

Using social media to collect flood data and expand the citizen science toolbox

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 @StarkeyEle | @NGIF_UK | @HaltwhistleBurn



Researcher in Hydrology:

- Hydrometric monitoring
- Flood risk management
- Nature-based methods
- Community-based
- Citizen science monitoring









Slaty Sike natural flood management scheme



Newcastle Helix sustainable drainage scheme

Crowd sourcing flood information

- Example: 'Toon Flood' June 2012 (Newcastle upon Tyne)

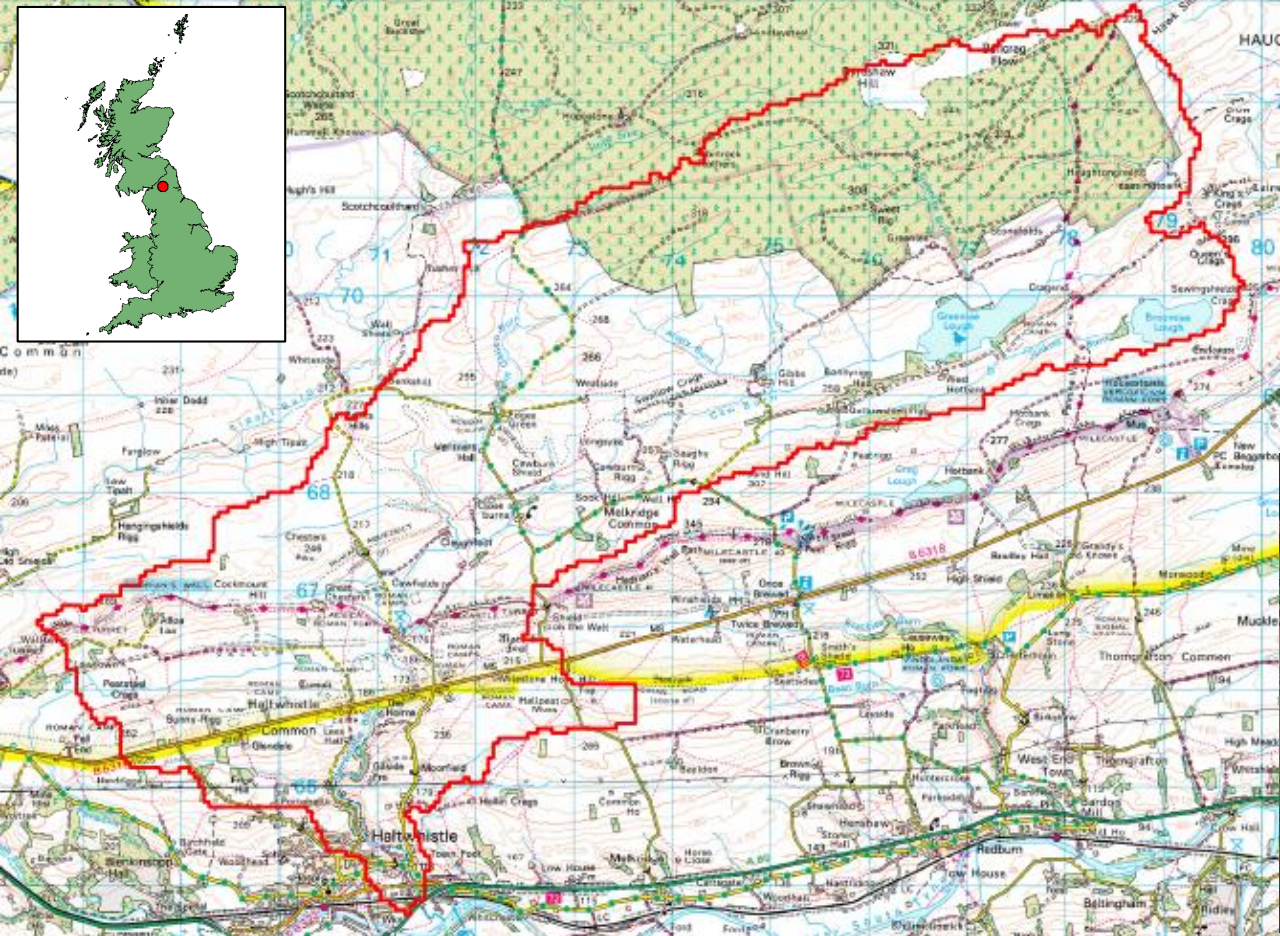
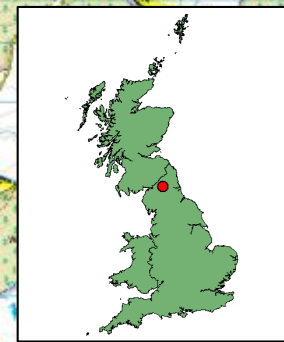
“Gather as much information as possible from photos, eye witness reports and measurements to help them to understand the extent of the flooding around the region, its impacts and how to improve the resilience of the city and its infrastructure to similar events in future.”

