Online Ponds in Riseholme, United Kingdom

Year of issue

2026

Summary

Sponge Scapes case study UK05

Is the Riseholme site effective as a form of flood risk management using sponge measure?

Riseholme is a part of the catchment of the River Witham. The case study concerns the presence of 7 ponds, several different side channels, leaky barriers, in-channel and floodplain vegetation and their role in reducing flood peak and in allowing infiltration.

Photo Gallery



Location

53.1542, 0.3133

Project

SpongeScapes

Sector

Hydromorphology

Overview

Location of the project

Riseholme case study is located in the Anglian River Basin District (RBD), in the east of England. It is part of the catchment of the River Witham, which covers an area of approximately 3,000 km2 and a population of around 375,000 people. The catchment is predominantly rural and there is high grade agricultural land in the Fens. The catchment has a history of flooding. The site is an example of the unique chalk streams. It is part of the Riseholme College Campus which is part of the University of Lincoln.

Sponge measures implemented in the case study

Ponds and scrapes

Objectives

Our objective is to better understand how the ponds allow for infiltration and reduce flood peaks making the site effective at managing flooding downstream. There is also an interest in how management (e.g., vegetation trimming) might affect sponge functions.

Involved partners

Comments
Stakeholders include the Environment Agency (case owner), education and research institutes (University of Lincoln, UKCEH), local Communities (Riseholme), Private sector (landowners, farmers) and inhabitants.

Site Information

Climate Zone

Cool temperate moist

Design and Implementation

Project scale

Micro

Project area

400

Project area specifications

The Riseholme site in particular is situated on a Jurassic limestone aquifer. This aquifer within Lincolnshire is quite shallow. Notably high groundwaters tend to be seasonally driven.

Policy and Governance

Part of a wider plan

Yes

Public consultation

No

Has contractual arrangements

No

Impacts and Monitoring

Monitoring System

Monitoring parameters

Available data include monitoring precipitation, water levels and flows in and out of online ponds since 2018, where the case owner is the UK Environment Agency. Calibrated hydraulic and geomorphic models are available. A combination of low-cost and high-tech monitoring efforts and the 2023 change of online pond vegetation management will allow before/after comparison of Sponge function (and co-benefits).

Impact Assessment Methodology

Performance impact estimation information

Available data include monitoring precipitation, water levels and flows in and out of online ponds since 2018, where the case owner is the UK Environment Agency. Calibrated hydraulic and geomorphic models are available. A combination of low-cost and high-tech monitoring efforts and the 2023 change of online pond vegetation management will allow before/after comparison of Sponge function (and co-benefits).