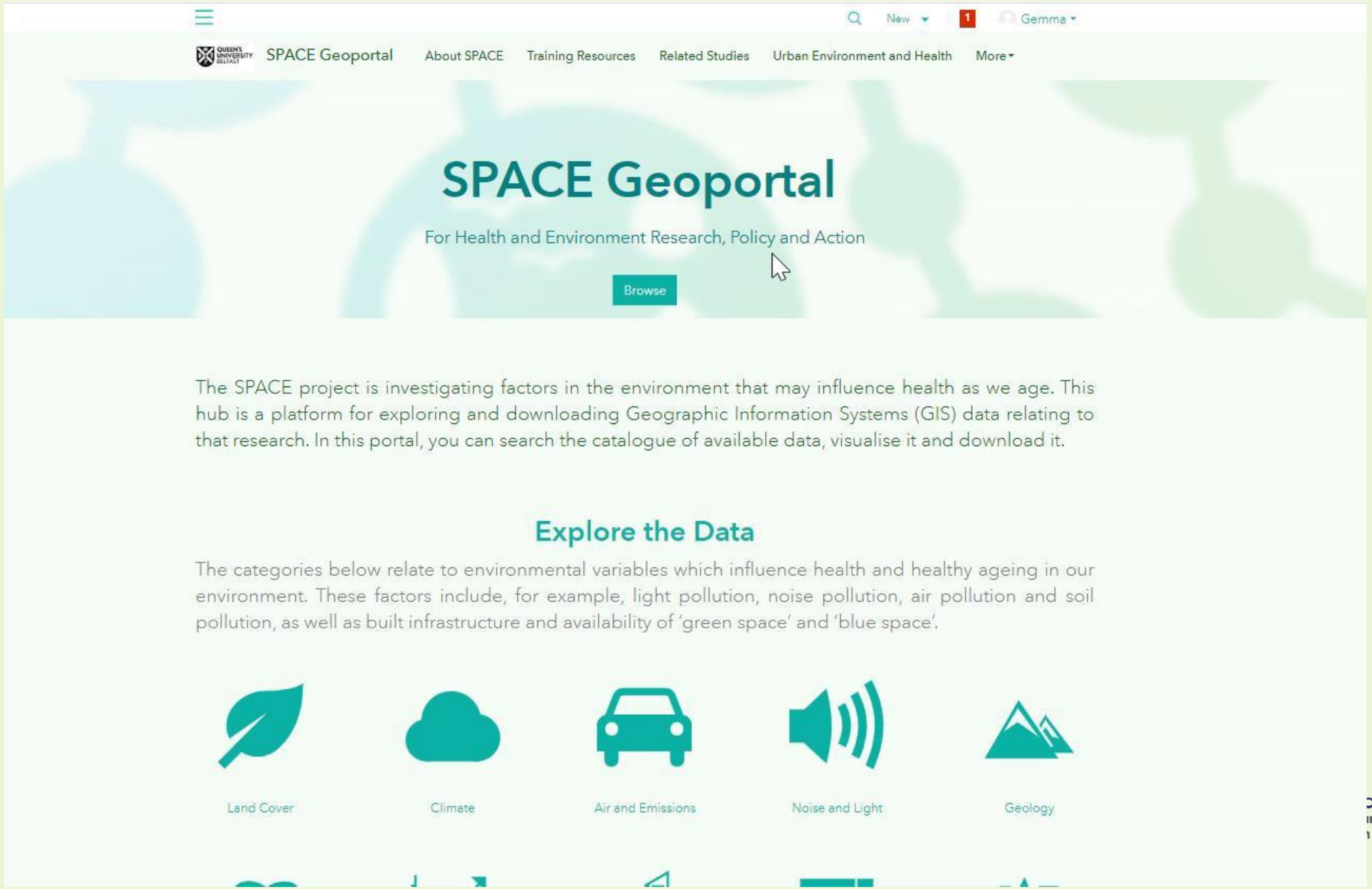
New
1
Gemma
SPACE Geoportal
About SPACE
Training Resources
Related Studies
Urban Environment and Health
More
SPACE Geoportal
For Health and Environment Research, Policy and Action
Browse
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Explore the Data
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Climate
Air and Emissions
Noise and Light
Geology

Metadata/ More information

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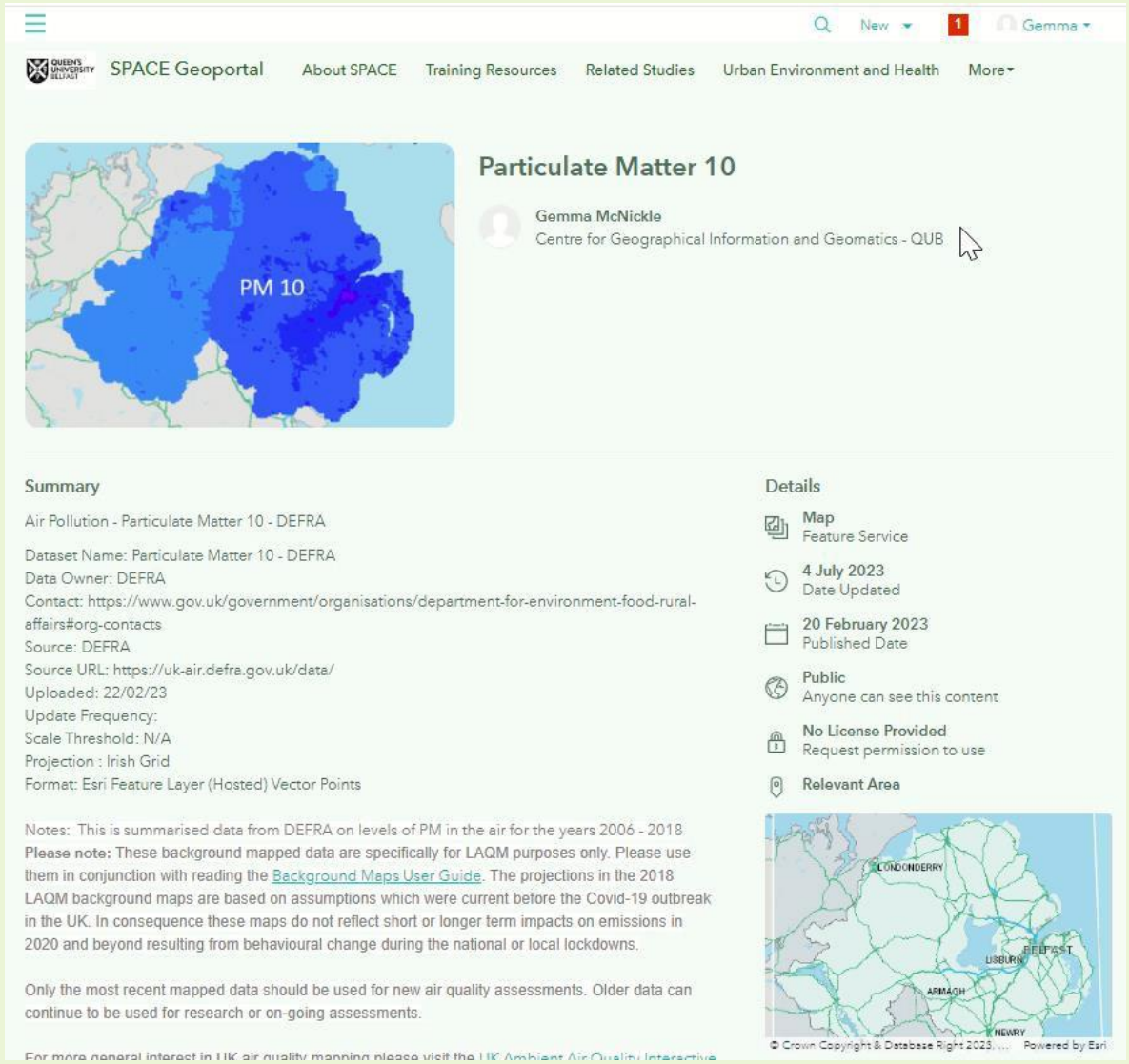

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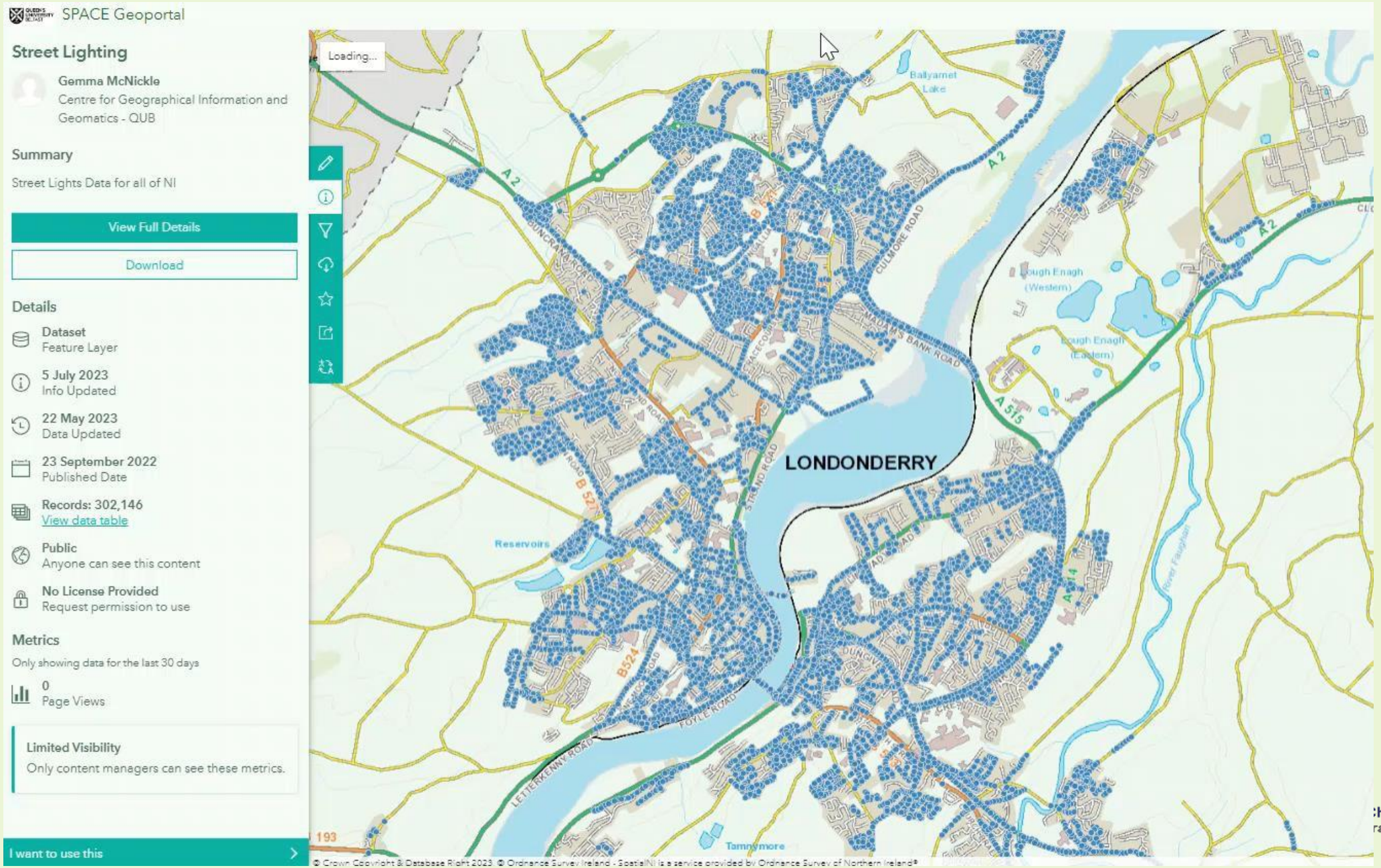

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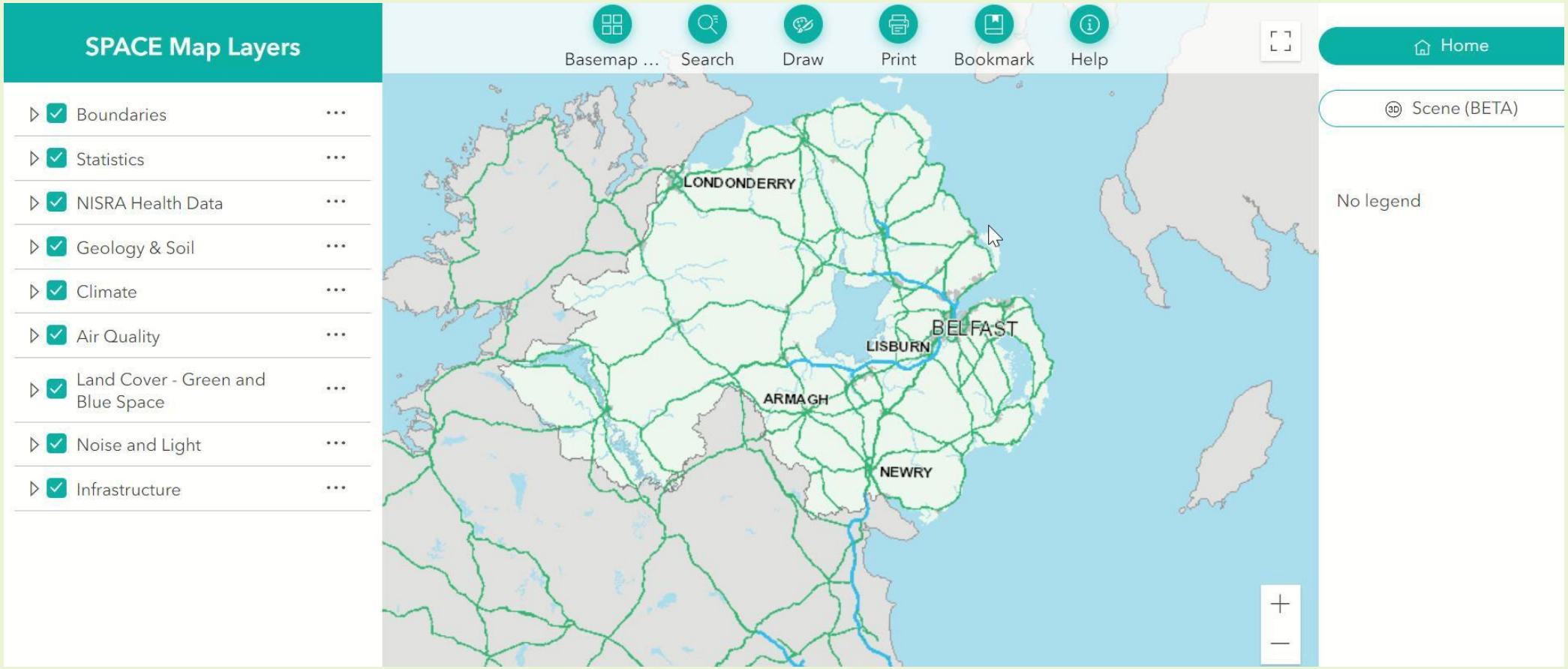
SPACE Map Viewer – Layer list for comparing data



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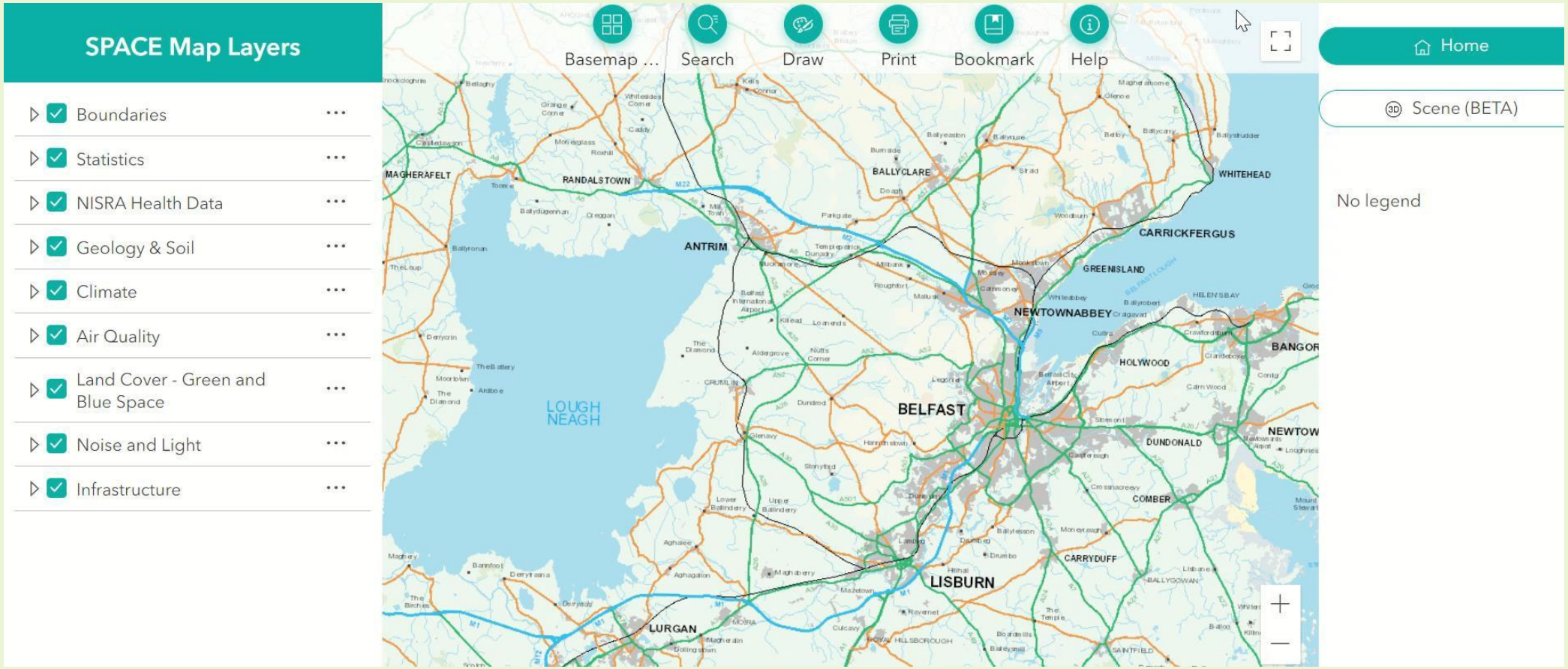
Comparing layers using Transparency



