

Understanding and communicating impacts of water resource infrastructure removal

Stream

The Industrial Doctorate Centre for the Water Sector

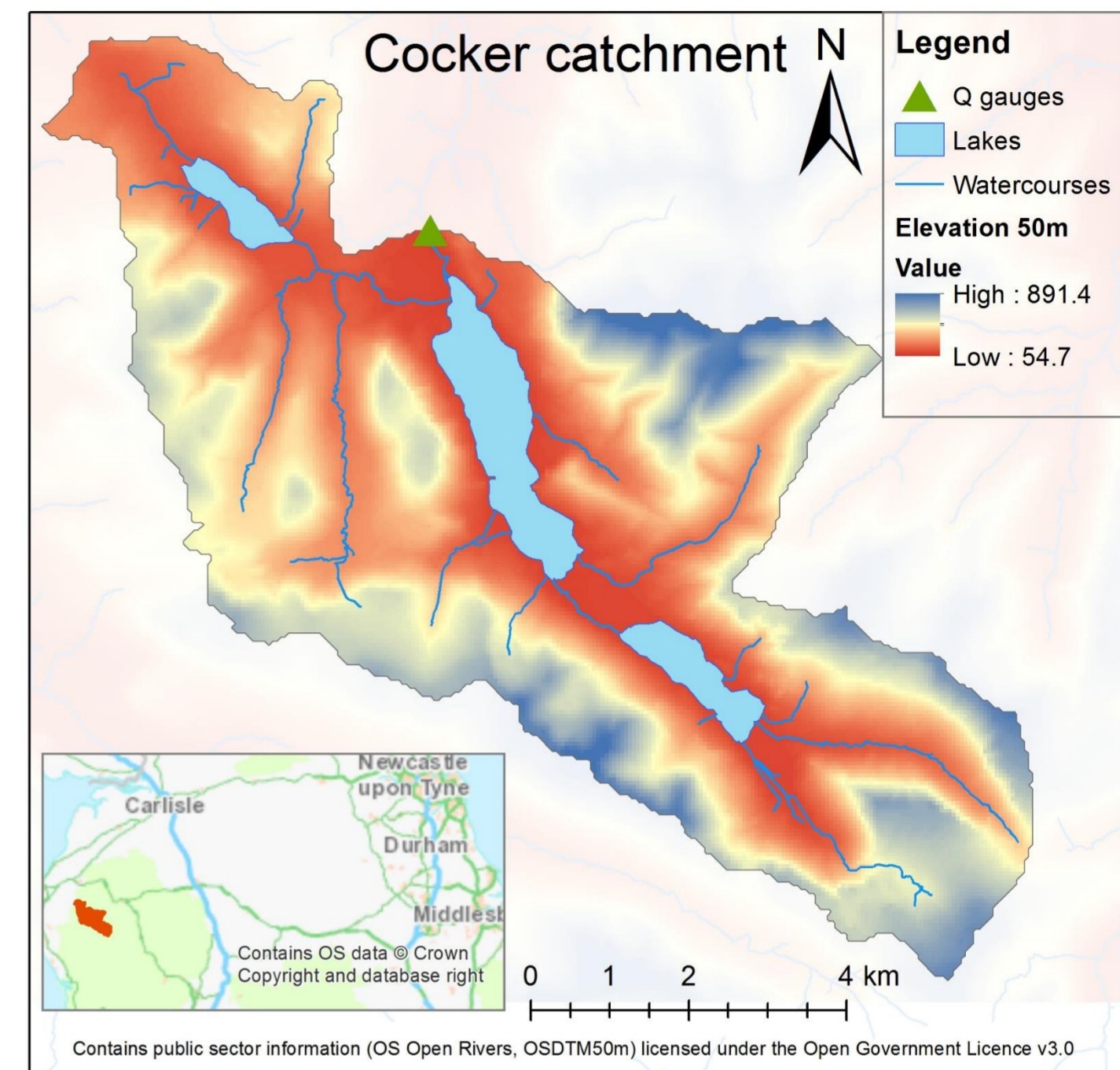
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Background

Crummock Water is an iconic water body in the English Lake District. A weir was constructed at its outflow in the 1870s to raise the lake level and supply drinking water. However, abstraction will cease in 2022, so United Utilities is investigating the feasibility of removing the weir. Decommissioning would help to renaturalise flows into the lake and downstream to the River Cocker, and remove an important barrier to salmon migration. However, removal could be contentious due to a perception that it would increase flooding in downstream Cockermouth, and damage the lake aesthetically.

