



Hampshire Avon
Demonstration Test Catchment

BGS hydrogeological conceptual modelling work in the Avon DTC catchments

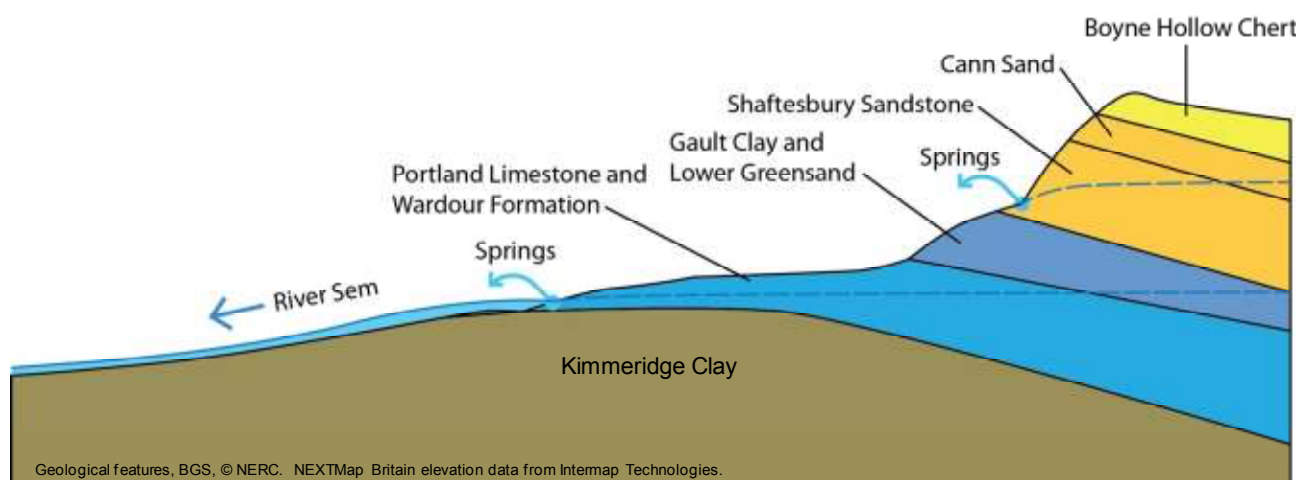
The British Geological Survey (BGS) is supporting the Avon DTC study by helping to improve understanding of the groundwater flow systems within the sub-catchments. The BGS work is funded principally by NERC as part of its National Capability (NC) Programme, with additional support from Defra.

In order to be able to evaluate the effectiveness of measures in reducing pollutant loads to the watercourses draining the Avon DTC sub-catchments it is important to understand the nature (and in particular the timescales) of the water flow routes between the location of the measures and the stream or river. In general in catchments the timescales of water flow can vary significantly - from possibly hours for overland flow to tens of decades for deep groundwater movement. Within the Avon DTC sub-catchments, groundwater is often considered to be an important water flow mechanism. By looking at the nature of the geological materials underlying the catchments, the groundwaters that they contain and how these waters interact with the surface, the BGS work is helping to build up a picture of how groundwater moves from areas of recharge on high ground to lowland discharge zones - for example as springs or seeps to rivers.

To date, geological data for the catchments have been used to construct initial 3D geological models. Hydrological and hydrogeological data from boreholes, maps and literature have been obtained and examined and previous hydrogeological interpretations reviewed. During field visits, samples from rivers, springs and boreholes have been obtained and analysed for their hydrochemical constituents in order to investigate water origin and age.

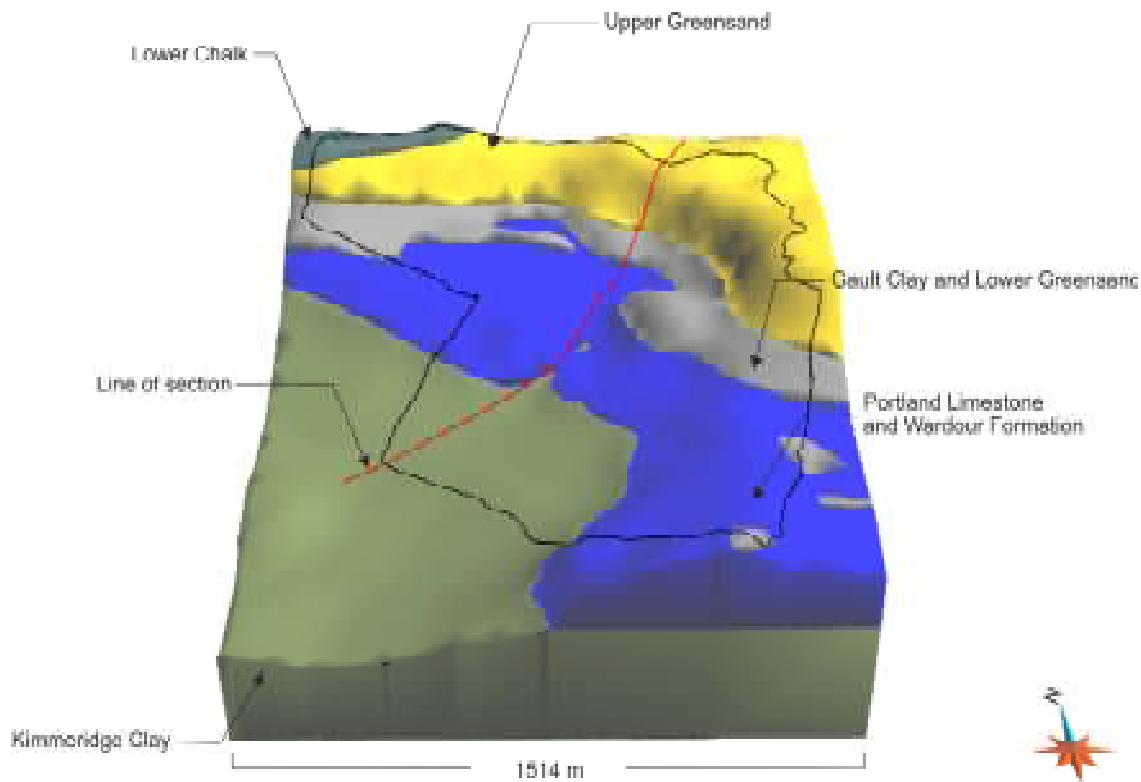
On the basis of this work, provisional conceptual models of the nature of the groundwater flow systems in the catchments have been prepared. At present these are qualitative assessments and focus on the likely aquifer and non-aquifer nature of the underlying geology, possible subsurface flow mechanisms, the origin and timescales of springwaters and the general interaction between groundwater and surface water (e.g spring inputs to the rivers).

These models will be used to improve knowledge of the rates of movement in groundwater flow systems within the catchments and this in turn should help with predicting the likely timescales before measures at the surface will become effective at the watercourses.





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Geological features, BGS, © NERC. NEXTMap Britain elevation data from Intermap Technologies.

The Hampshire Avon DTC is being led by Professor Adrian Collins from ADAS. The first phase of the project runs until 31st March 2014. For further details please contact:

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If you would like to join the Hampshire Avon DTC and be part of this project, please get in touch. Your local knowledge, experience, expertise and advice will be invaluable in helping to develop the right catchment and farm management solutions for reducing pollution in the Hampshire Avon catchment.