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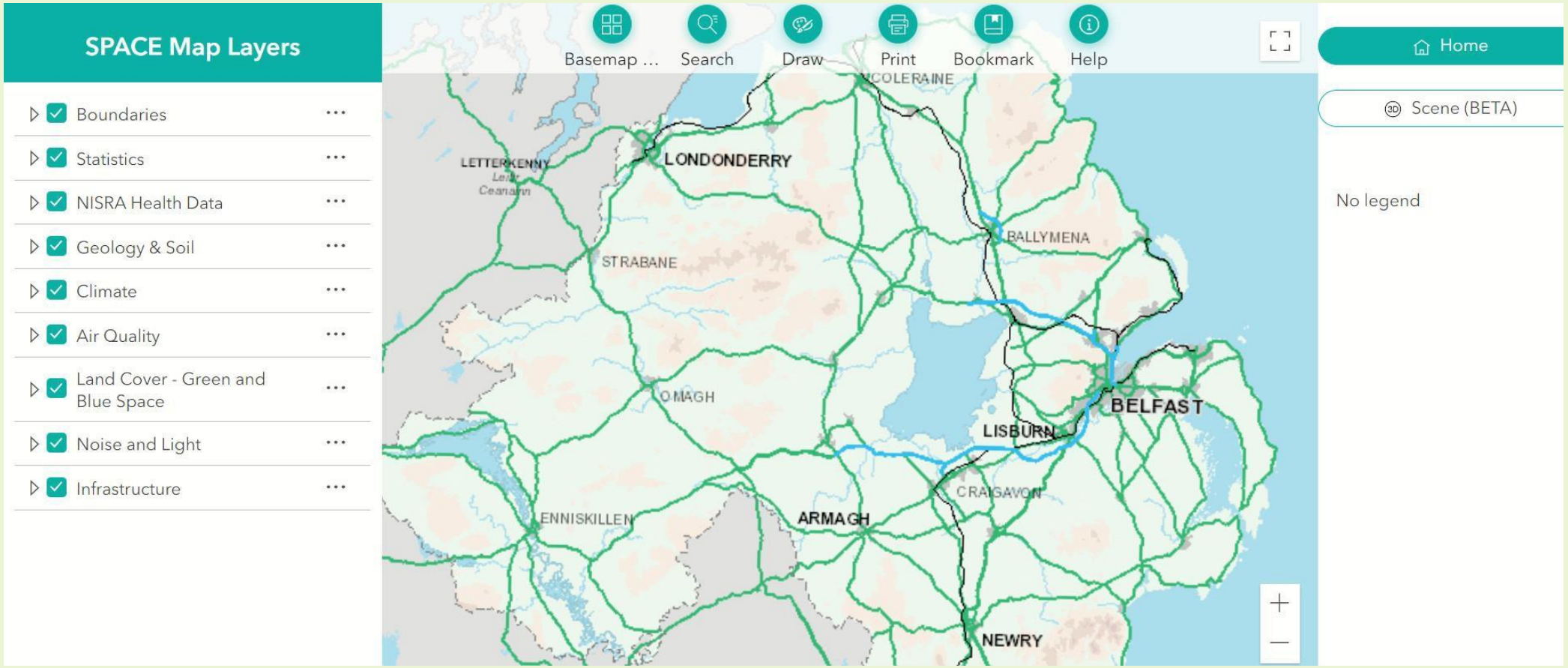
Using Pop-ups for more information



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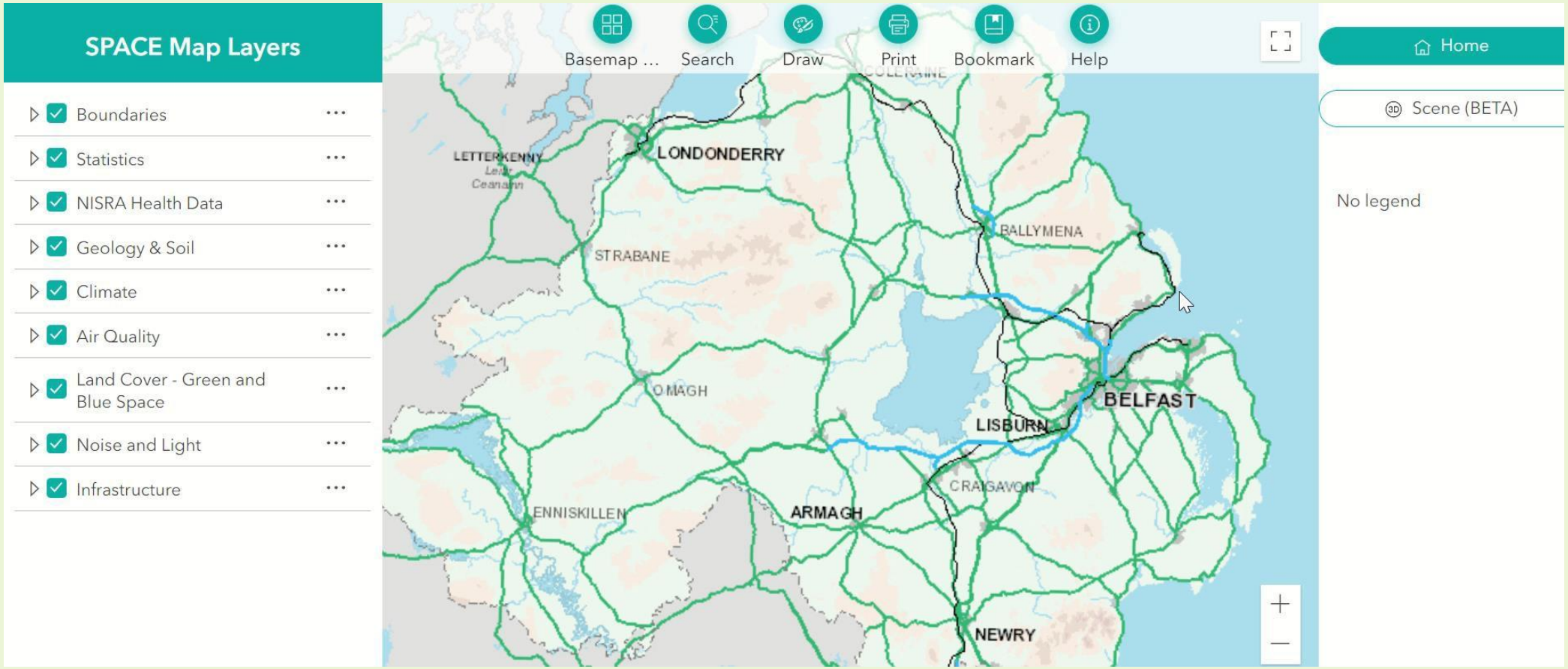
Using Basemaps



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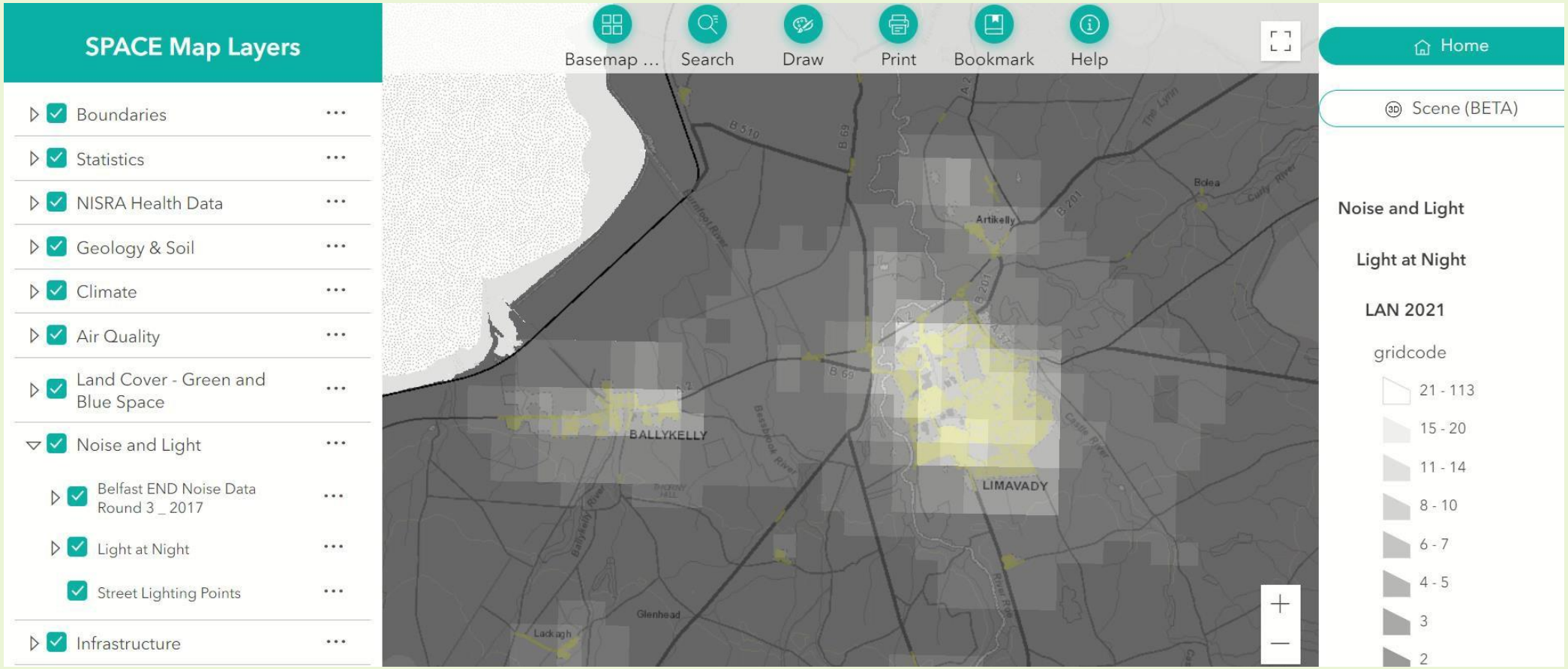

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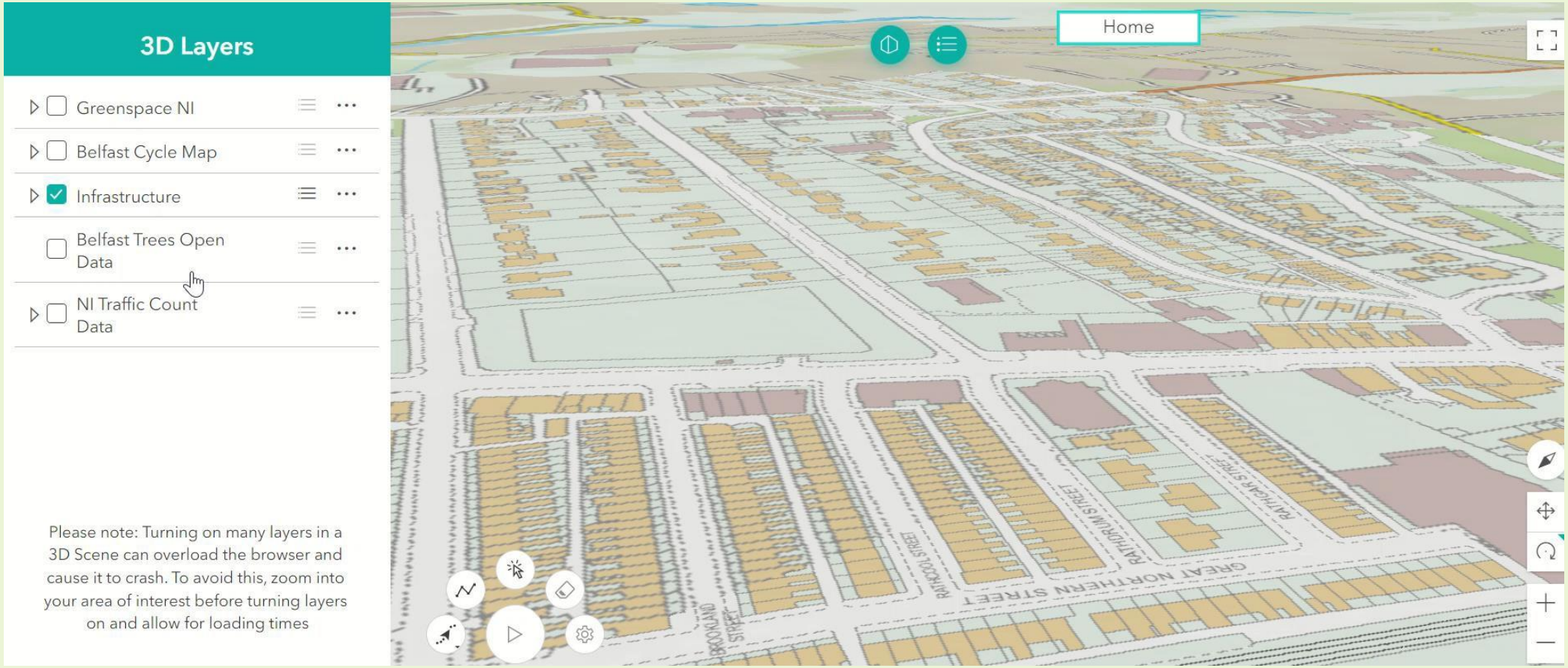
3D Viewer (BETA)



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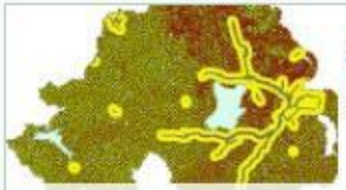
SPACE

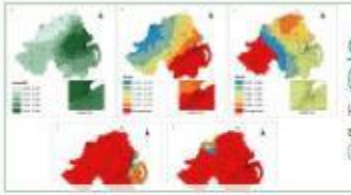
Training Resources contains introductions to some of the areas the team are investigating and the techniques being used in the research

Training Resources



Using GIS in the SPACE Project

Examples of how the GIS data are being used to link environmental variables with health outcomes

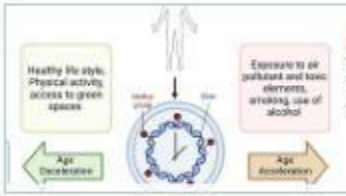


Geographically Weighted Regression (GWR)

How the Environmental data in this study has been analysed using Geographically Weighted Regression (GWR)

Evidence Gap Map (EGM)

This EGM shows the distribution of studies that investigate the link between urban green and blue spaces and each of the United Nation's Sustainable Development Goals.

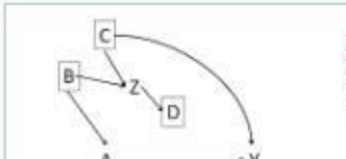


Epigenetics in SPACE

How do factors in our external environment get 'under the skin' to change our biology and affect health outcomes?

Causal Loop Diagram

In December 2021, we carried a 2-day workshop in which experts from different disciplines identified multiple factors and their interconnections contributing to mild cognitive impairment and dementia in urban populations.

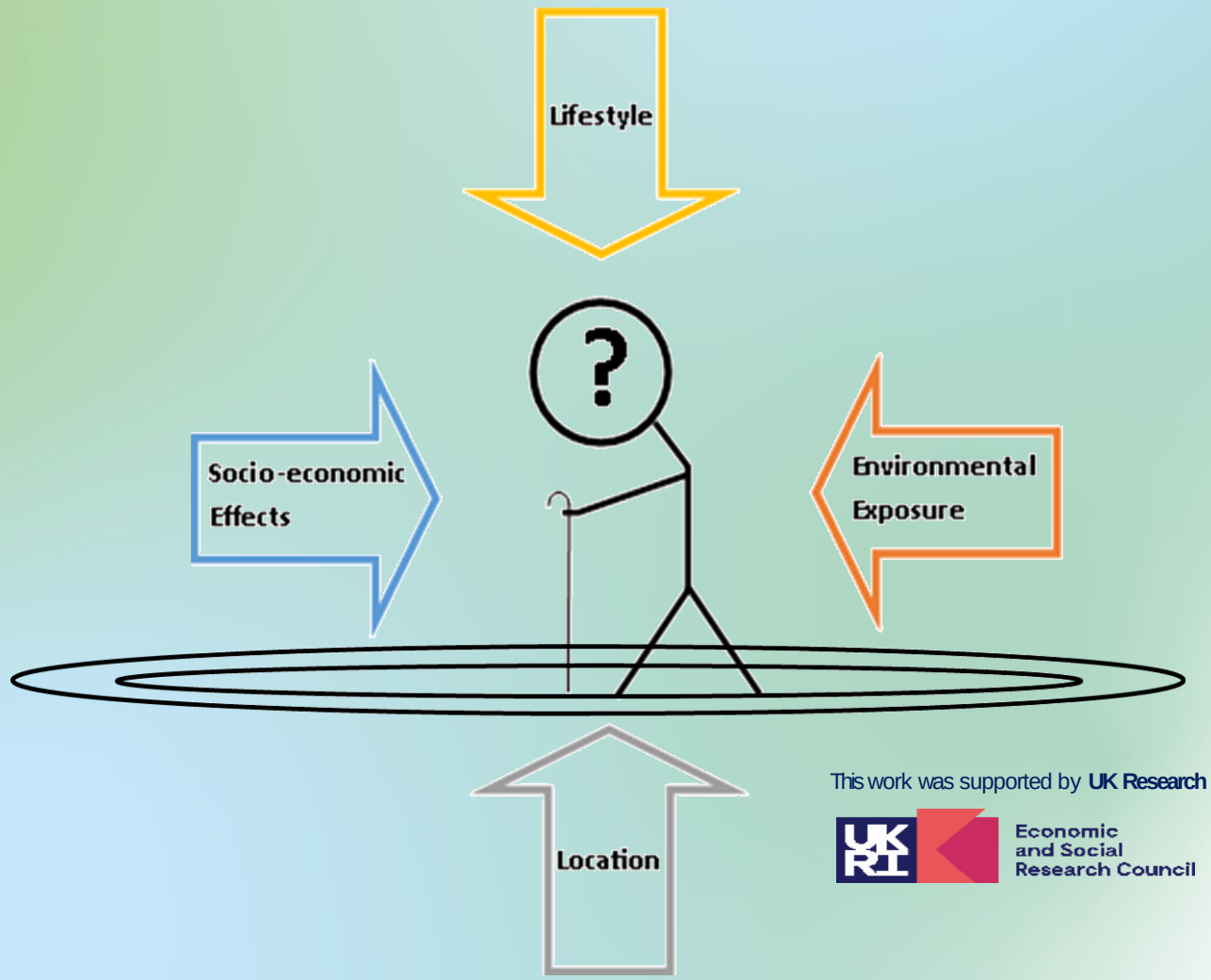


Directed Acyclic Graphs

Find out more about how DAGs are used in the SPACE programme

Environment and health factsheets and videos

SPACE RESEARCH PROJECT APPROACH



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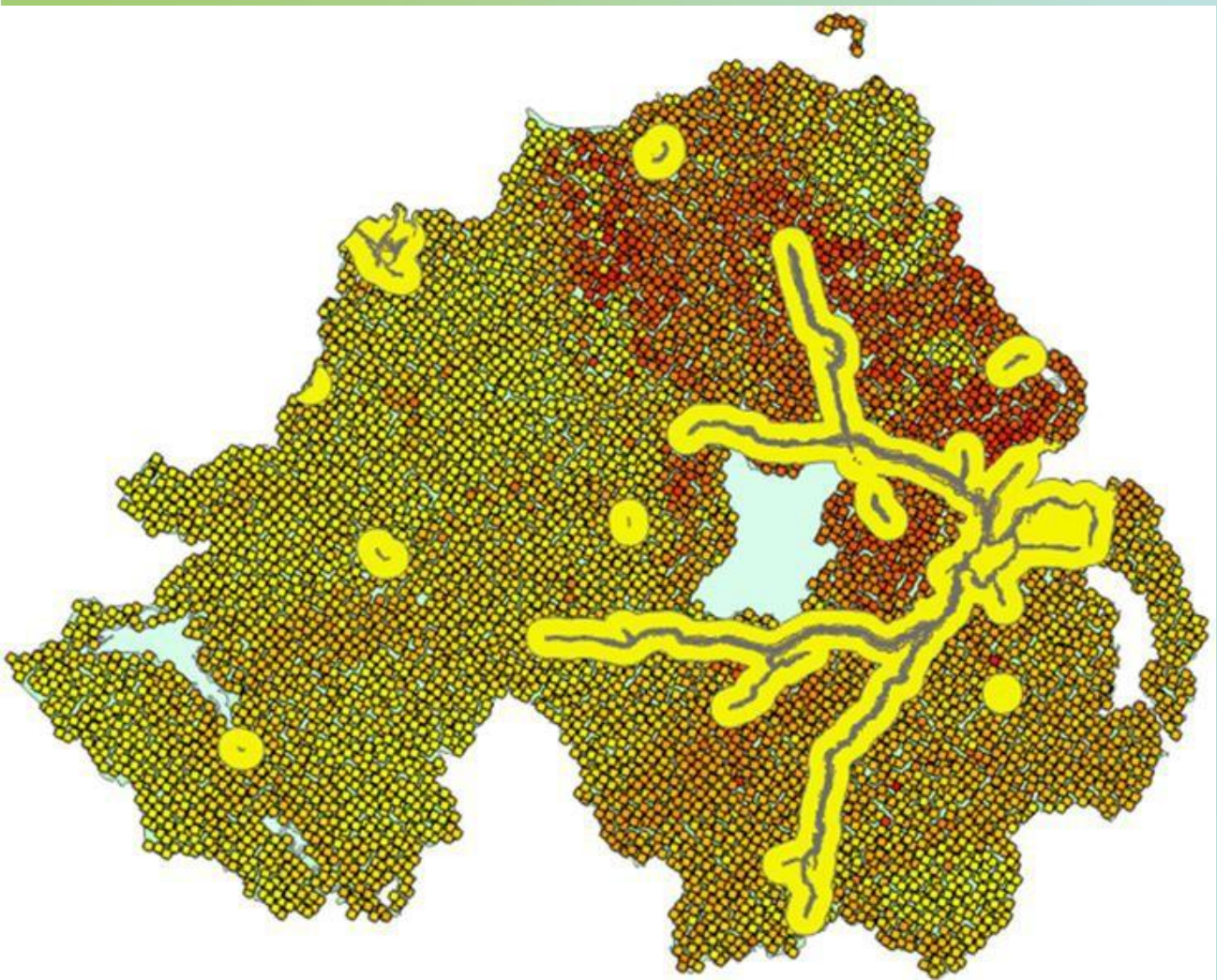
Healthy Ageing Challenge
Social, Behavioural and Design Research

