



Project Title: Simulation of basin-scale groundwater drought behaviour using the British Groundwater Model

Supervisors: Marco Bianchi (BGS) , Andrew Hughes (BGS)

Location: This role will be based at the BGS offices in Keyworth.

Project Overview

The intern will use the British Groundwater Model or BGWM (see www.bgs.ac.uk/geology-projects/environmental-modelling/british-groundwater-model/) to examine how droughts propagate in groundwater systems. Working at a national scale they will focus on particular basins across Britain to understand how groundwater droughts have developed in the past.

They will explore what might happen from differing starting conditions based on simulating historic groundwater droughts, e.g. 1975/6. From this understanding creates a series of scenarios which can be used to understand how groundwater droughts are initiated and how they propagate across the selected basins.

Intern Tasks and Outcomes

- Familiarity with running the British Groundwater Model.
- Identify historic groundwater droughts.
- Create scenarios to examine groundwater drought events, how they start and how they propagate through the system.
- Examine the starting conditions for each drought and what this means for the drought development and propagation in the basin.

The ideal candidate will have the following skills:

- A background and understanding of groundwater systems.
- Groundwater modelling experience, particular USGS MODFLOW groundwater codes or similar groundwater modelling frameworks.
- Proficiency in data processing.
- Proficiency in Python.
- Strong numeracy/statistical skills and effective oral and written communication abilities.
- Good problem solving and critical thinking abilities with the ability to work effectively in a professional and collaborative environment.