Newcastle University.

- Smith et al (2015):



ChronicleLive



Citizen science for catchment science: A rural case study from Northumberland

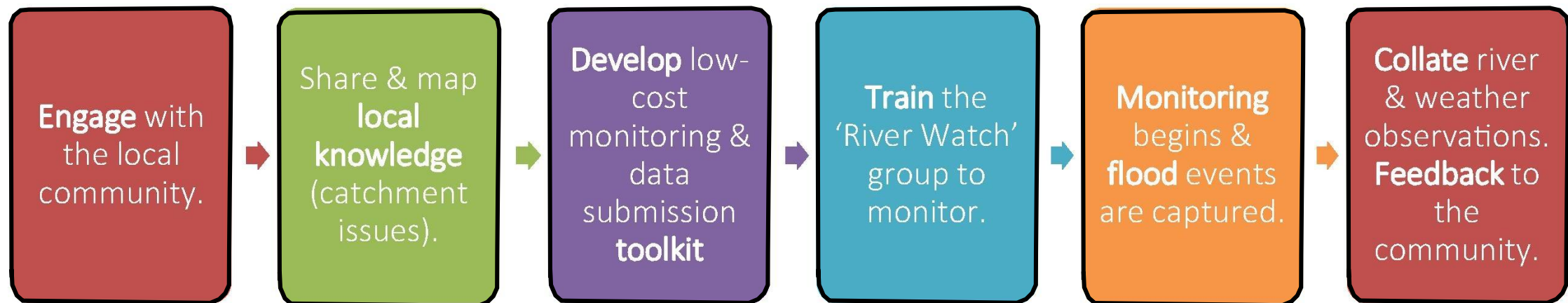
Haltwhistle Burn catchment, Northumberland, UK

<https://research.ncl.ac.uk/haltwhistleburn/>



Haltwhistle Burn

- Multiple stages where social media helped to support the wider monitoring programme
- Environmental data collection is (or should be) much broader than just physically collecting or extracting the data.





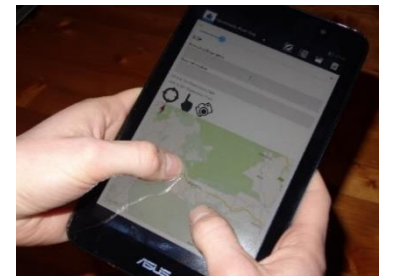
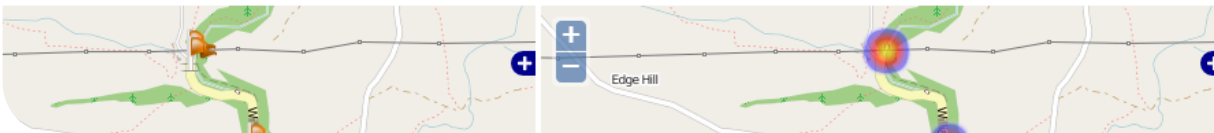
Project Background About the Catchment **COMMUNITY HUB** Volunteer Gallery News & Events Further

Haltwhistle Burn Community Mapping

Trust

Double click to zoom in, click red squares to get information at location

1 sourced flood data from smartphones and tablets.