An Integrated Approach to Environmental Exposures



CHROMIUM IN SOILS AND THE NOISE ROAD NETWORK MAP

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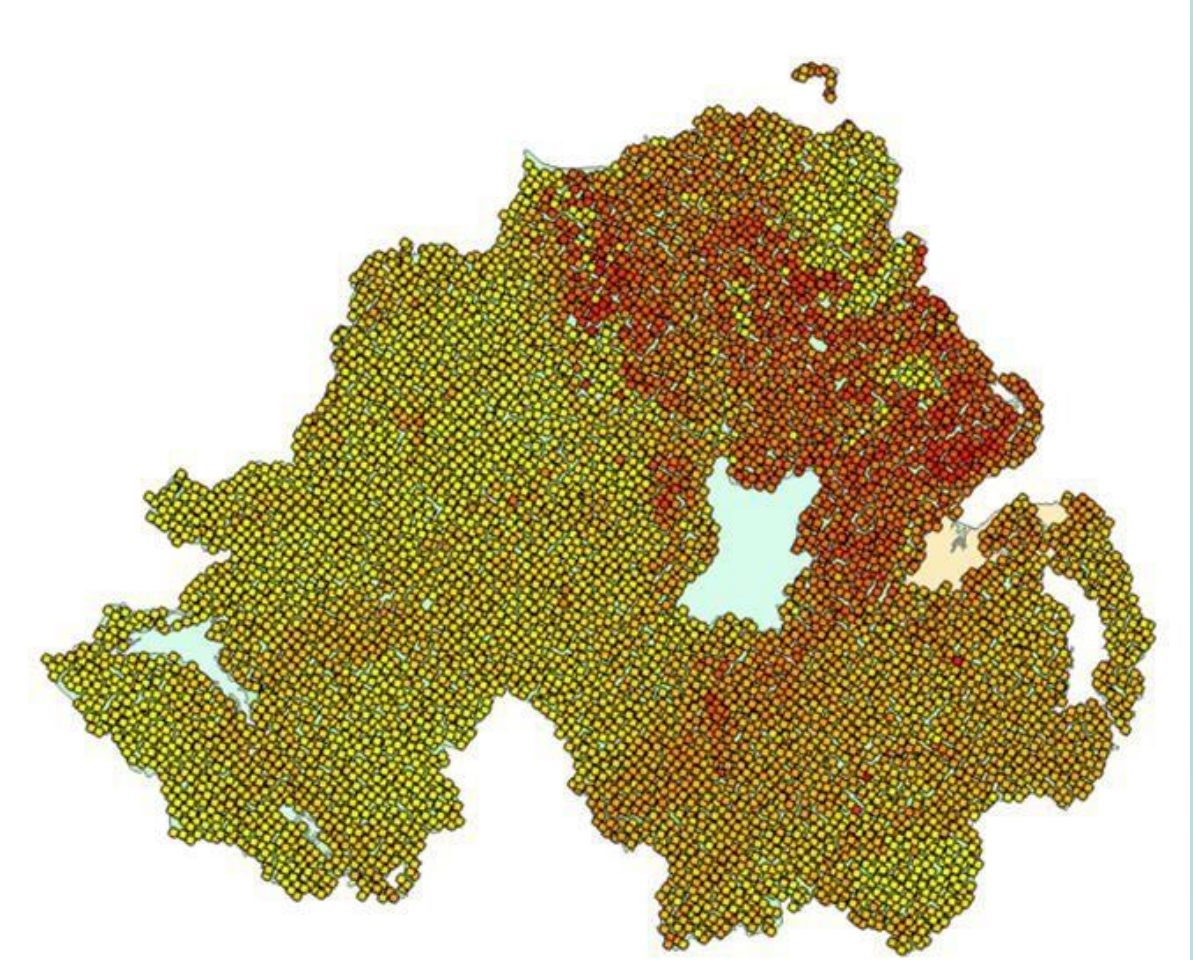
Synergisms around Roads

Cr mg/kg



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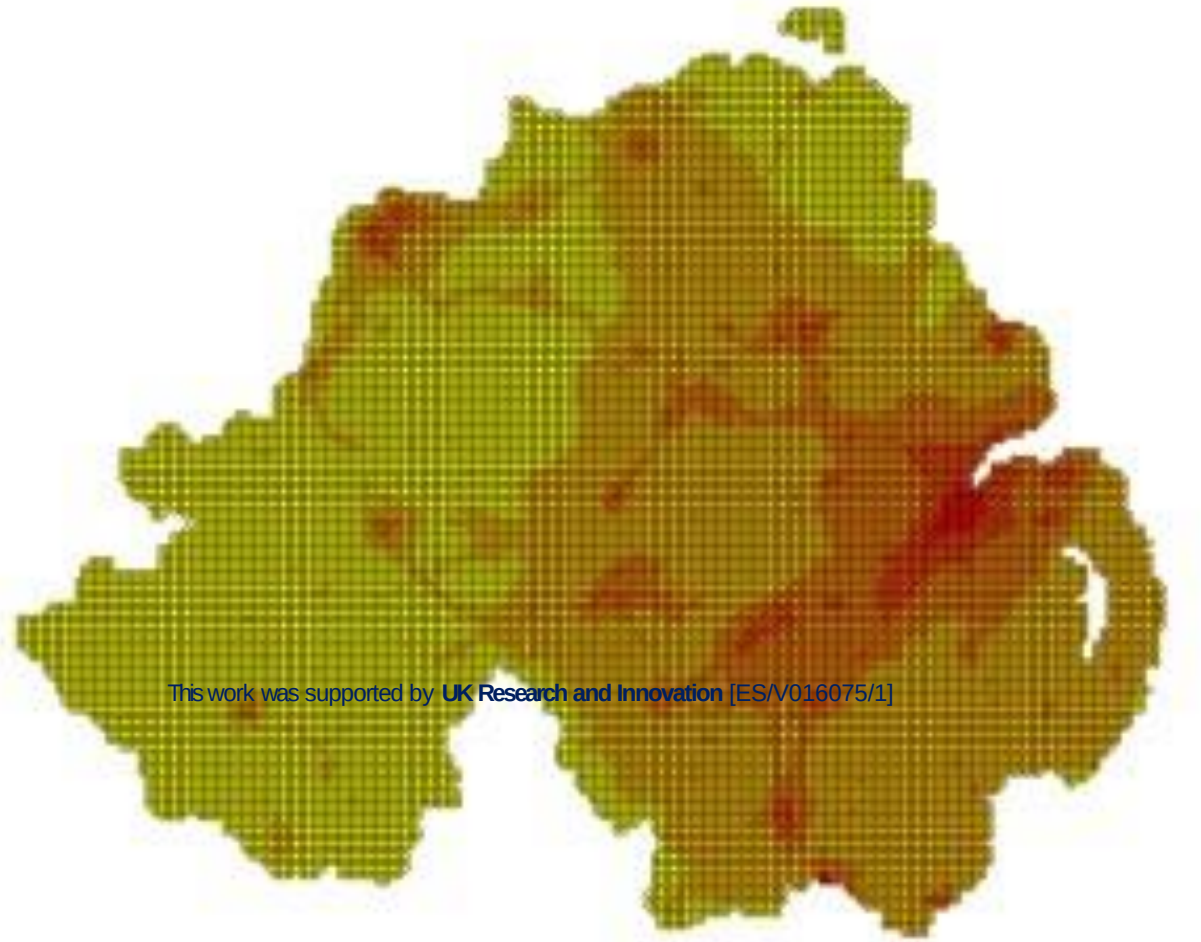

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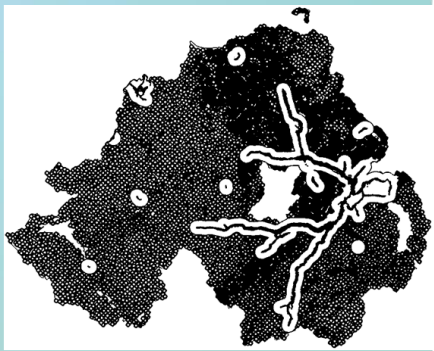

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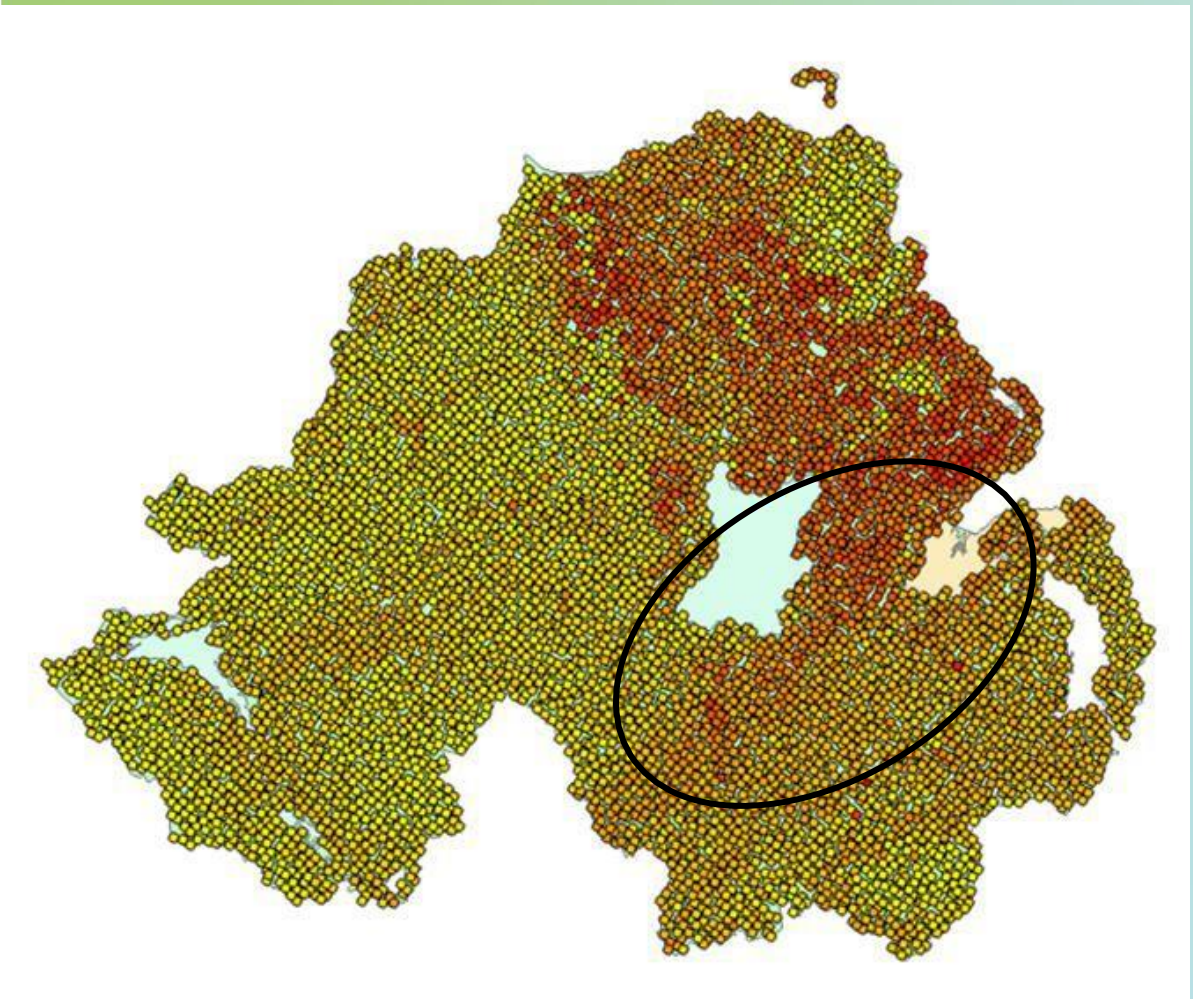

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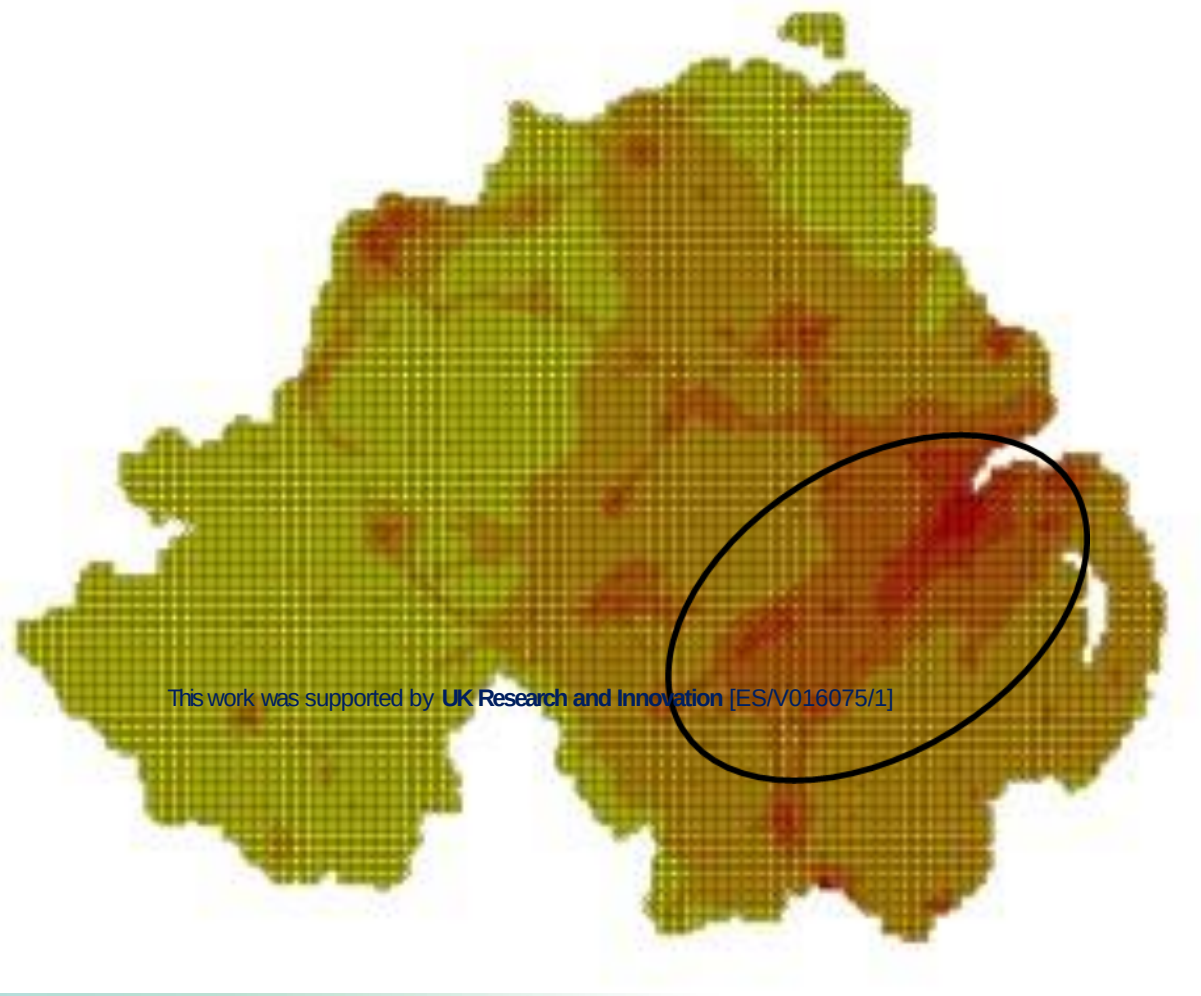

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Thank you

Access the SPACE website: https://www.qub.ac.uk/sites/space/

Access the SPACE geoportal: SPACE Geoportal (arcgis.com)

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Policy and impact tools from the SPACE project

Dr Niamh O'Kane

Shaping Outdoor Environments to Promote Healthy Ageing
Wed 4th Dec 2024

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The SPACE approach to policy and impact

- Engaging with a range of stakeholders
- Understanding how people want to receive information
- Responding to challenges and opportunities
- Co-creation of resources and outputs
- In-person and online events and activities
- Simple and ‘sustainable’ outputs

SPACE
WEBINAR: The impact of microplastics and other novel environmental exposures on public health
Tues 28th Nov
10.00-11.30am
The SPACE project examines the link between where we live and its effect on dementia and brain health as we age. This webinar will explore the next wave of environmental exposures and their potential impact on public health, including exposure to pollutants within the home and by-products of the transition to net zero.
Speakers include:
Prof Frank Kelly
Dr Dan Middleton
Prof Juliana Early
Register now and join us on Zoom
Belfast
Healthy City