Project aim

To investigate how modelling, visualisation and stakeholder engagement can be used to support dam decommissioning decision-making.



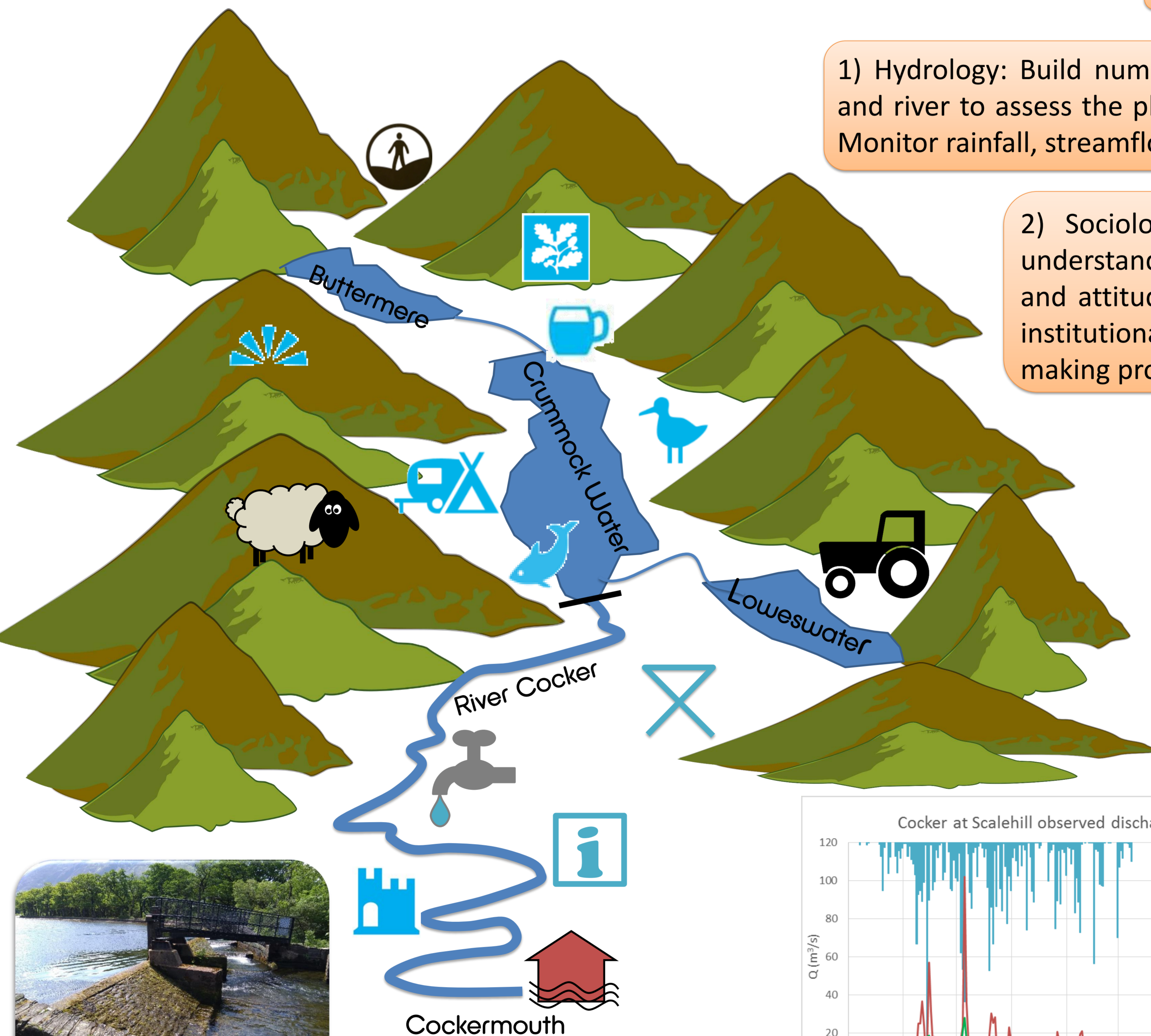
Methods

1) Hydrology: Build numerical models of the catchment and river to assess the physical impacts of weir removal. Monitor rainfall, streamflow and groundwater levels.