Haltwhistle Burn river watch

Haltwhistle Burn

- Methods: Data collection

Broomshaw



Townfoot

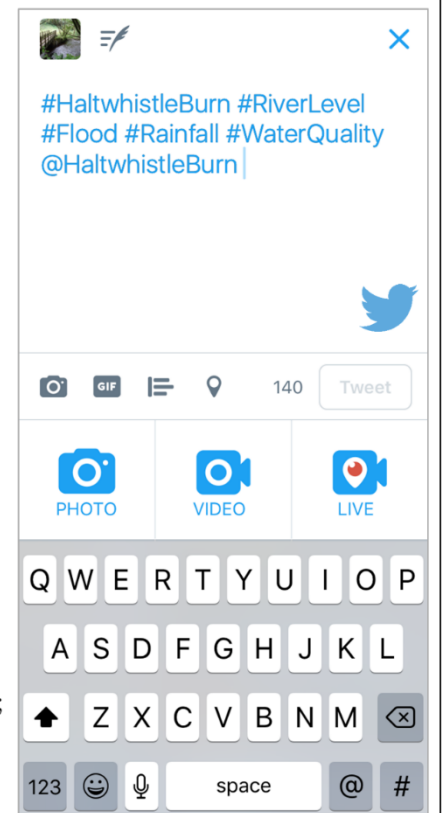


Mill Bridge



Twitter

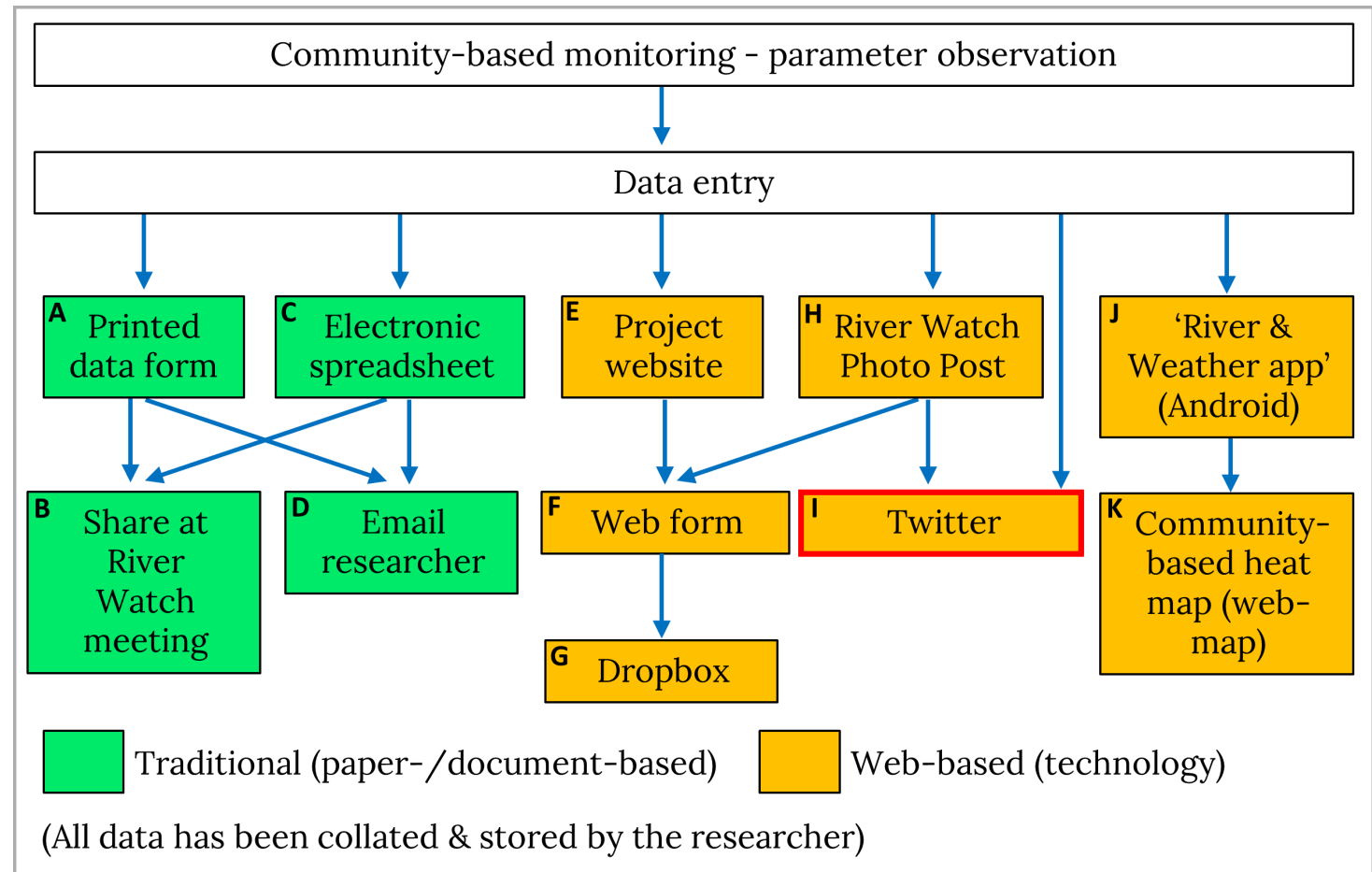
- Free tool available to use on desktop computers, smartphones and tablets;
- Easy to download from app stores and update over time;
- User can post a short message online ('tweets' are 140 characters or less);
- Message can be accompanied by photographs, hyperlinks, locational information (geo-referenced) and tag other users to alert them;
- Video and live streams now possible;
- Hashtags (see # examples) allow key words or phrases to be identified easily;
- Free data storage and hosting;



- Wider community engagement anticipated;
- Time stamp is automatic.