AGEING IN SPACE

SPACE
SPACE QUB
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WELCOME to SPACE
Thurs 8th Feb 2024
SPACE
Thursday 8th Feb 2024

SPACE Map Layers
LONDONDERRY
STRABANE
OMAGH
BELFAST
BANGOR
LISBURN
ARMAGH

SPACE

Green and blue space
reen space is any natural space that contains trees, grass or any other green vegetation. Blue space is any atural space that contains water, like rivers, lakes, and the sea.
Exposure has multiple benefits, specifically improving mental and cognitive health and increasing physical activity, but also environmental benefits like reducing air pollution, noise and city temperature (1)

SPACE
Planetary Health and Climate Change

The importance of urban green and blue space and nature based solutions...
Urban environment exposures and cognitive health: an evidence gap map of systematic reviews

SPACE

Types of outputs and activities from SPACE

- Journal articles
- Training materials
- Events
- Social media
- Children's books
- Geoportal

- Evidence Gap Map
- Reports
- Video series
- Factsheets
- Webinars
- Podcast

SPACE Evidence gap map

https://bit.ly/4fXUvfV

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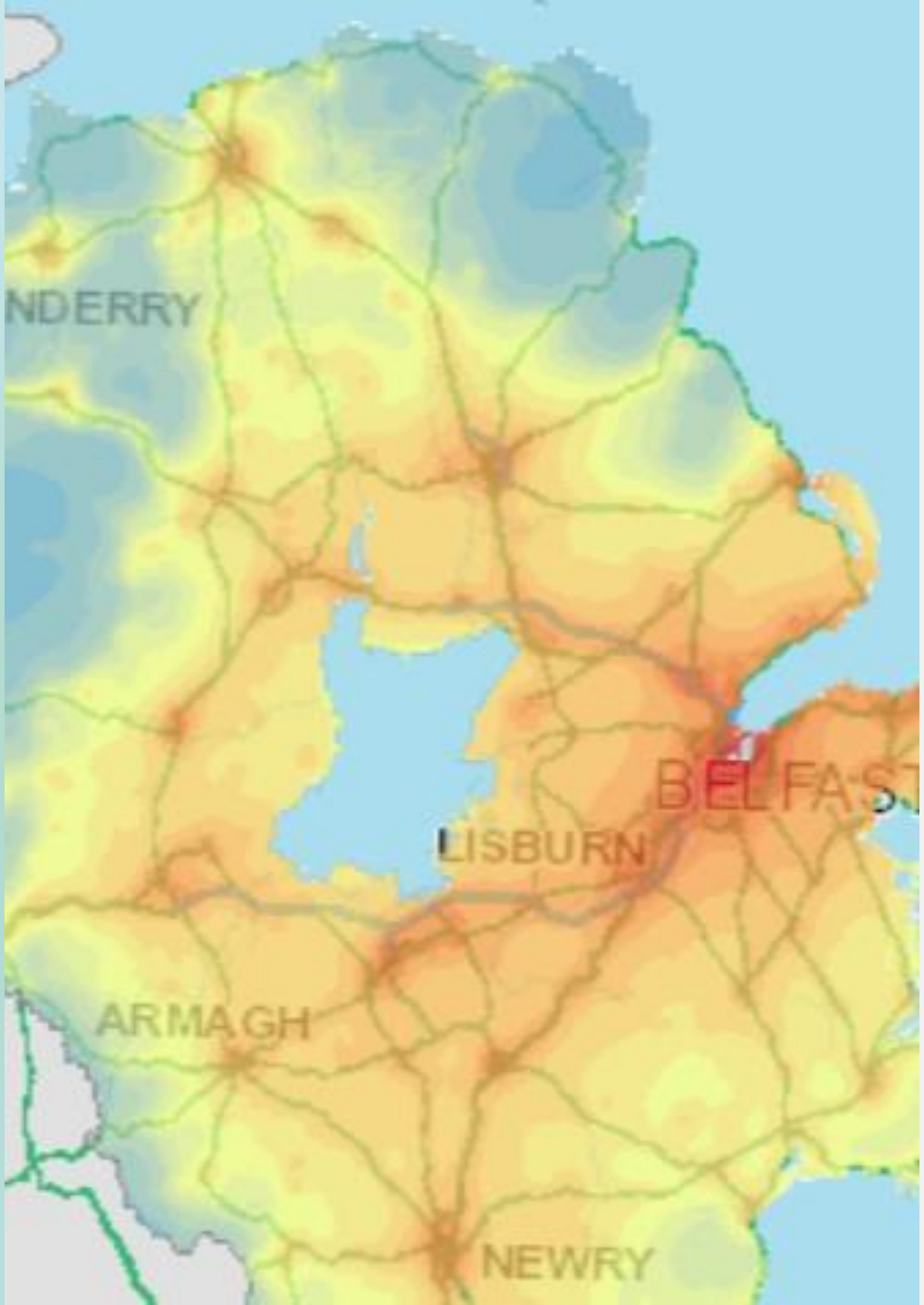

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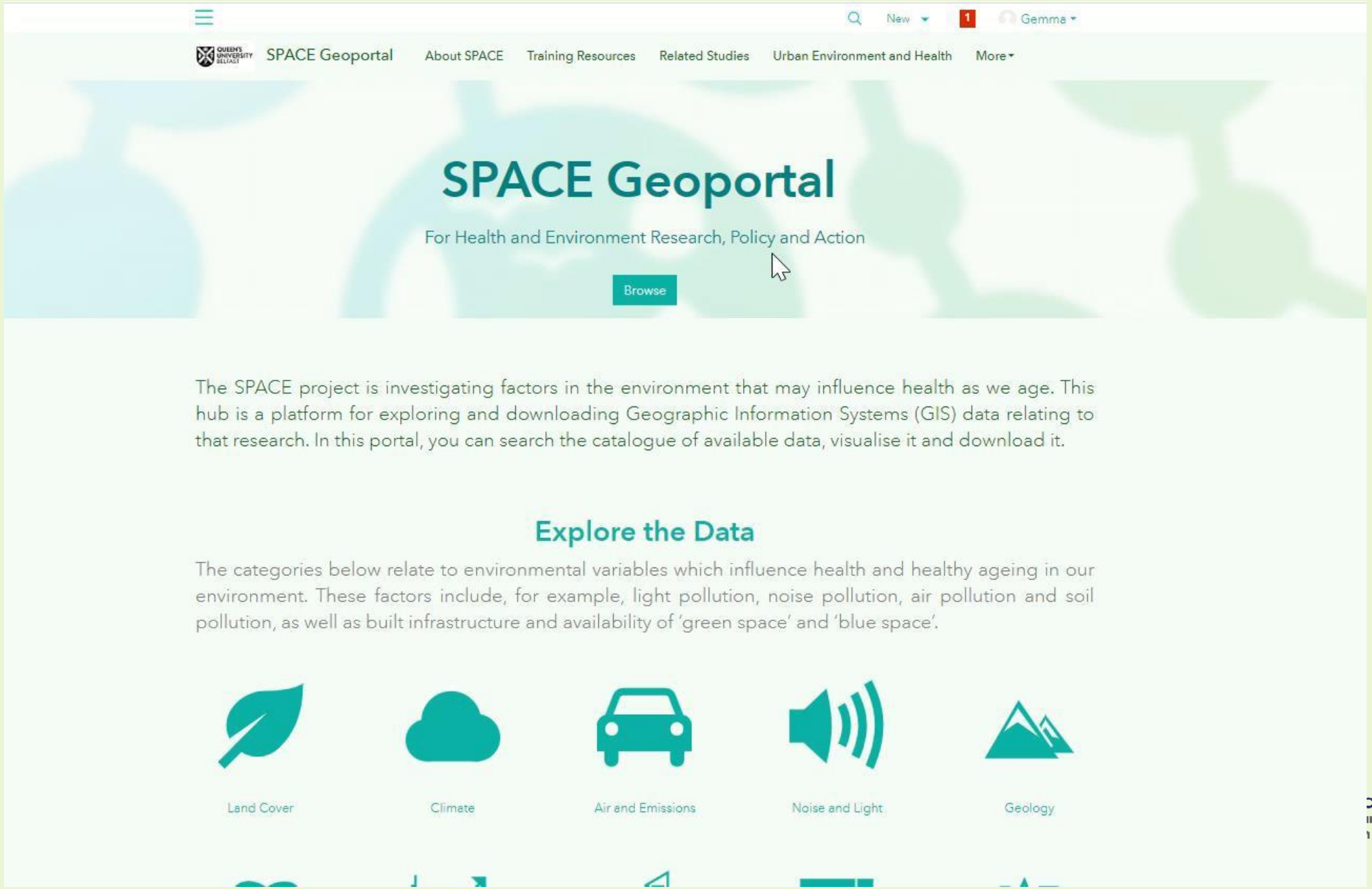
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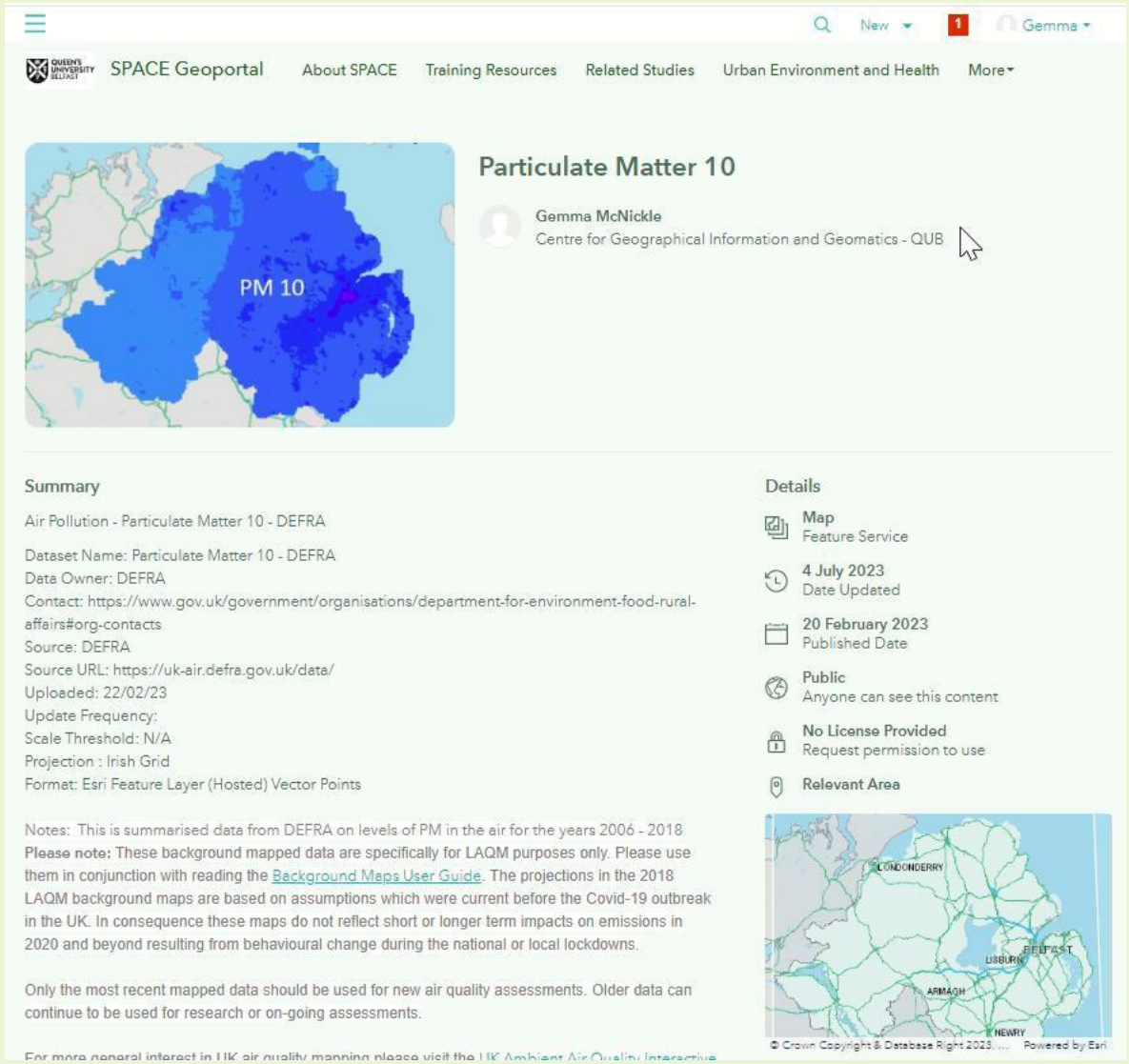

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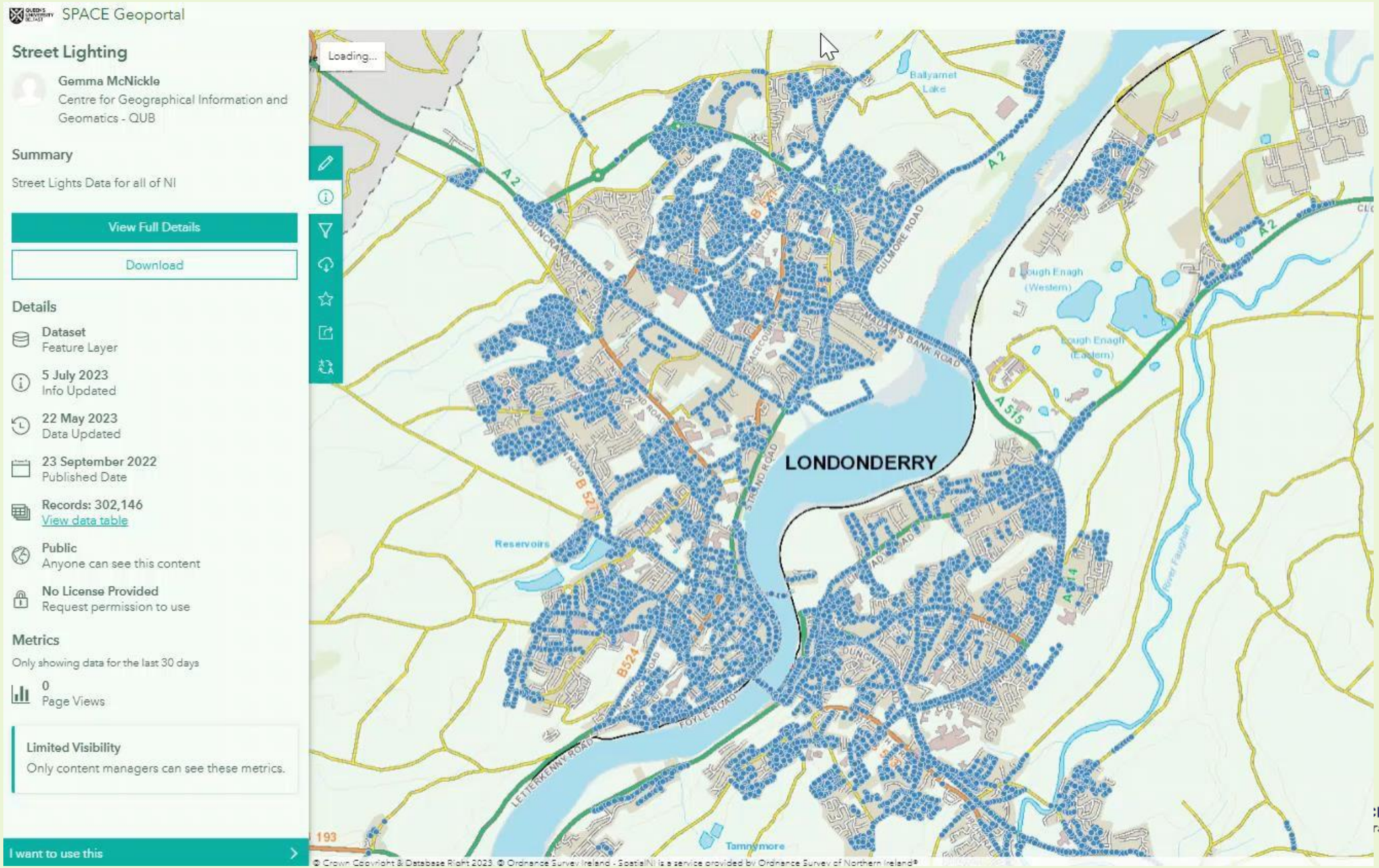
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Street Lighting
Gemma McNickle
Centre for Geographical Information and Geomatics - QUB
Summary
Street Lights Data for all of NI
View Full Details
Download
Details
Dataset
Feature Layer
5 July 2023
Info Updated
22 May 2023
Data Updated
23 September 2022
Published Date
Records: 302,146
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Tamnymore
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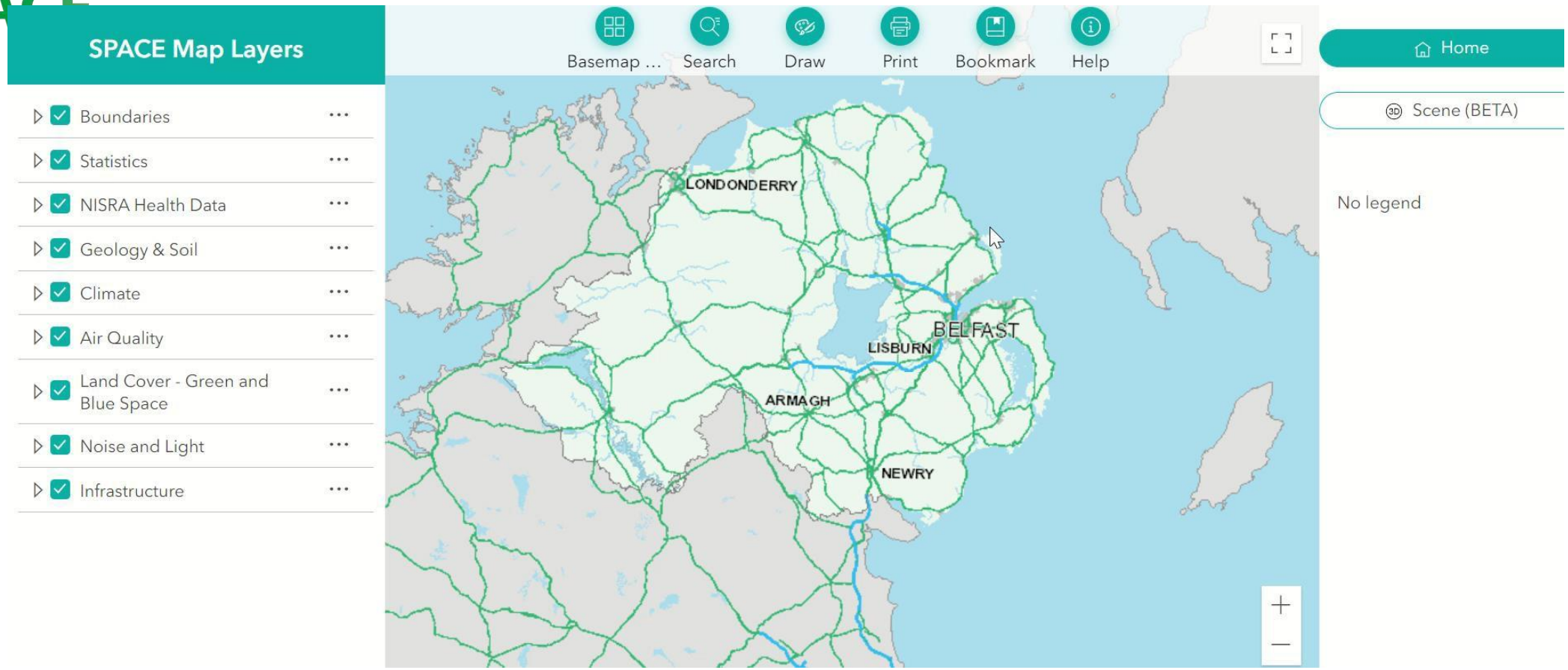
SPACE Map Viewer – Layer list for comparing data



