Community-led monitoring to improve water quality

UpStream

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MOST 科技部 Ministry of Science and Technology

UKRI — Economic and Social Research Council

Bradford Beck Catchment, West Yorkshire – UK Pilot

Pollution hot-spots & monitoring sites of interest

Eldwick · Bingley · Shipley · Four Lane Ends · Bradford · Thornbury · West Bowling · Wibsey · Low Moor · Cleckheaton · West Yorks

Catchment boundary
River & culvert network

Earthstar Geographics | Esri UK, Esri, HERE, Garmin, METI/NASA, USGS

🐟 Water pollution – UK context

There is widespread dissatisfaction around waterbody pollution as most rivers exceed legal limits set out by the water regulators. Raw sewage, which is repeatedly released into our watercourses, along with agricultural runoff, are believed to be the primary culprits. Concerns have been raised by the UK public, whom would like to see cleaner and safer water environments for all.

"Our rivers are in crisis", River Action UK, 2021

🐟 Bradford Beck catchment – UpStream's UK pilot

Bradford Beck (tributary of the River Aire) and its tributaries, suffer from poor water quality and discolouration, particularly at low flows. Blocked or incorrectly connected sewers, plastic bags, household and industrial litter, fat bergs and sediment have been highlighted as a major problem. Many streams are also culverted and inaccessible beneath the city, making it difficult to pin-point pollution sources or recognise who is responsible.

"Once known as England's filthiest river" (The Guardian, 2021)

🐟 Community involvement - Friends of Bradford's Becks (FoBB)

FoBB volunteer citizens have campaigned to raise awareness and undertaken a range of initiatives to improve water quality in the Bradford Beck catchment, including litter picks, collecting water samples for analysis, and reporting photographic evidence of pollution via an online data app. The local group would like to see watercourses restored and believe this can be achieved through effective community-led water quality monitoring which triggers timely action from relevant organisations.

"Our ultimate goal is to make our becks 'better' & 'accessible'. Short term we would like to pin-point pollution sources" FoBB, 2021

Opportunities to get involved with UpStream and the Bradford Beck catchment pilot

- Attend workshops or site walkovers to learn about UpStream and the river.
- Share your local knowledge and water quality concerns with the project team.
- Help install and maintain water quality sensors to generate live data about the state of the river.
- Volunteer to monitor data collected, spot pollution spikes and alert the wider community.

Email Amy Jones (amy.Jones@rpsgroup.com) and Eleanor Starkey (eleanor.starkey1@ncl.ac.uk) to find out more or register your interest.

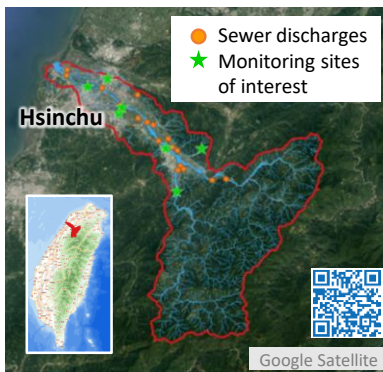# Community-led monitoring to improve water quality

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Taiwan pilot: The Touqian River

🐬 Water pollution – Taiwan context

Taiwan's rapid industrialisation and economic growth has impacted water pollution. In 2016, 65% of Taiwanese rivers were classified as moderately polluted and the remaining 35% as lightly polluted. As economic growth stabilises, attention is shifting to water quality issues and river restoration.

🐬 The Touqian River – UpStream's Taiwan pilot

- Sewer discharges
- Monitoring sites of interest

Hsinchu

Google Satellite

The Touqian River originates in the mountains of Hsinchu County and flows into Hsinchu city before discharging into the ocean. It is the main water source for Hsinchu City - the heart of Taiwan's semi-conductor industry. The river suffers from poor water quality with unpermitted landfill leachate and unmonitored and unpermitted industrial and domestic discharges having been highlighted as major problems.

"No one would feel the water [from the Touqian River] is safe to drink"
(CommonWealth Magazine, 2020)

🐬 Community involvement – Working alongside the Taiwan Clean Water Alliance (TCWA)

Source: CommonWealth Magazine

TCWA is a non-government organisation advocating for clean water supply and sustainable use of water resources in the greater Hsinchu area. Founded in 2016 by a group of local mothers, the TCWA has brought water usage and pollution issues in the Touqian river to the attention of the authorities. Other TCWA activities include river walks, collection of water samples for analysis, development of educational kits for schools and training courses for other water patrols.

We believe that effective community-led water quality monitoring can help better understand quality issues and identify pollution sources in the Touqian River, triggering action from relevant organisations.

Opportunities to get involved with UpStream and the Touqian River pilot

- Attend workshops or site walkovers to learn about UpStream and the river.
- Share your local knowledge and water quality concerns with the project team.
- Help install and maintain water quality sensors to generate live data about the state of the river.
- Volunteer to monitor data collected, spot pollution spikes and alert the wider community.

Email Li-Pen Wang (lpwang@ntu.edu.tw) to find out more or register your interest.

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