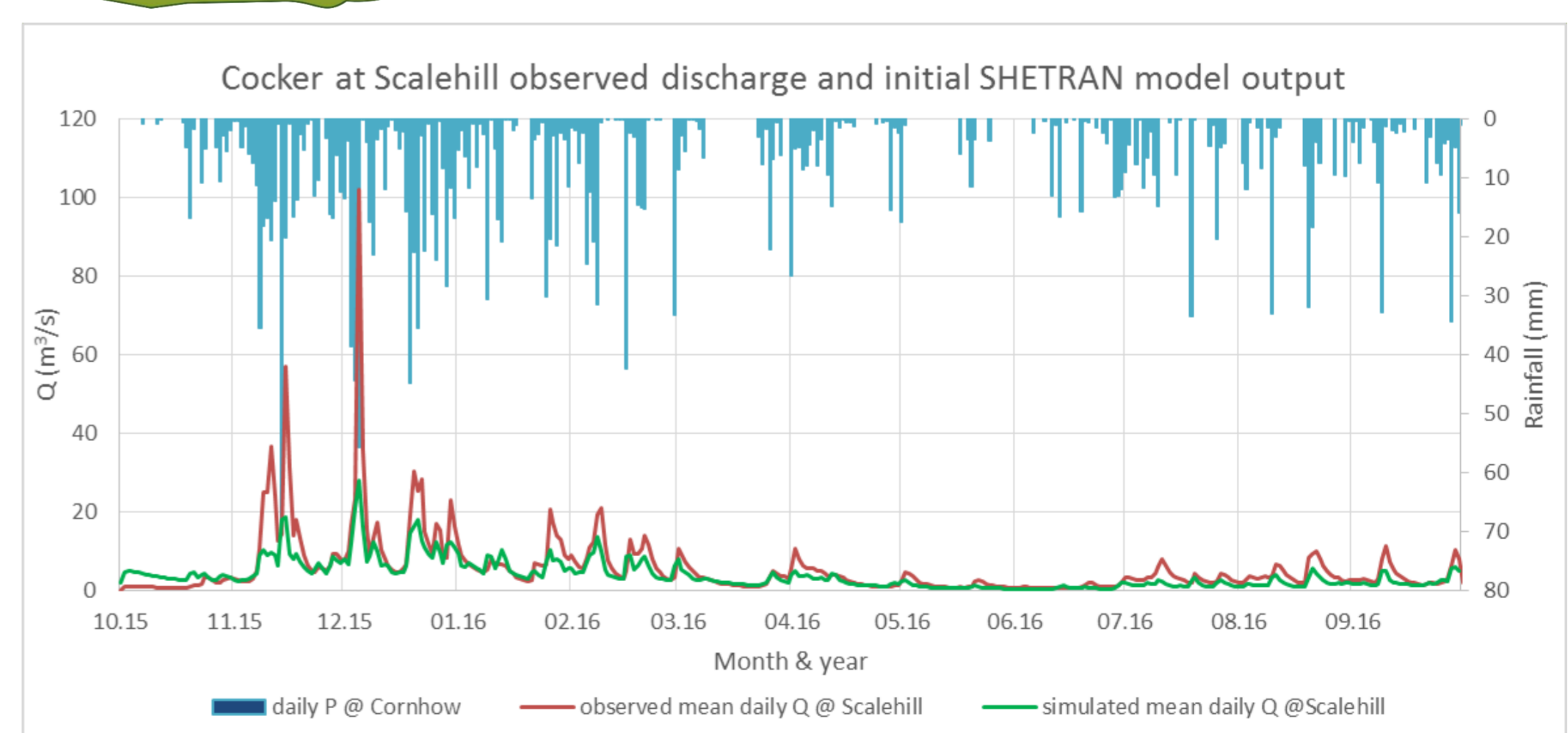
2) Sociology: Interview stakeholders to understand their knowledge, perceptions and attitudes. Undertake stakeholder and institutional analysis to inform decision making processes.

3) Socio-hydrology: Run community mapping events to improve models, and assess the effectiveness of 4D visualisation in changing stakeholder attitudes.

Initial results



Crummock weir at low lake level, 29th May 2018



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