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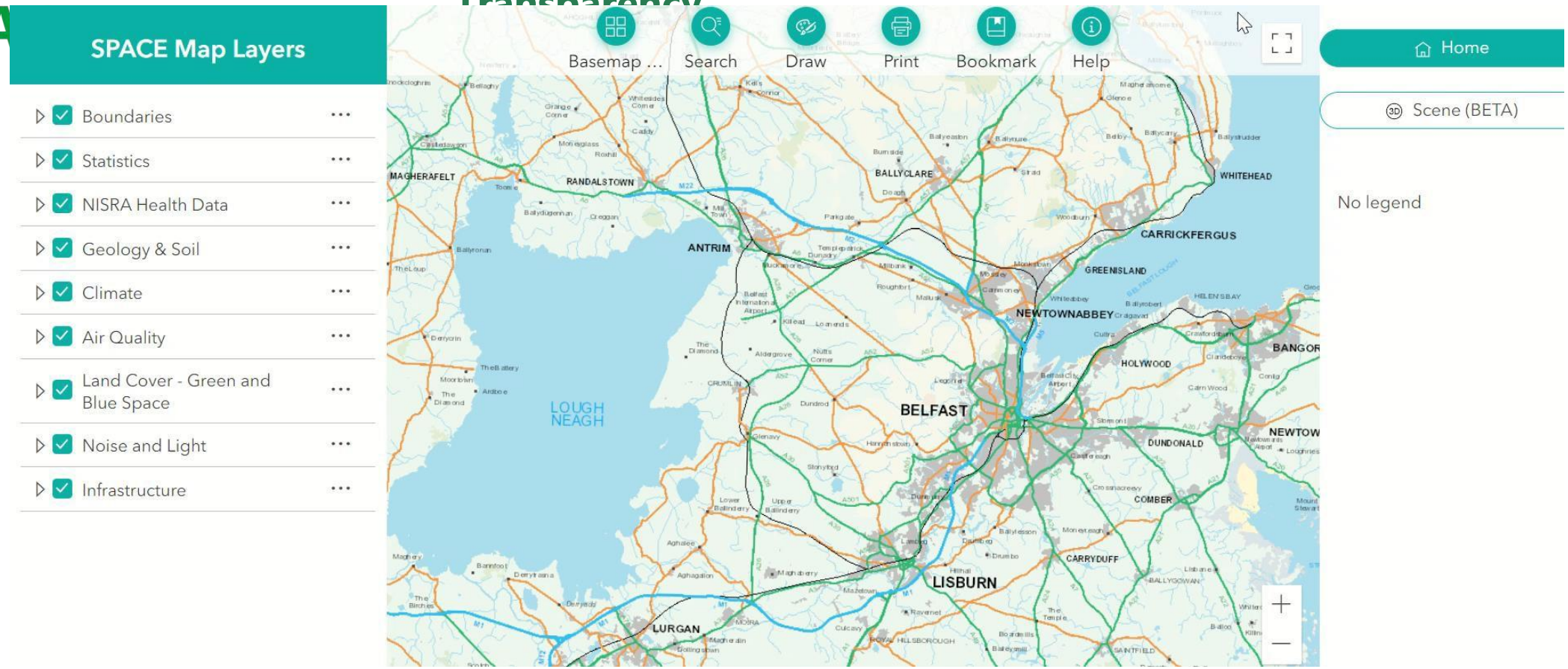
Comparing layers using Transparency



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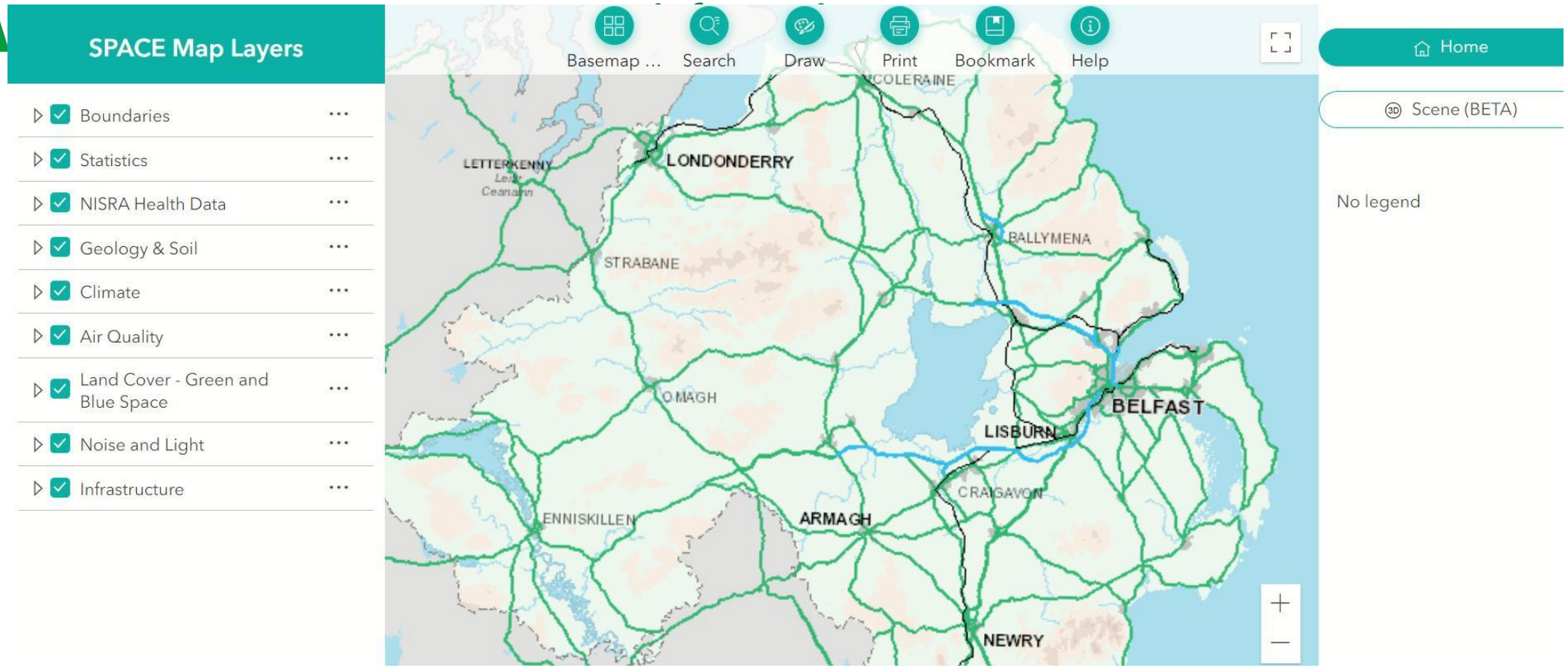
Using Pop-ups for more



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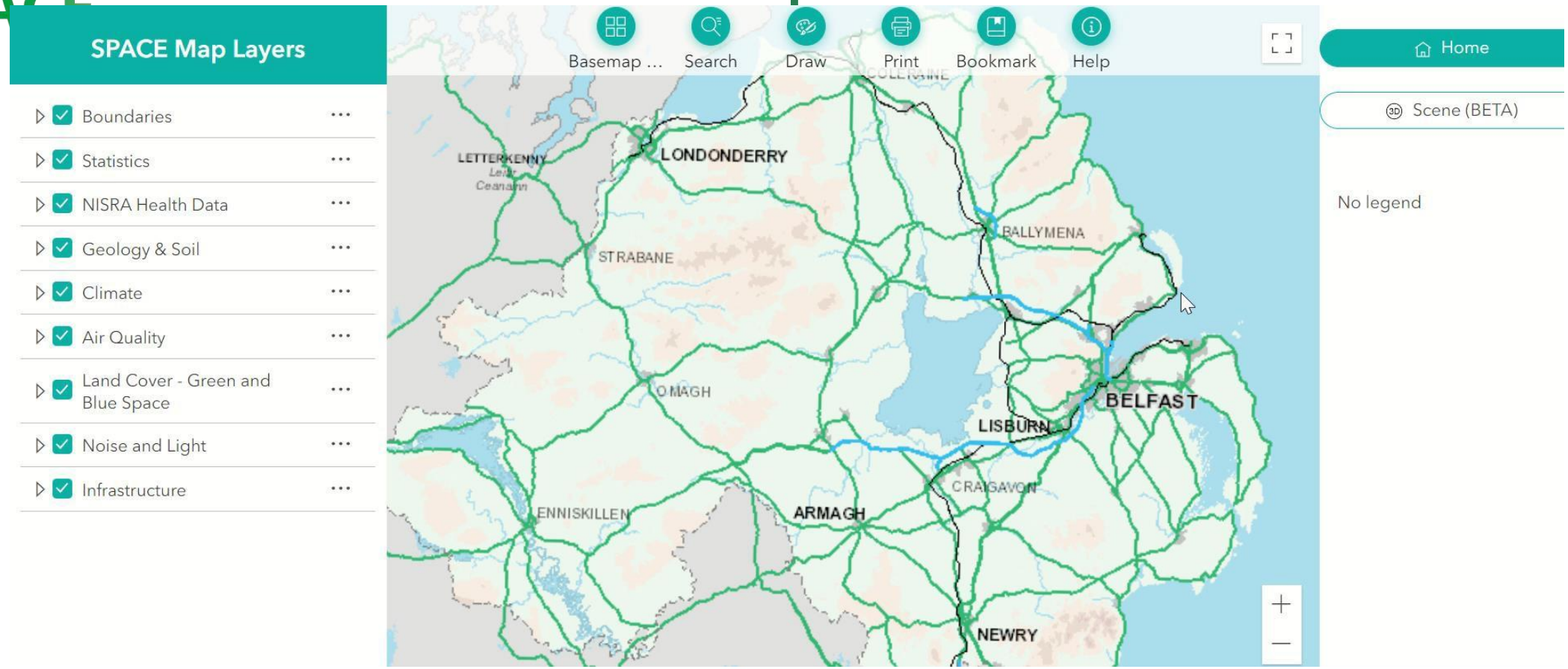

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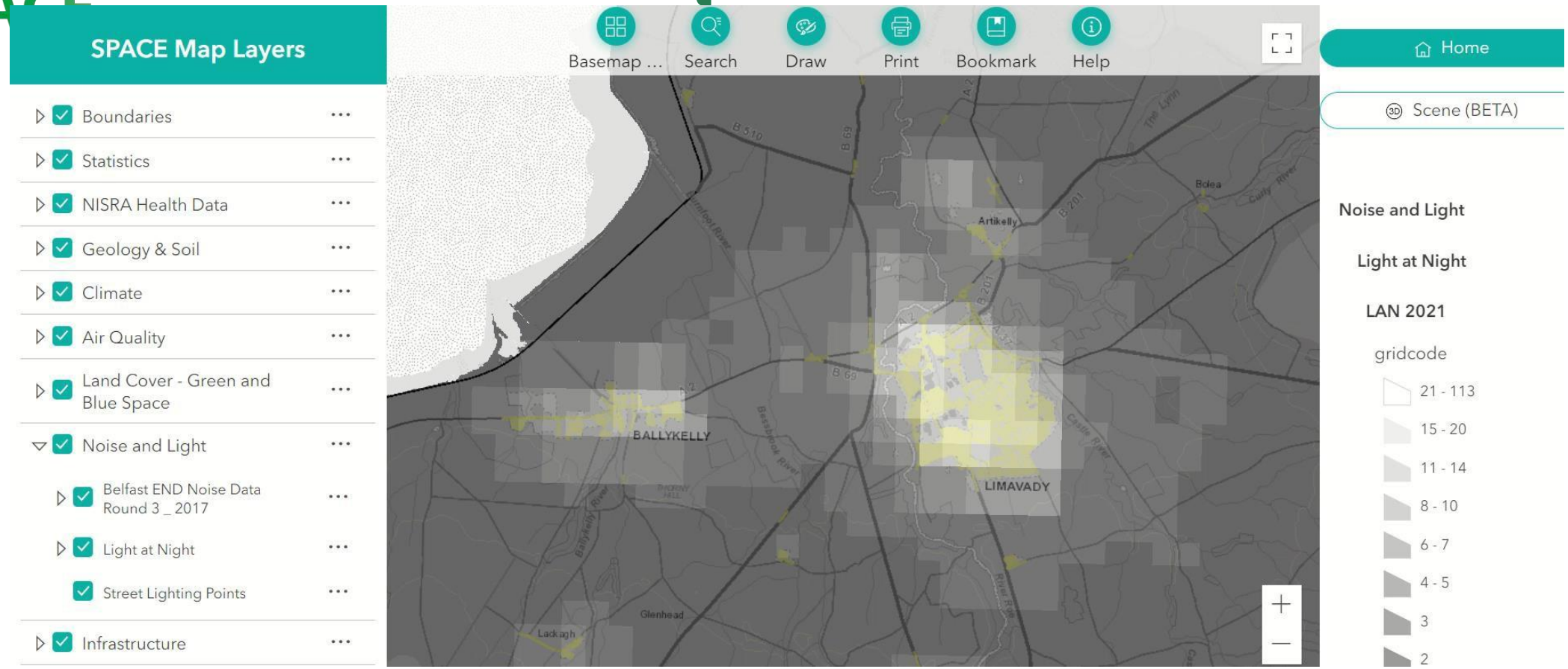
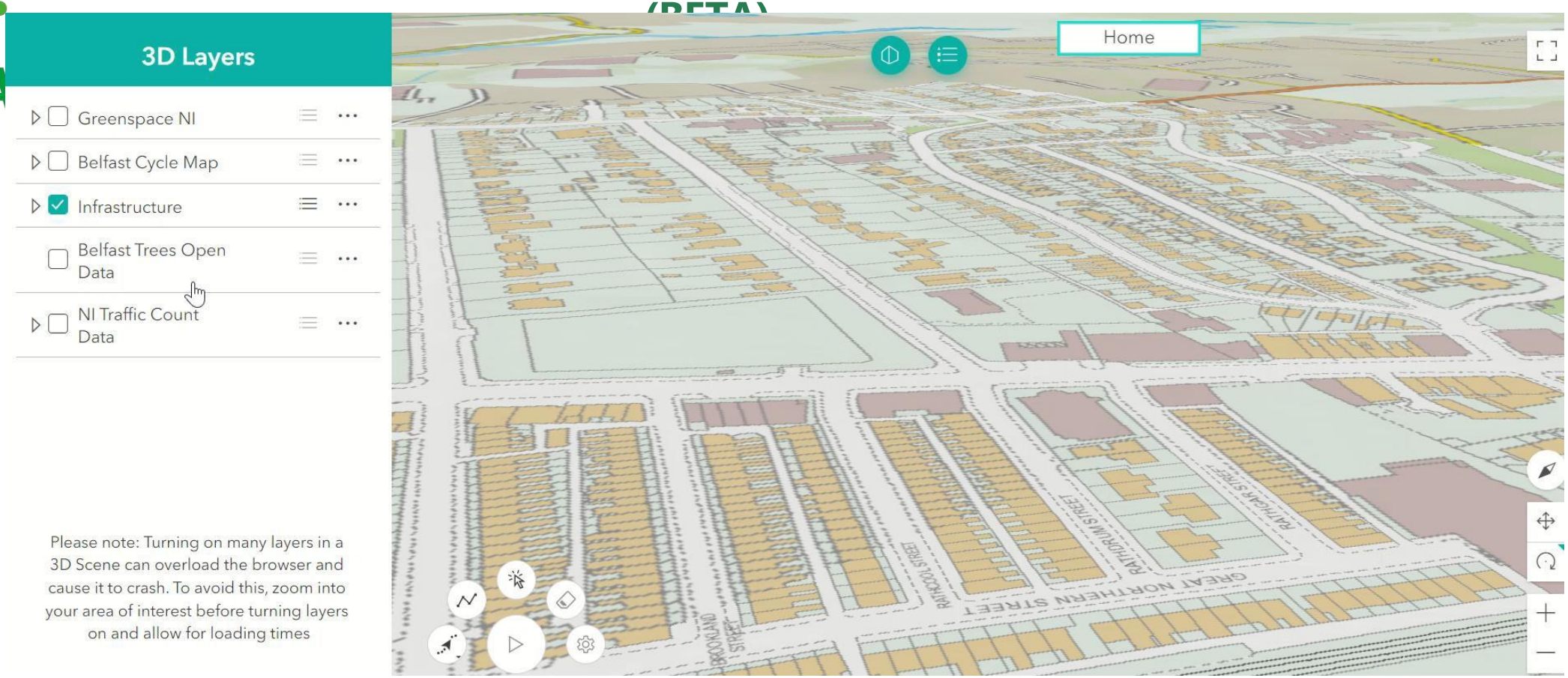
Print



