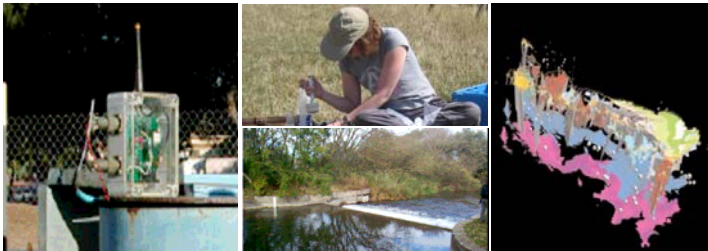


Mr Andrew McKenzie+
+ British Geological Survey



Key questions

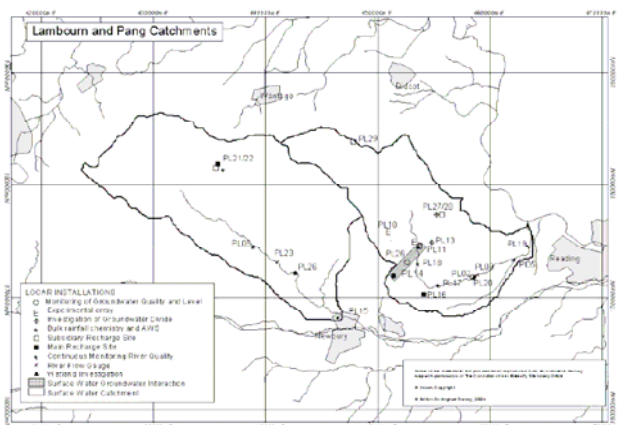
- How can we apply new technologies to hydrological data acquisition?
- How do we manage the increasing volume of collected data?
- How can data be best interpreted and modelled?
- How do we transfer data and knowledge into the hands of stakeholders?

Data management

Managing data and information is at the heart of investigations into the water environment. Collections of historical data, such as those held at NERC's National Water Archive provide baseline data and information for identifying environmental change. Modern scientific research projects generate large volumes of detailed data, especially with an increasing use of digital instrumentation recording hydrological, hydrogeological and chemical parameters in increasing detail. These data need to be collated, processed and managed to make them available to future researchers. Data integration of disparate datasets using databases, GIS and spatial modelling both supports researchers and allows data, information and scientific results to be conveyed to a wide audience.

Instrumented catchments

The Hydra consortium have considerable experience of running densely instrumented catchments. Building on the legacy of the LOCAR programme, permanently instrumented sites for integrated monitoring of meteorology, soil physics, surface and groundwater and water quality are maintained on the Berkshire downs for long term data acquisition and as a resource for research projects.



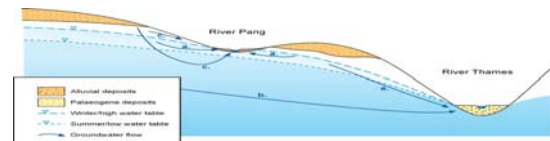
Technologies

New technologies are continually under development, to improve the range of data that can be collected, its accuracy and to reduce the cost of data acquisition by deploying data loggers and telemetered instrumentation. Current initiatives include the use of fibre optic cable for sensitive temperature logging as a tool to quantify groundwater/surface water interaction

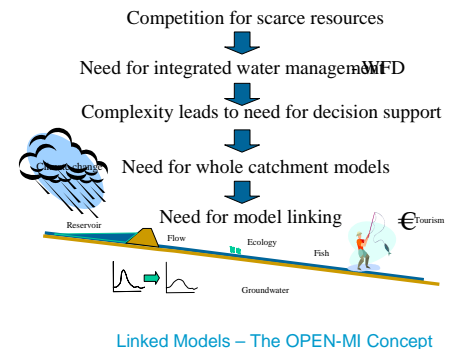


Modelling

Modelling of hydrological cycle components range from conceptual models of geology through models of individual processes to integrated models linking surface water, groundwater and ecological functions.

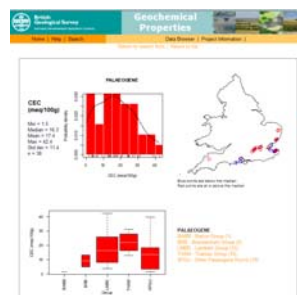


Development of new models, and of the technology frameworks to link models together is a key area of consortium research. Interoperable, object oriented models raise the prospect of placing increasingly sophisticated models to work to solve practical water management problems.



Web + knowledge transfer

Data and research have little value if not accessible to stakeholders. Web delivery of data, information is both efficient, and allows knowledge transfer tailored to end user's requirements, either providing access to raw data, or too web based interpretative tools and decision support.



Find out more...

Contact: Andy McKenzie aam@bgs.ac.uk