Haltwhistle Burn

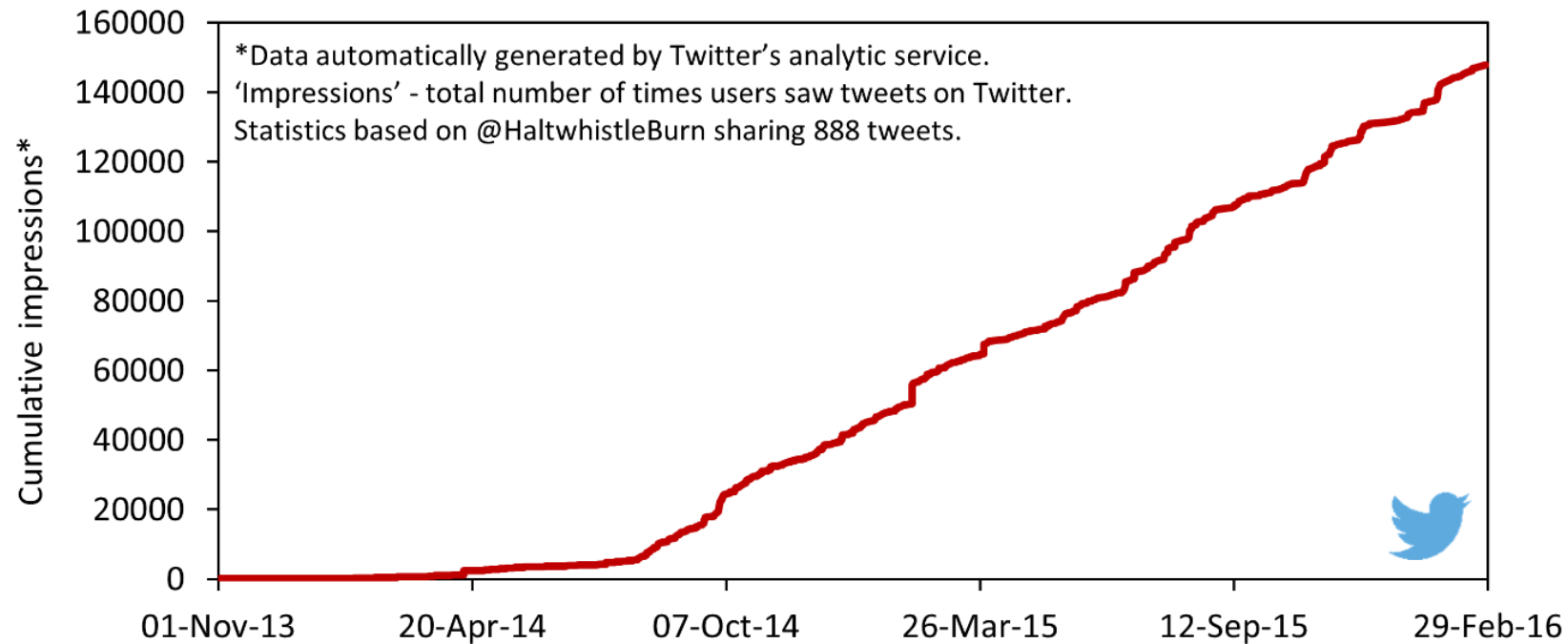
- Methods: data entry and submission



Starkey, 2018

Haltwhistle Burn

- Outputs: Engagement during the project



Starkey, 2018

Haltwhistle Burn

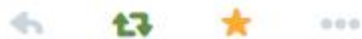
- Outputs: Data collection

Some heavy rain nearby. #Haltwhistle looks to be getting a hammering. Just a few spits here #brampton @HaltwhistleBurn .

@HaltwhistleBurn #haltwhistleburn #riverlevel Townfoot 23/12/14 8.47 Both photos taken in the same second! Fast flow!



9:34 am - 23 Dec 2014 - Details



Collapse

@HaltwhistleBurn



Expand

Starkey, 2018

Haltwhistle Burn

- Outputs: river level
time series

Haltwhistle Burn

- Outputs: data
submission preferences

Haltwhistle Burn

- Outputs: wider benefits associated with involvement.
- Wider outcomes: New skills, knowledge, understanding, behaviour, progression, attitudes, values, enjoyment and inspiration

“We are 78 and we enjoy learning new technology”

“I’ve enjoyed it”

“Looking forward to taking some rainy day photos 😊 ”

“Great collection – I’m getting into this science stuff ”

“I’ve read in a couple of places that Twitter hashtags are not case sensitive so I’ve stopped using capital letters in them”

“Would it help if I showed people how to do the tweeting biz...?”