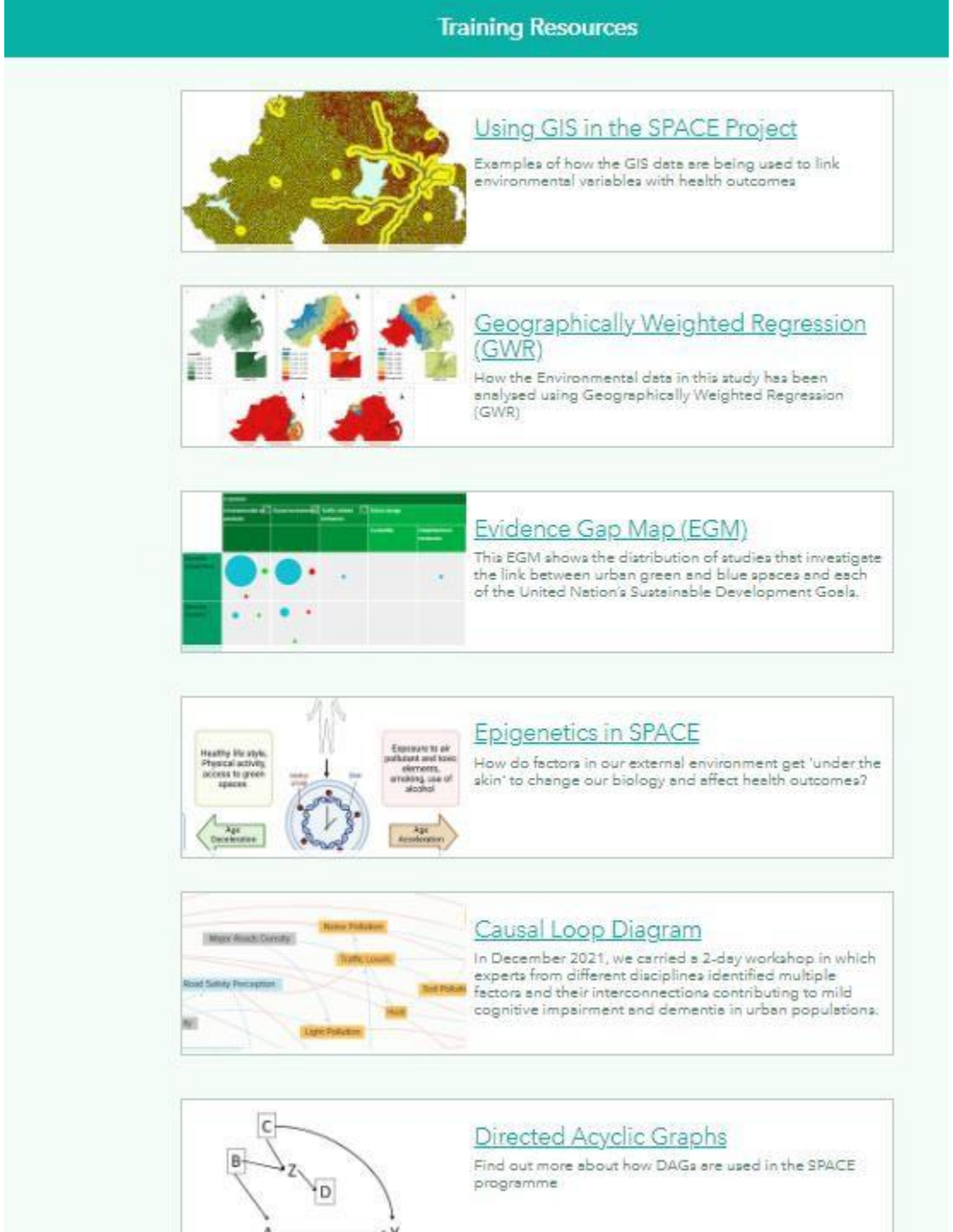
This work was supported by **UK Research and Innovation** [ES/V016075/1]

3D Viewer (BETA)



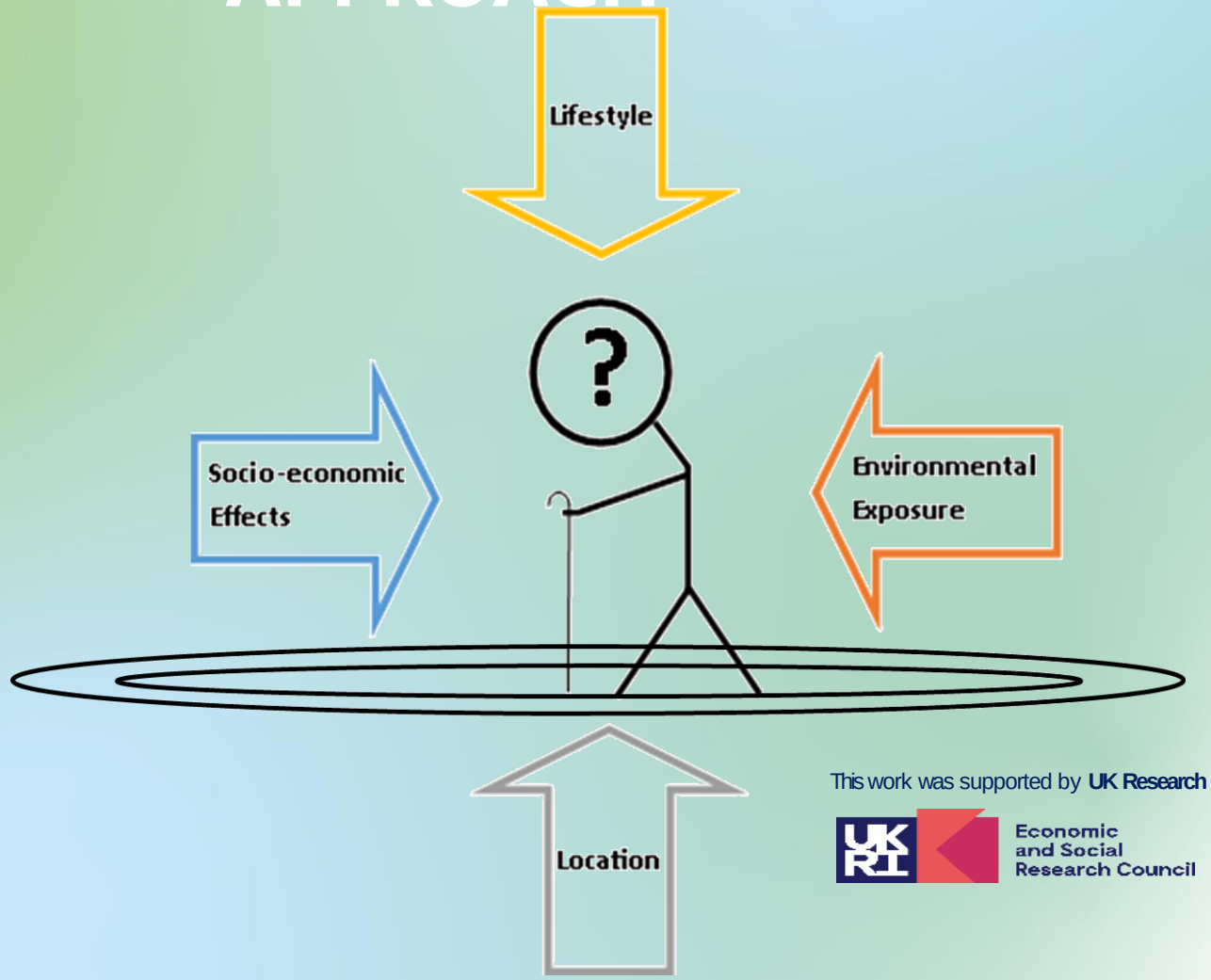
This work was supported by **UK Research and Innovation** [ES/V016075/1]

Training Resources contains introductions to some of the areas the team are investigating and the techniques being used in the research



Environment and health factsheets and videos

SPACE RESEARCH PROJECT APPROACH

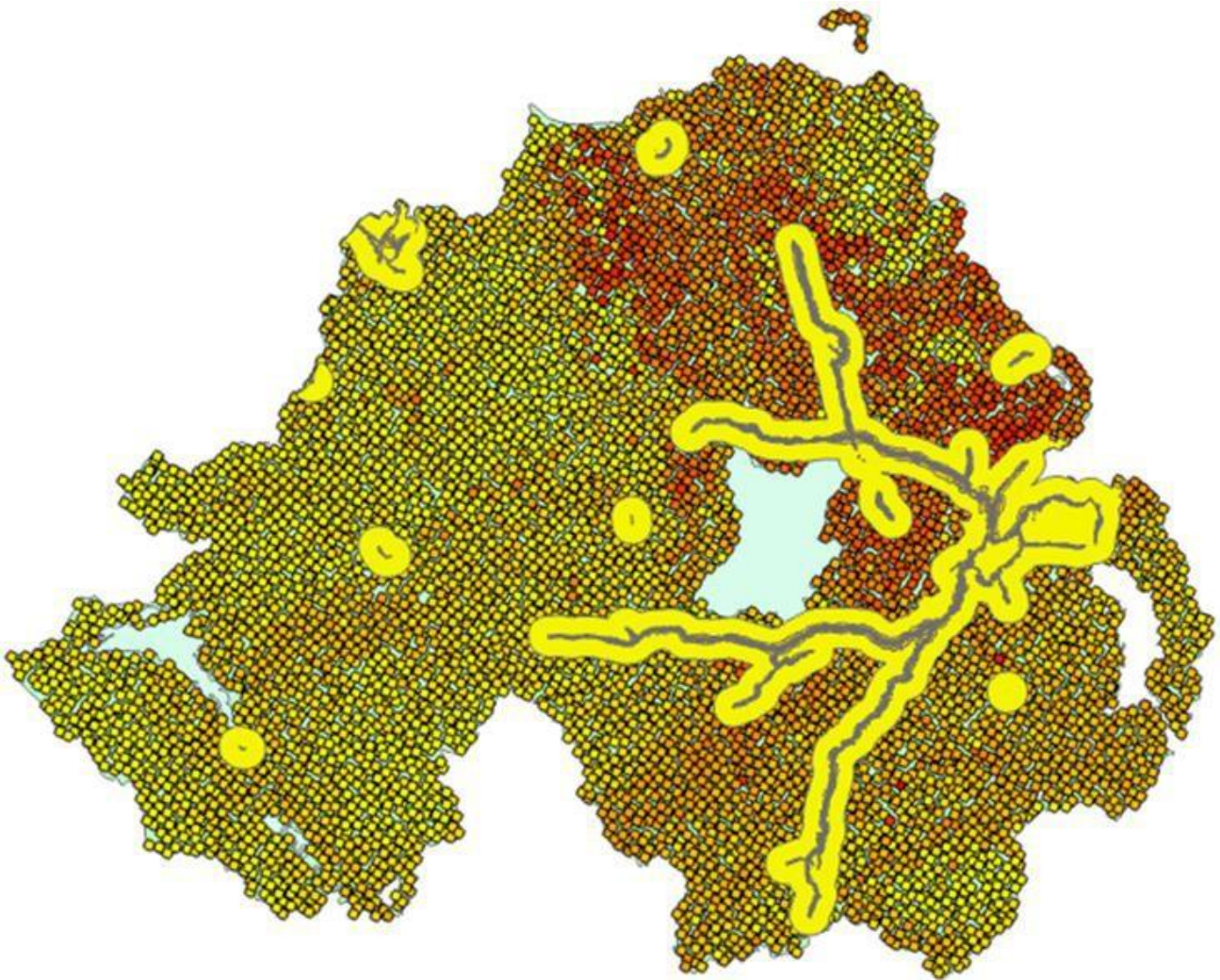


This work was supported by **UK Research and Innovation** [ES/V016075/1]

Economic and Social Research Council

Healthy Ageing Challenge
Social, Behavioural and Design Research

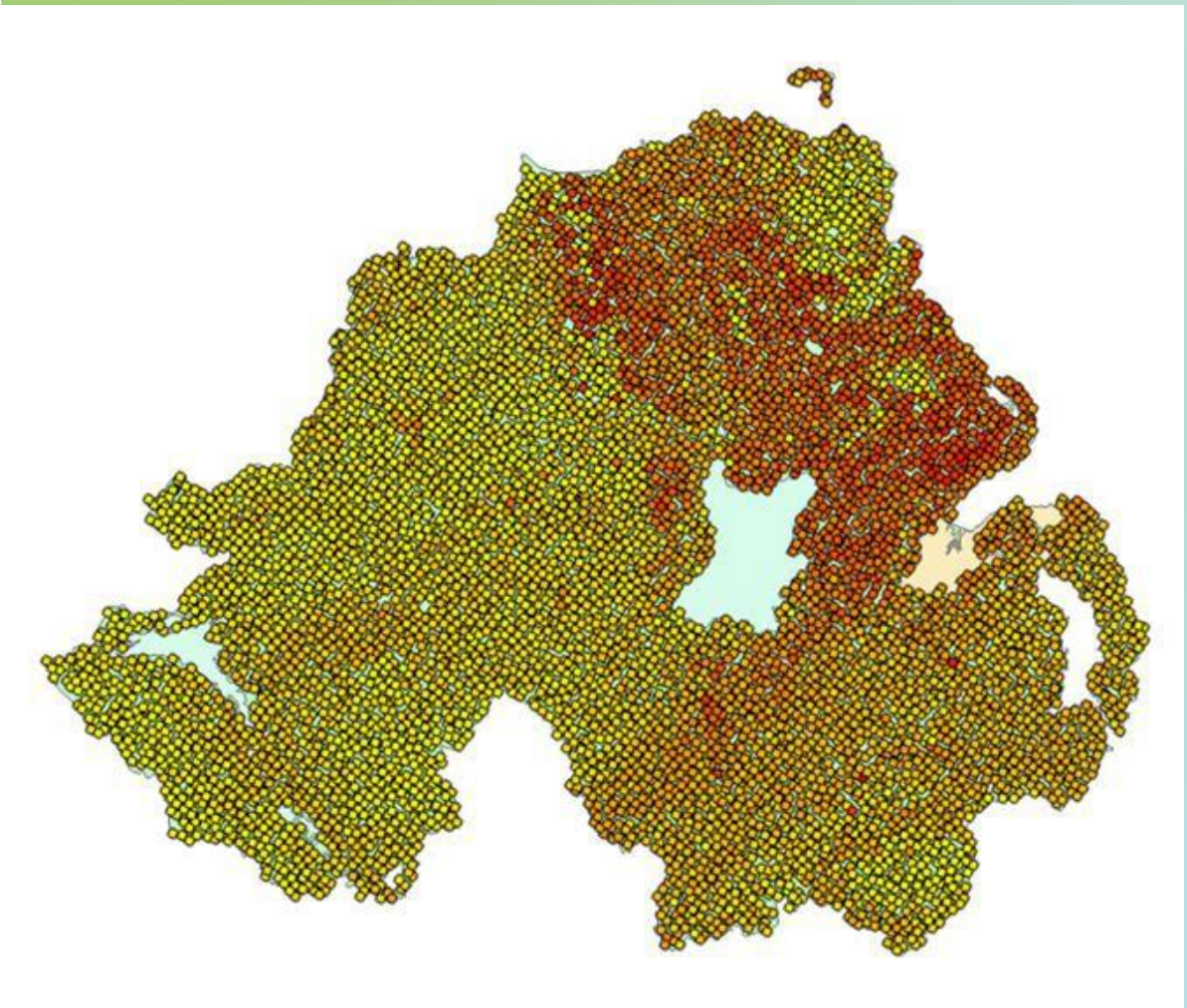
SPACE



This work was supported by **UK Research and Innovation** [ES/V016075/1]

Synergisms around Roads

Cr mg/kg



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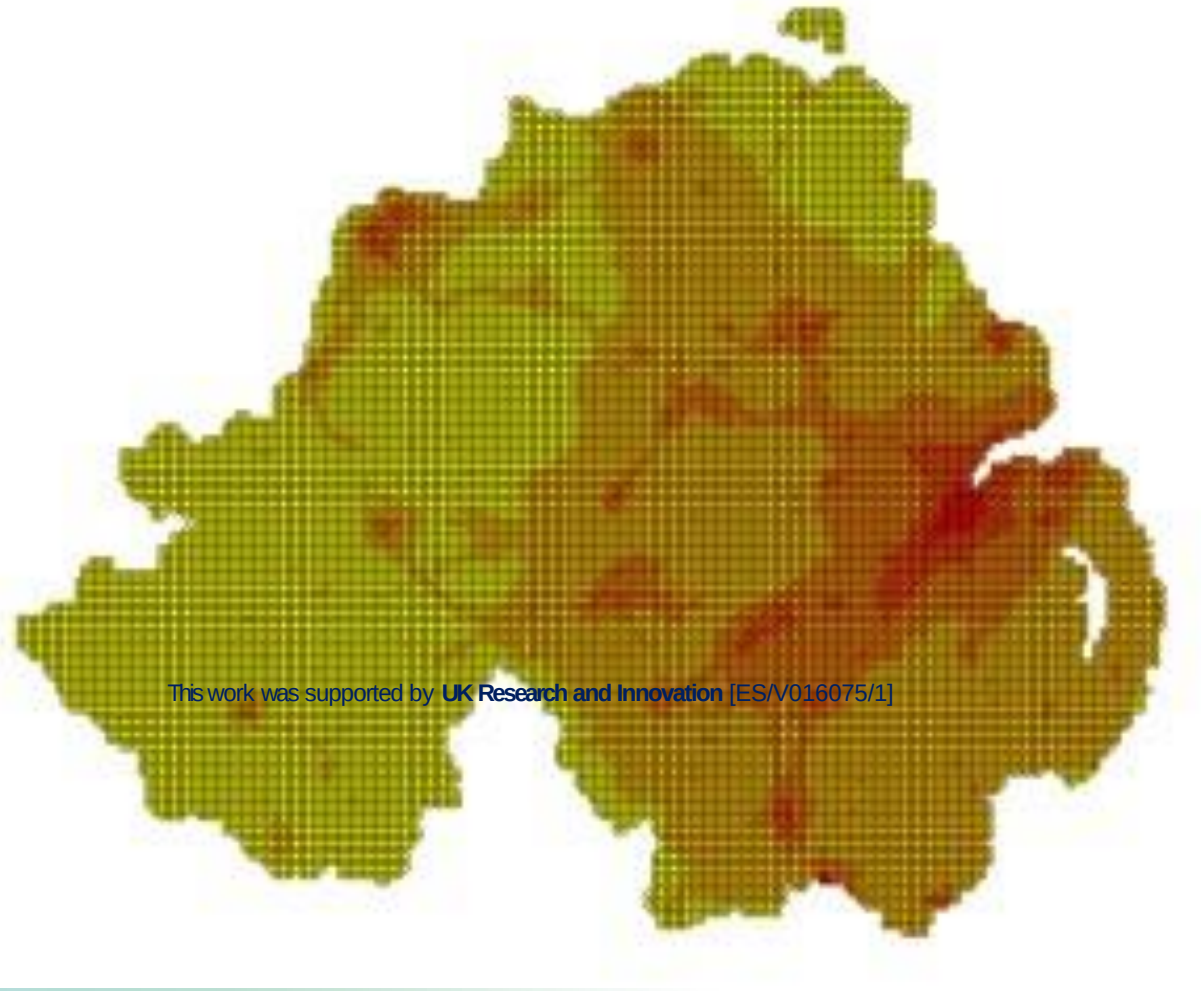

