





## The role of GBGI in levelling up in Bristol



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**Engineering and Physical Sciences Research Council** 





# AIM - to explore relationships between GBGI and a range of health and social outcomes in neighbourhoods across Bristol



## **Background**

- » Mental health, particularly for urban populations, is a growing public health concern.
- Understanding how people relate to and feel a sense of belonging in the urban environment is an important research agenda.
- There is mounting evidence about the importance of green (e.g. parks, trees) and blue (e.g. rivers, lakes) infrastructure for the health and wellbeing of urban residents.
- » There is also emerging evidence about the benefits of certain 'grey' features (e.g. historic buildings, active travel routes).

## **Objectives**

- » Collate health and wellbeing data from the Bristol Quality of Life Survey for 2011-2022 (3000-5000 responses per year)
- » Select outcome measures from ~190 indicators of QoL and wellbeing of residents
- » Collate spatial GBGI data from openly available sources e.g. OS, Bristol Open Data, Census, Natural England
- » Identify the most useful indicators of exposure to GBGI e.g. the number of trees within a 10-minute walk of a postcode, distance to the nearest bus stop, river or green space
- » Use GIS and regression modelling to link GBGI exposure to measures of QoL and wellbeing e.g. self-reported health, social interaction and neighbourhood satisfaction



## Model



#### Green infrastructure

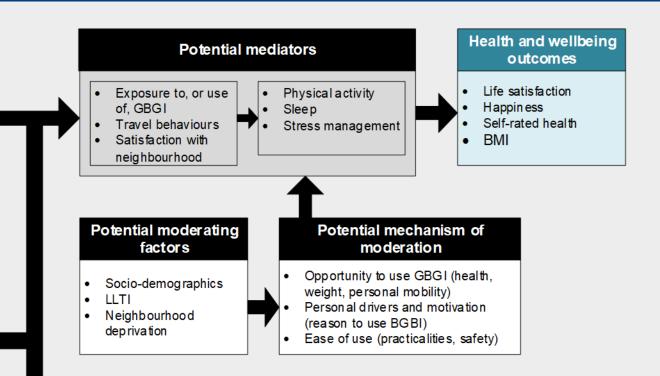
- Presence and density of urban trees
- Vegetation (NDVI)
- Proximity to nearest greenspace
- Proximity to nearest protected habitat
- Type and size of nearest green space
- Proximity to woodlands
- Proximity to outdoor sports facilities
- Size and density of private gardens

#### Grey infrastructure

- Density of listed buildings/monuments
- Access to leisure facilities
- Access to cycling infrastructure
- Access to public transport
- Traffic conditions and speed
- Housing/population density
- · Access to culturally important buildings
- · Access to social infrastructure
- Density of street lights and furniture
- Street connectivity

#### Blue infrastructure

- Proximity to nearest blue space
- Water (NDWI)
- Water quality and discharge
- · Waterbody designations



## Results





<sup>\*</sup> Satisfaction with green space, buses, leisure facilities, neighbourhood (noise, litter, air quality)

## Conclusions



- » In this project we investigate the relationship between GBGI and self-reported life satisfaction and wellbeing over a long time period at high-resolution in Bristol.
- » Multiple GBGI factors were explored, including detailed mapping of GBGI exposure and reported satisfaction with and frequency of use of GBGI.
- » No significant relationships have been found between GBGI exposure and self-reported life satisfaction and wellbeing.
- » However, significant associations found between GBGI satisfaction and frequency of use and selfreported life satisfaction and wellbeing.
- » GBGI satisfaction and frequency of use is somewhat linked to GBGI exposure.
- » Suggests enhancing GBGI exposure in itself is not likely to directly lead to improvements in LS and wellbeing.
- » However, improving the quality of and peoples experience of GBGI and their local environment (as well as exposure) is potentially important in enhancing life satisfaction and wellbeing.