Project title: Monitoring the Impact of Green Infrastructure using Citizen Science in Urban and Rural Catchments

Project ID *(optional)*:

Accept all year-round applications

Funding information: Self-funded students only

Project description: Urban and rural environments face a range of pressures and impacts as a result of extreme weather events, including flooding, which are projected to increase in frequency and severity with climate change. Green infrastructure (GI) measures, such as sustainable drainage systems (SuDS) and natural flood management (NFM), are being used across the UK and internationally as a result. Although GI techniques have the potential to offer multiple benefits, the evidence-base is still inadequate as interactions are complex, preventing widespread uptake [1].

Citizen Science (CS) has enabled the general public to work alongside scientists and researchers to co-produce new knowledge across a range of environmental disciplines. This participatory approach has been implemented in the water management sector, and policy frameworks welcome the involvement of communities [2,3]. However robust monitoring methods are yet to be developed.

This cross-disciplinary project aims to *co-develop, test and evaluate a GI orientated CS monitoring toolkit* which uses a range of cost-effective and innovative techniques. Working in various community settings for comparison, the monitoring programme will provide evidence associated with the value of CS (as a monitoring technique) and report on the effectiveness and maintenance of various GI measures investigated. The candidate will work alongside the National Green Infrastructure Facility (NGIF), and in collaboration with Tyne Rivers Trust and urban and rural community groups across the NE of England. A variety of desk-based, stakeholder engagement and hydrometric fieldwork techniques are envisaged, will expand on previous projects such as the Haltwhistle Burn and My Tyne, and will have access to NGIF’s laboratory. This PhD will specifically develop fieldwork, engagement, participatory, citizen science, water management and data visualisation skills which are crucial in today’s water and climate change sector.

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References (optional):

1 Walsh et al. (2015) Putting green infrastructure to the test for urban catchments; 2 Buytaert et al. (2014) https://doi.org/10.3389/feart.2014.00026; 3 Starkey et al. (2017) https://doi.org/10.1016/j.jhydrol.2017.03.019

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[www.ncl.ac.uk/engineering/staff/profile/clairewalsh.html](http://www.ncl.ac.uk/engineering/staff/profile/clairewalsh.html)

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design

drama

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music

music technology

photography

theatre studies

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microeconomics

political economics

other

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higher education

nursery education

primary education

secondary education

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civil engineering

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control systems

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dynamics

electrical engineering

electronic engineering

energy technologies

environmental engineering

fluid mechanics

gas engineering

geotechnical engineering

integrated engineering

manufacturing engineering

marine engineering

mechanical engineering

mechanics

mechatronics

nanotechnology

offshore engineering

petroleum engineering

robotics

solid mechanics

structural engineering

structural mechanics

systems engineering

thermodynamics

other

Environmental Sciences

climate science

hydrology

marine sciences

meteorology

pollution

soil science

other

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actuarial science

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investment

taxation

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food hygiene

food production

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forensic science

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social geography

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urban geography

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volcanology

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audiology

biomechanics

cardiology

complementary medicine

dentistry

endocrinology

epidemiology

neural engineering

neurology

nutrition

ophthalmology

optometry

pathology

pharmacology

pharmacy

physiology

physiotherapy

podiatry

radiology

speech science

tissue engineering

toxicology

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mental health nursing

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quantum mechanics

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politics

public policy

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counselling psychology

developmental psychology

educational psychology

forensic psychology

health psychology

neuropsychology

occupational psychology

organisational psychology

psychotherapy

sport psychology

other

Sociology

criminology

disability studies

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socio economics

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