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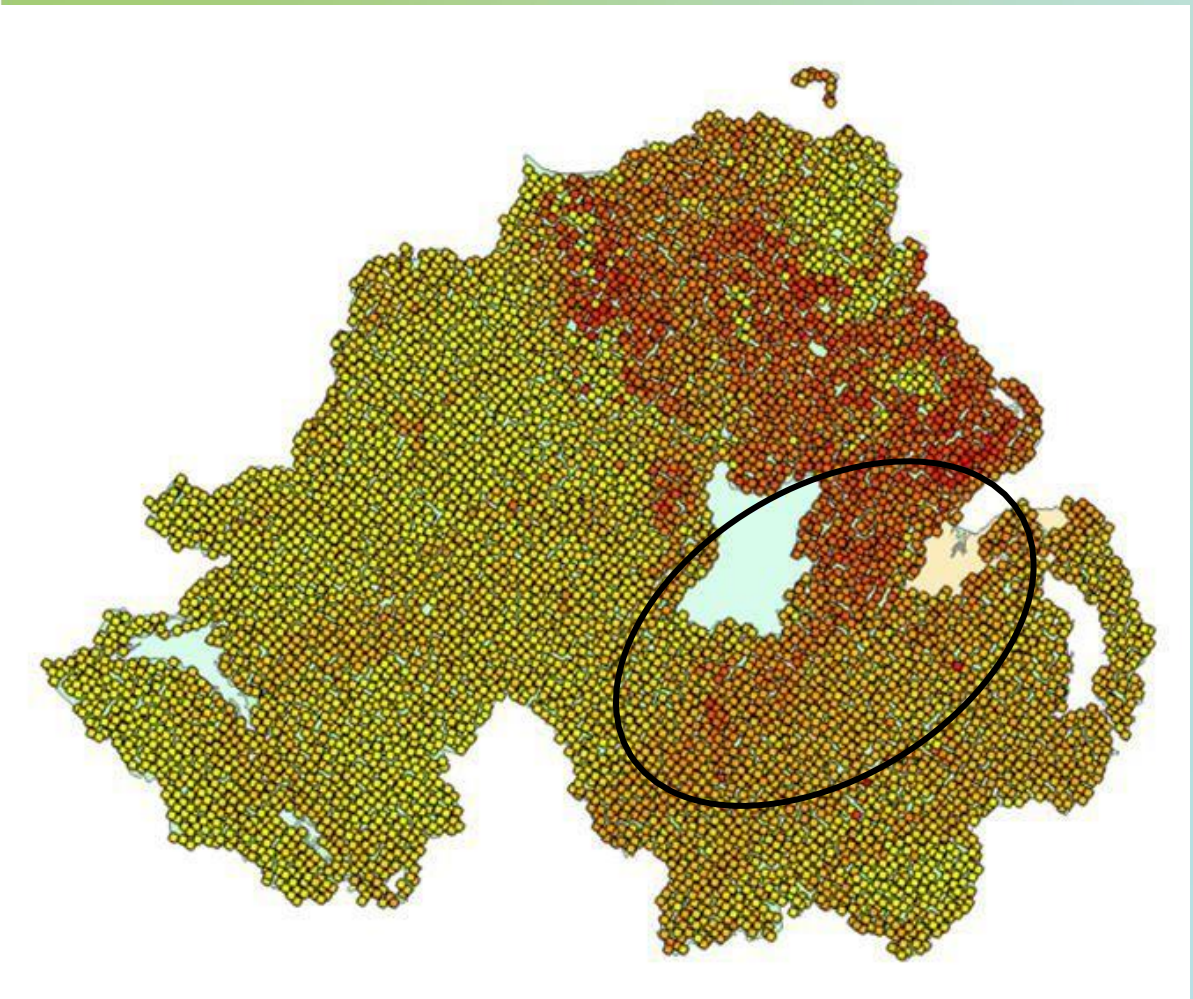
Synergisms around Roads

Cr mg/kg



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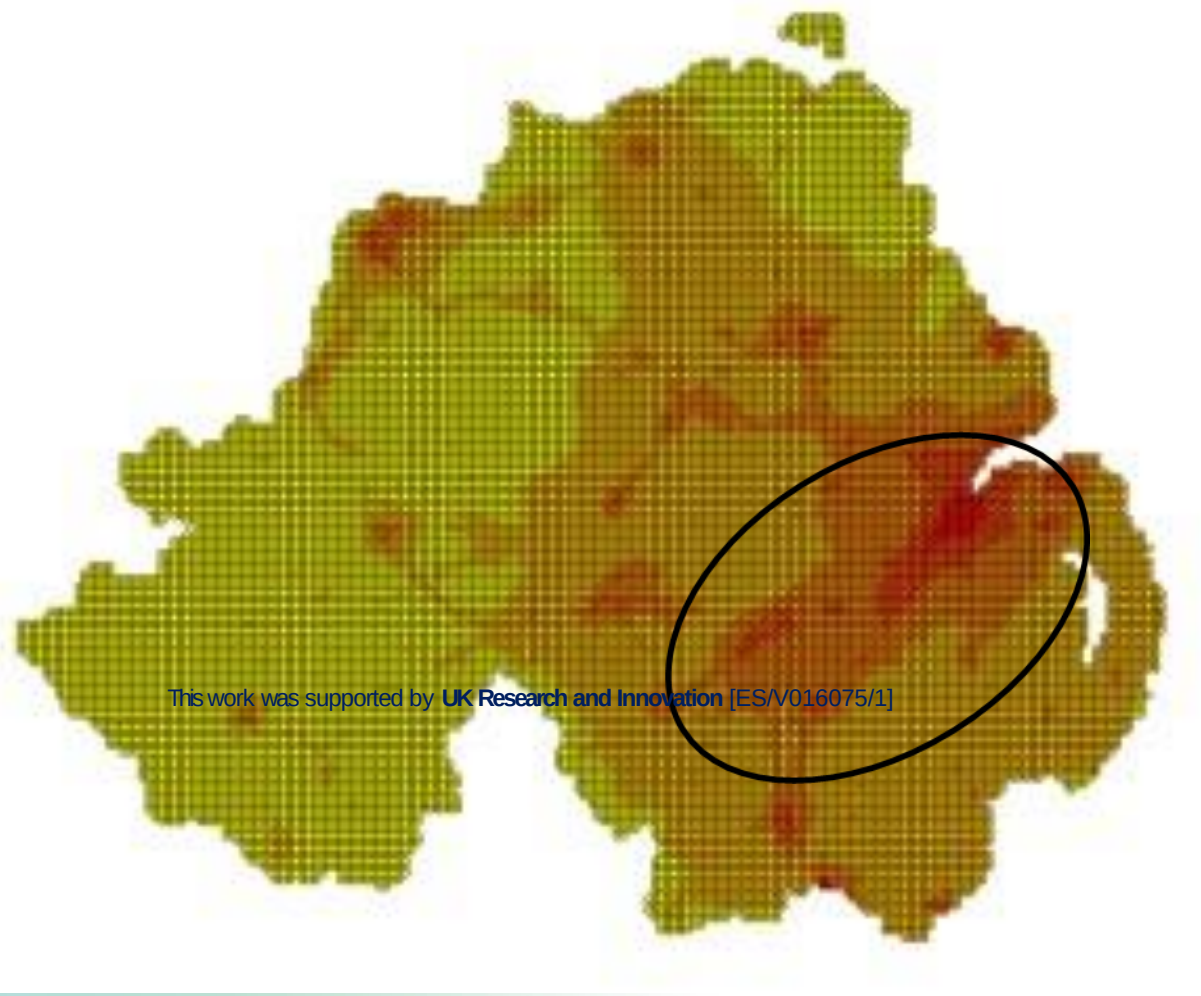


This work was supported by **UK Research and Innovation** [ES/V016075/1]

Thank you

Access the SPACE website: https://www.qub.ac.uk/sites/space/

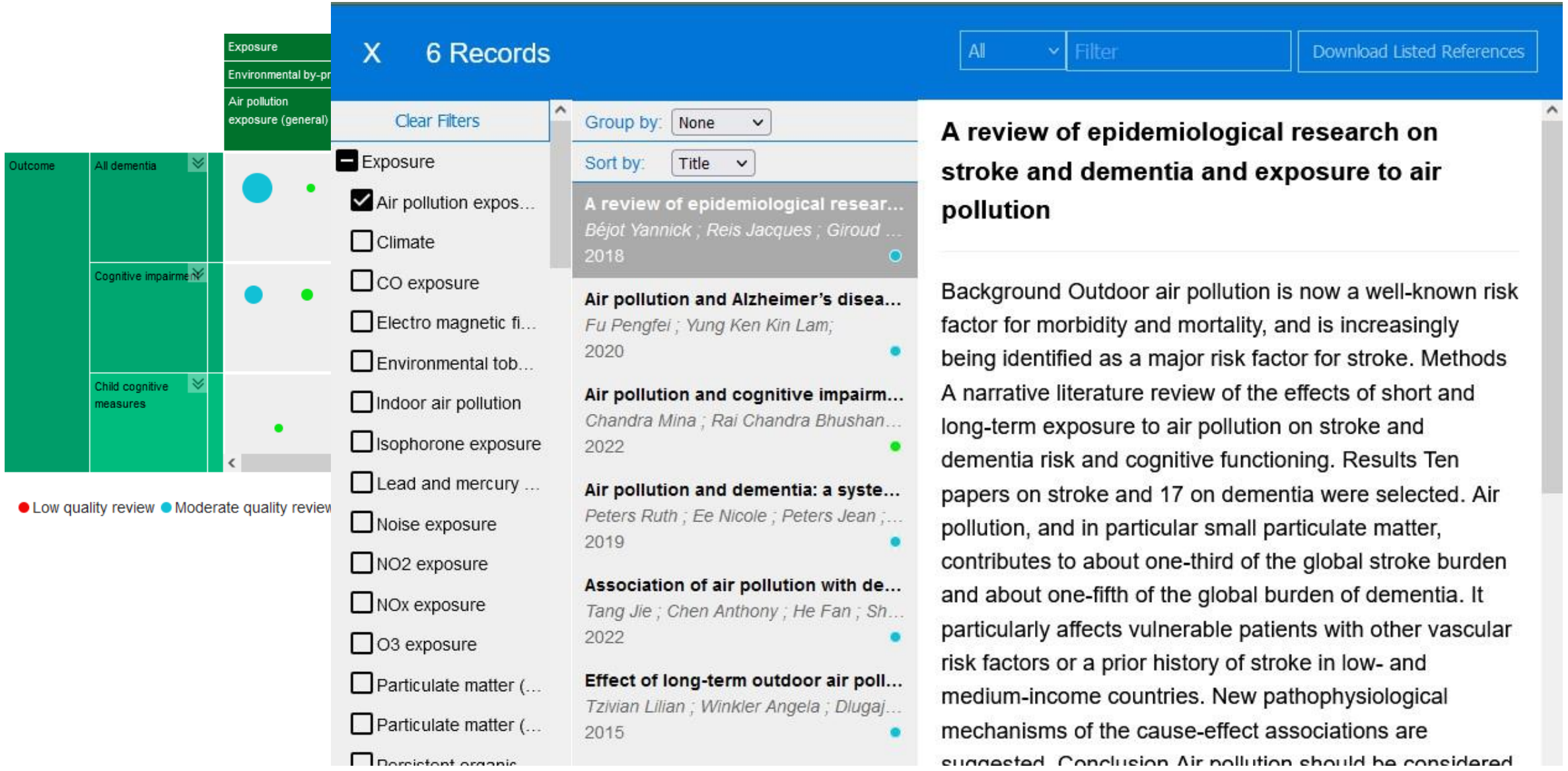
Access the SPACE geoportal: SPACE Geoportal (arcgis.com)

This work was supported by **UK Research and Innovation** [ES/V016075/1]

Economic and Social Research Council

Healthy Ageing Challenge Social, Behavioural and Design Research

SPACE Evidence gap map



SPACE policy workshops report

- In collaboration with Involve NI
- Three consecutive workshops
- **Leadership for healthy people and planet: an invitation to accelerate integrated policy and action on health and environment**
- Bring together diverse perspectives to share knowledge and experiences
- What does a shared policy agenda addressing systemic relationships between health and environment look like?

SPACE policy workshops report

REPORT

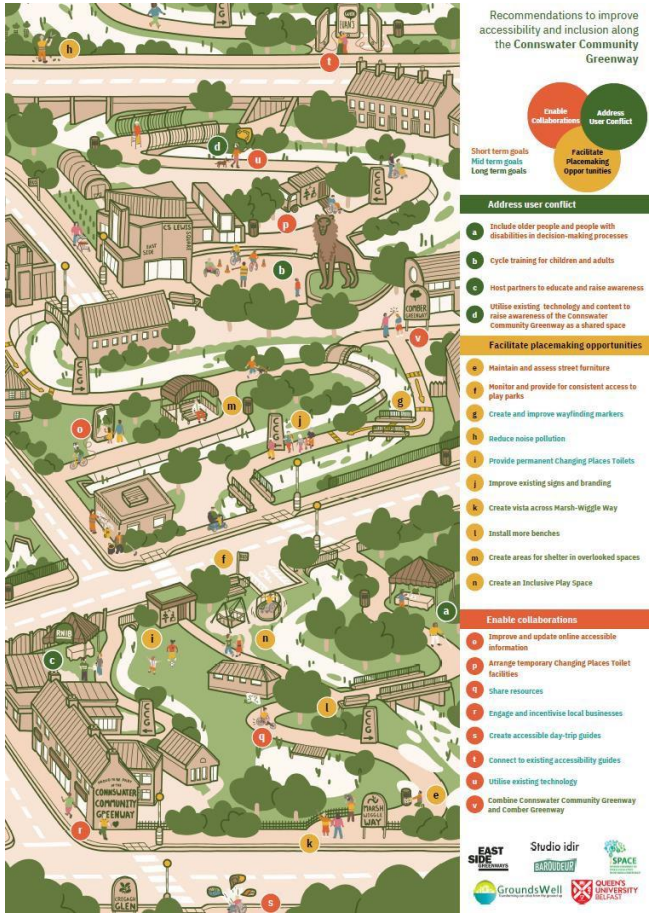
https://bit.ly/3Vk39NP

WEBINAR

https://bit.ly/3ZjFvlo

Accessibility and Inclusion on the Connswater Community Greenway (CCG)

- EastSide Greenways, Studio idir, Baroudeur Consultancy
- Stakeholder and community engagement process
- Look at CCG through lens of accessibility and inclusion
- Emphasis on engaging with older people and people with disabilities
- Recommendations that can be actioned in short/medium/long term



Accessibility and Inclusion on the Connswater Community Greenway

REPORT

https://bit.ly/3CP3UYA

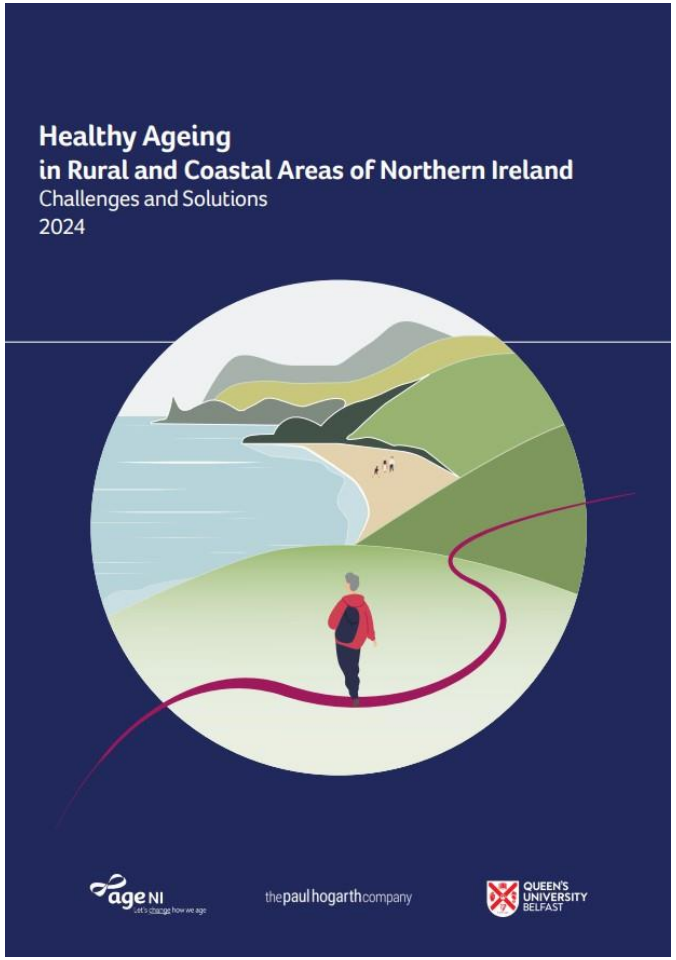
WEBINAR

Available on website soon

Healthy Ageing in Rural and Coastal Areas of Northern Ireland

- Age NI, The Paul Hogarth Company
- Understand challenges to healthy ageing in rural and coastal environments
- In response to Chief Medical Officer for England's 2023 annual report about health in an ageing society - highlighted that rural and coastal areas will see faster growing numbers of older people
- Community and stakeholder engagement
- Suggested solutions and recommendations to address challenges and barriers to ageing healthily in rural/coastal areas