Starkey, 2018

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Citizen science – help monitor the swale!

Swales are characterised by shallow, open and vegetated ditches which can offer multiple environmental and social benefits within the urban environment, including reduced flood risk.



Help build up a picture of how the swale behaves and changes over time. Here's what to do:

1. Align your feet with either the red or blue footprints on the pavement.
2. Take a photograph of the wetland (👤) and experiment areas (👤) during different weather conditions. **Please stay on the footpath and stay safe.**
3. Share your data with researchers and the local community. Either

Tweet your observations to @NGIF_UK (#Swale)

OR

Upload your observations using the webform QR code.

Ensure your observations include a date and time.




green.infrastructure@ncLac.uk

@NGIF_UK

#NGIF #GreenInfrastructure #Swale

National Green Infrastructure Facility, Newcastle University.
Citizen science in an urban space. (Photo: E. Starkey)

Citizen science during COVID-19

Date of your observation(s)	28 Aug 2020
Time of your observation(s)	08:45
Upload your swale observation(s)	
Notes - to describe your observation(s) and the weather conditions	Very rainy, had been most of the night



National Green Infrastructure Facility
@NGIF_UK

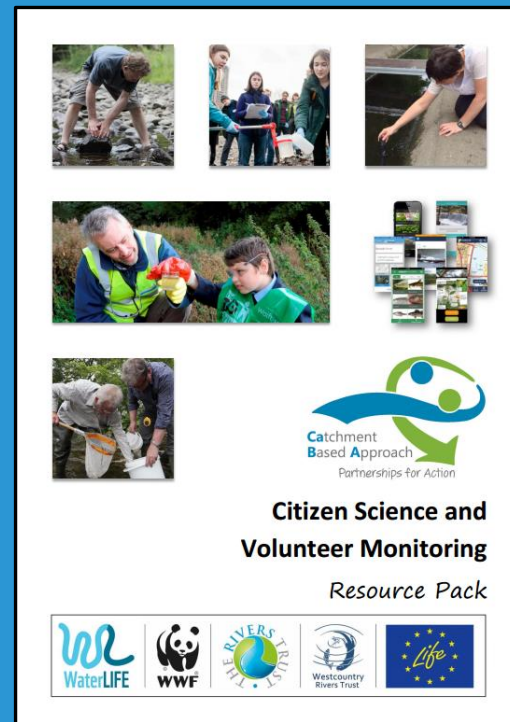
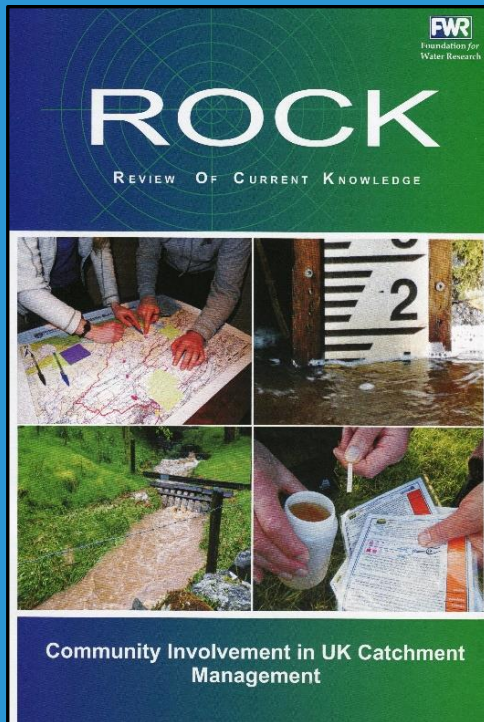
▼

Our [#NGIF](#) [#Swale](#) holding back water in [#Newcastle](#) to help reduce [#FloodRisk](#) in the city.

Photos via [#CitizenScience](#) photo post this morning.
[#SuDS](#) [#NBS](#) [#GreenInfrastructure](#)

🐶 🐕 ☁️ 🌳



PhD opportunity

PhD opportunity via NERC-funded ONE Planet scheme

- “Monitoring the Impact of Green Infrastructure using Citizen Science in Urban and Rural Catchments”
- Project: <https://bit.ly/3loIVOP>
- How to apply: <https://bit.ly/32CoPtb>
- Deadline: 18th January 2021
- Lead organisation: Newcastle University with external partners.
- Start date: September 2021

