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This is an author produced version of a paper published in:  
*International Journal of Population Data Science*

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### Conference contribution :

Song, J., Fry, R., Mizen, A., Akbari, A., Wheeler, B., White, J., White, M. & Lovell, R. (2018). *Association between blue and green space availability with mental health and wellbeing*. International Journal of Population Data Science, Banff, Canada: IPDLN 2018 conference.

<http://dx.doi.org/10.23889/ijpds.v3i4.921>

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## Association between blue and green space availability with mental health and wellbeing

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### Introduction

Green-blue spaces (GBS), such as parks, woodlands, and beaches, may be beneficial for population mental health and wellbeing. However, there are few longitudinal studies on the association between GBS and mental health and wellbeing, and few that incorporate network analysis as opposed to simple Euclidian proximity.

### Objectives and Approach

We are examining the association between the availability of GBS with wellbeing and common mental health disorders. We will use geographic information systems (GIS) to create quarterly household level GBS availability data using digital map and satellite data (2008-2018) for over 1 million homes in Wales, United Kingdom. We will link GBS availability to individual level mental health (1.7 million people with General Practitioner (GP) data) and data from the National Survey for Wales (n = 24,000) on wellbeing (Warwick Edinburgh Mental Wellbeing Scale (WEMWBS)) using the Secure Anonymised Information Linkage (SAIL) databank.

### Results

We created an historic dataset of GBS availability using road network and path data to create quarterly household level GBS exposures (2008-2018). We tested Residential Anonymised Linking Fields (RALFs) and accurately linked 97% of individuals and their health data to their home and GBS exposure. The 1.65 million exposure-health data pairs, updated quarterly, will enable a longitudinal panel study to be built. Using GP recorded data on treatments, diagnoses, symptoms and prescriptions for mental health problems we identified 35,000

people had a common mental health disorder in 2016, and 24,000 people answered the National Survey for Wales questions about their wellbeing and use of GBS. We will explore how house moves, and visits to GBS change the association between GBS availability and outcomes.

### Conclusion/Implications

This study fills the gap in the evidence base around environmental planning policy to shape living environments to benefit health. It will inform the planning and management of GBS in urban and rural environments and contribute to international work on impacts of the built environment on mental health and wellbeing.