Healthy Ageing in Rural and Coastal Areas of Northern Ireland



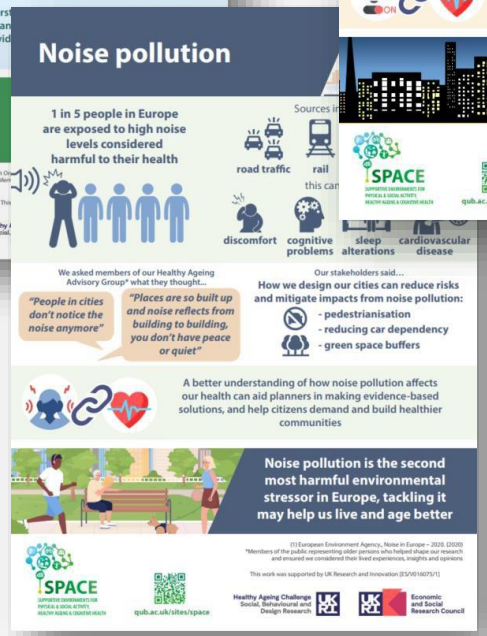
REPORT

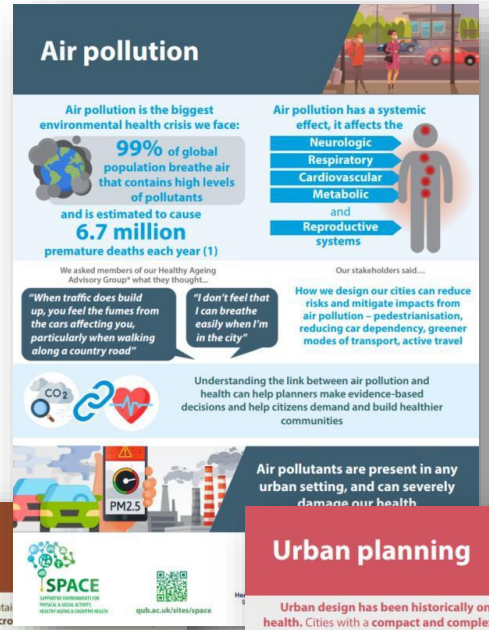
https://bit.ly/3OyeR3o

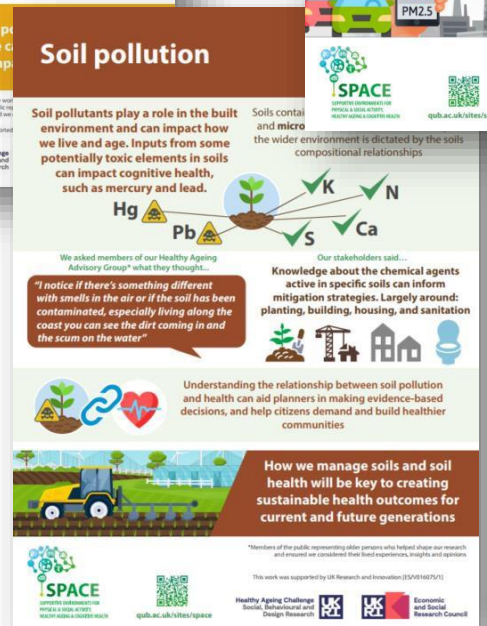
VIDEO

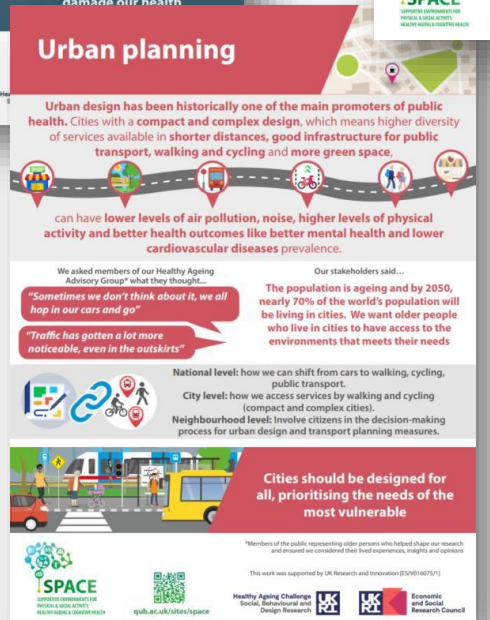
https://bit.ly/3ViTGpK

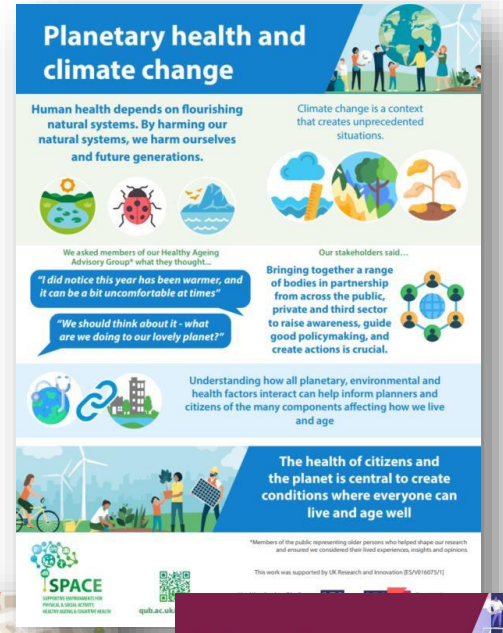
SPACE Factsheets

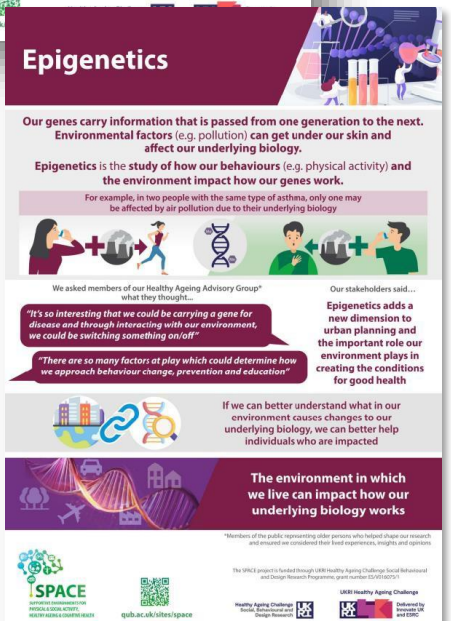












SPACE Factsheets

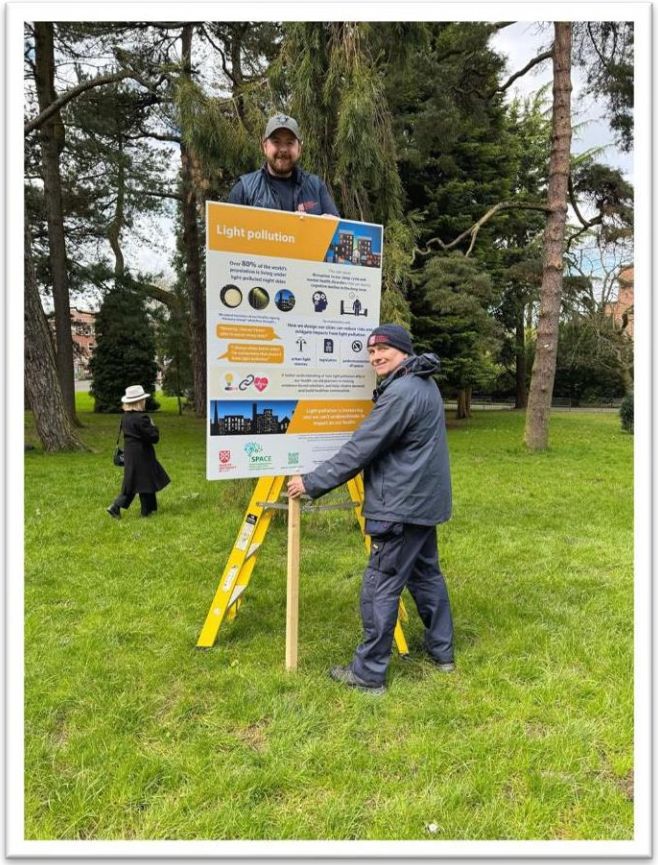
Topic overview

Input from stakeholders and Healthy Ageing Advisory Group

What next?

Take home message

https://bit.ly/4iiE6UY



SPACE Videos

Noise and Light Pollution

Noise Pollution Factsheet

Light Pollution Factsheet

Green and Blue Space

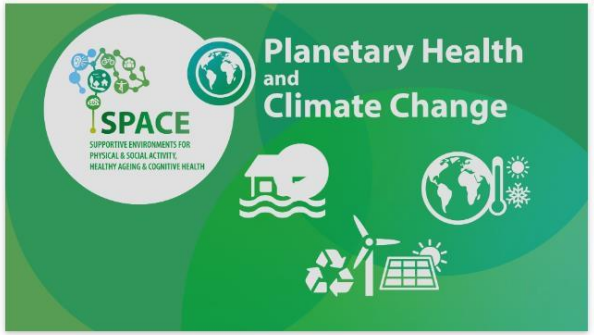
Green and Blue Space Factsheet

Urban Planning

Urban Planning Factsheet

Air and Soil Pollution

Air Pollution Factsheet



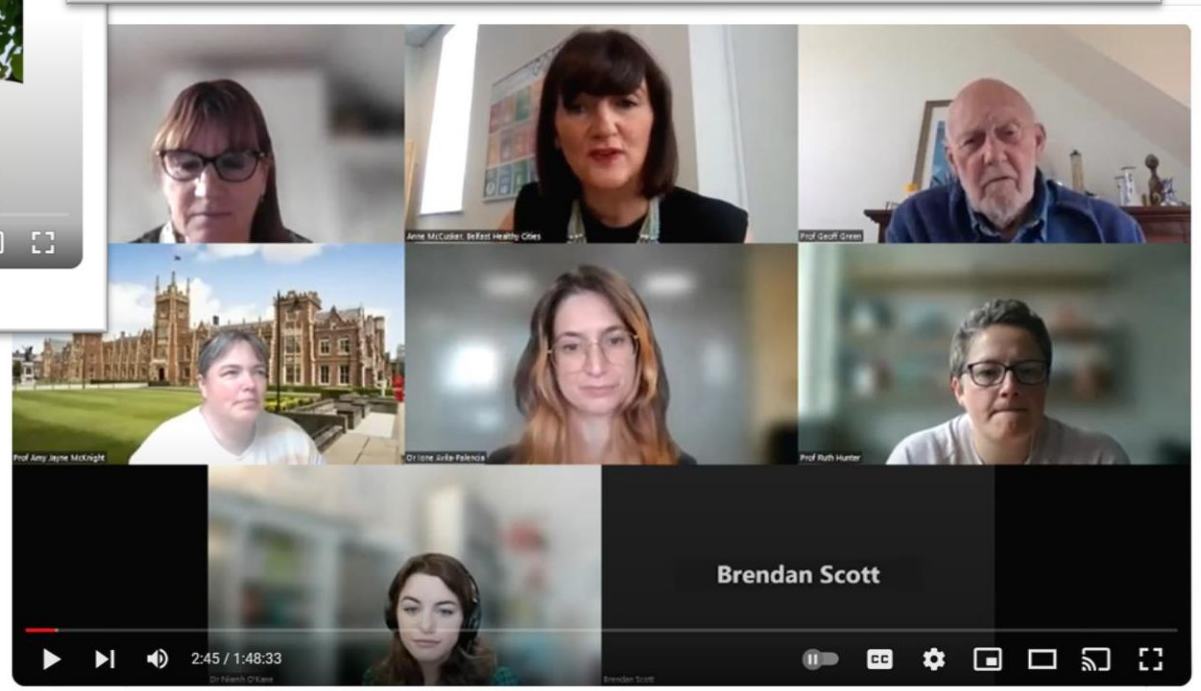
Planetary Health and Climate Change

Planetary Health and Climate Change Factsheet

https://bit.ly/4iiE6UY

SPACE Webinars

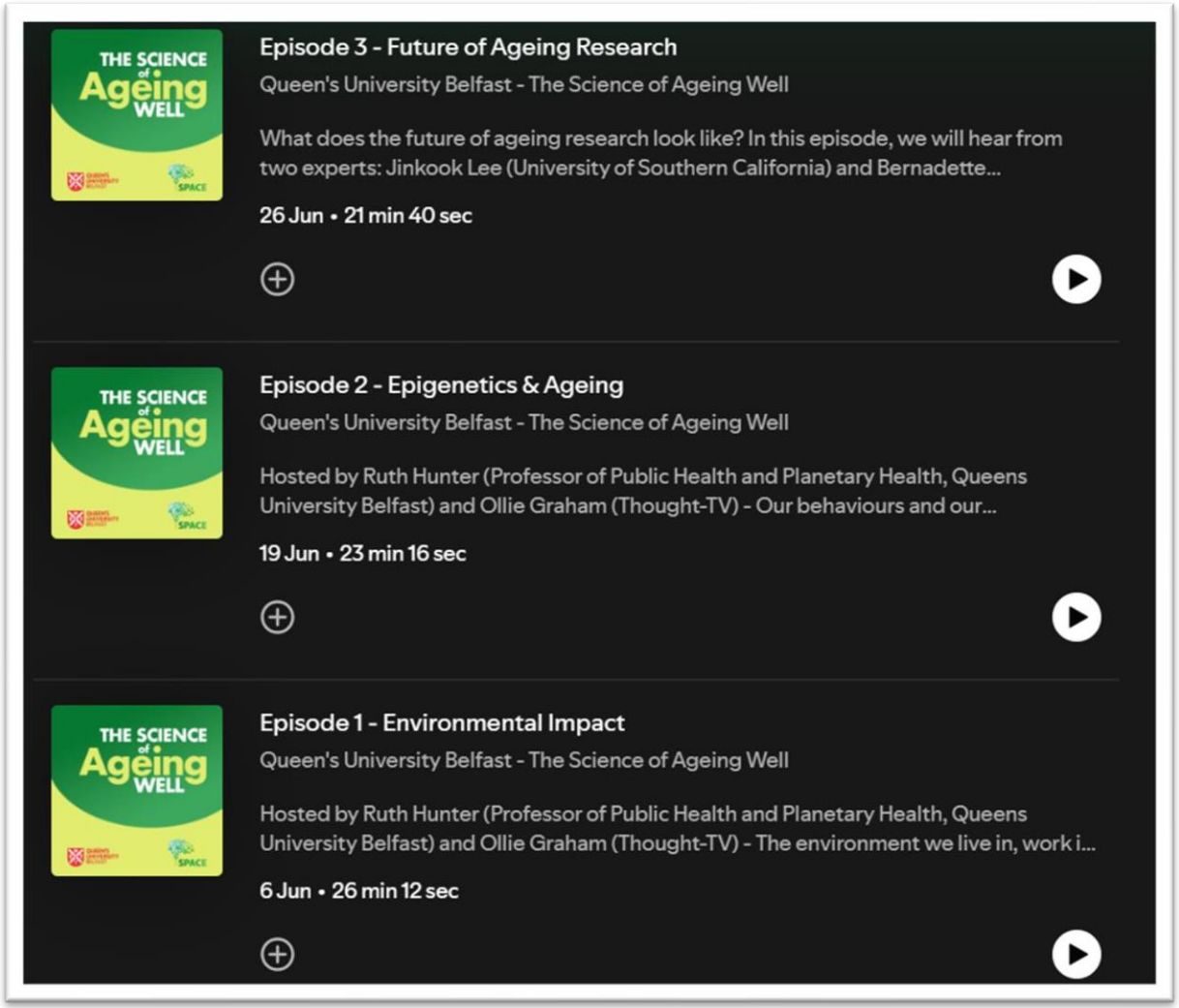
The History of Our City and its Influence on Public Health



Co-design of the urban environment for future generations

https://bit.ly/3OC3dEC

SPACE Podcasts



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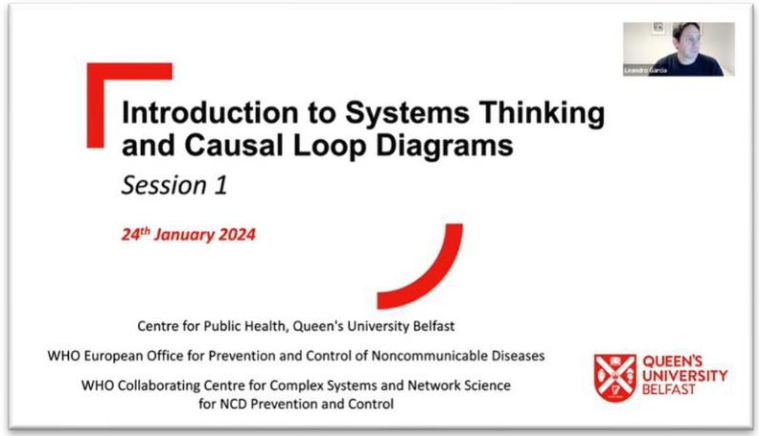
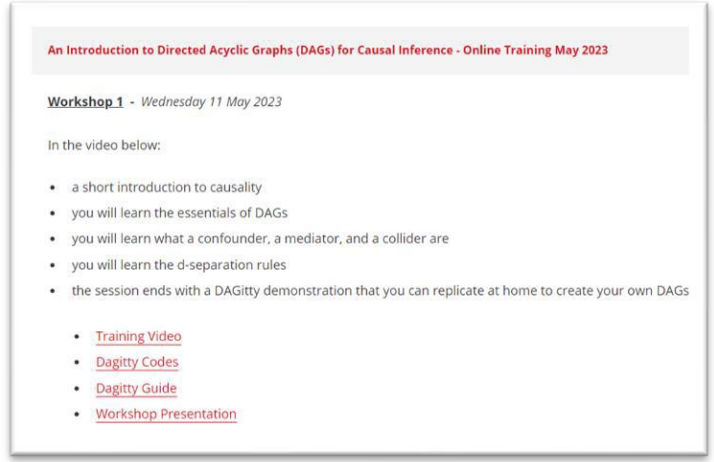




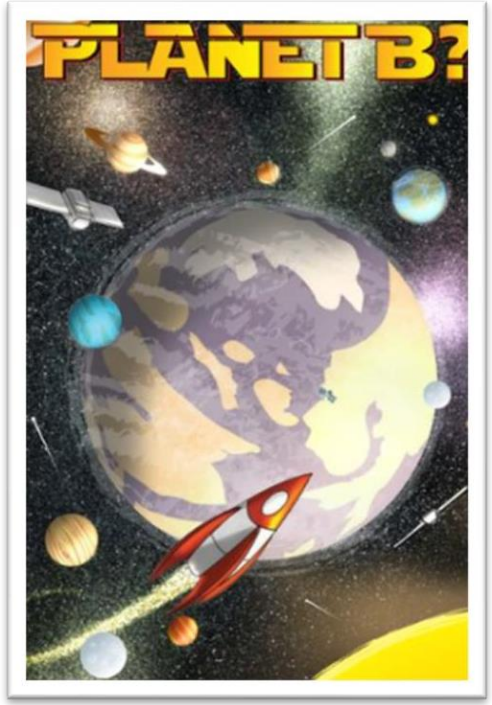
An Introduction to Directed Acyclic Graphs (DAGs) for Causal Inference - Online Training May 2023

Workshop 1 - *Wednesday 11 May 2023*

In the video below:

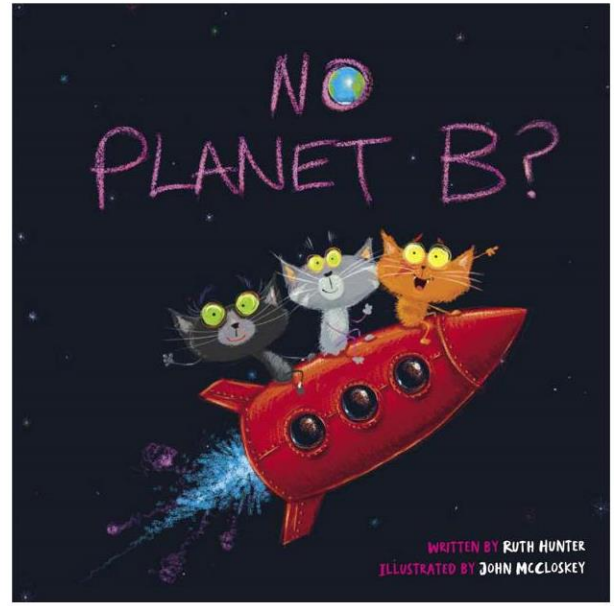
- a short introduction to causality
- you will learn the essentials of DAGs
- you will learn what a confounder, a mediator, and a collider are
- you will learn the d-separation rules
- the session ends with a DAGitty demonstration that you can replicate at home to create your own DAGs

- Training Video
- Dagitty Codes
- Dagitty Guide
- Workshop Presentation



No Planet B

Ageing in Space



Hüseyin Küçükali et al.
Investigating Syndemics of Air Pollution, Physical Inactivity and Cognitive Decline

Carys Räsänen-Young et al.
Molecular Biomarkers of Risk and Resilience in Health from Exposure to Environmental Stress: A Systematic Review

Claire Cleland et al.
Urban Environment Exposures and Cognitive Health: An Evidence Gap Map ofSystematic Reviews

Fareena Naz et al.

Claire Cleland, Hüseyin Küçükali et al.

Ione Avila-Palencia et al.
Causal Loop Diagram of the Complex Causal

Exploring the epigenome to identify biological links between the urban environment and neurodegenerative disease: an evidence review

ophie Glover, Claire Hill, Bernadette McGuinness, Amy Jayne McKnight & Ruth F. Hunter

eceived 19 Sep 2023, Accepted 24 Mar 2024, Published online: 15 Apr 2024

Cite this article https://doi.org/10.1080/23748834.2024.2335707

Original Scholarship - Evidence Review

Urban environment exposures and cognitive health: an evidence gap map of systematic reviews

Alice Trott, Claire L. Cleland, Selin Akaraci, Joanna S Valson, Niamh O'Kane, Frank Kee, Bernadette McGuinness & Ruth F. Hunter

...show less

eceived 13 Feb 2024, Accepted 18 Aug 2024, Published online: 16 Sep 2024

Cite this article https://doi.org/10.1080/23748834.2024.2395141

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SPACE
SUPPORTIVE ENVIRONMENTS FOR PHYSICAL & SOCIAL ACTIVITY, HEALTHY AGEING & COGNITIVE HEALTH

QUEEN'S UNIVERSITY BELFAST