British Geological Survey
NATURAL ENVIRONMENT RESEARCH COUNCIL

The Hydrological Outlook UK

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Introduction

The Hydrological Outlook provides an insight into the future hydrological conditions across the UK over the next three months and beyond. It is the result of collaboration between the Natural Environment Research Council's British Geological Survey (BGS) and Centre for Ecology & Hydrology (CEH), the Environment Agency, Met Office, Natural Resources Wales, Rivers Agency Northern Ireland, and the Scottish Environment Protection Agency. Groundwater levels and river flows, forecasted by BGS and CEH respectively, are presented on a monthly basis with reference to normal conditions.

Figure 1 The Hydrological Outlook UK website.
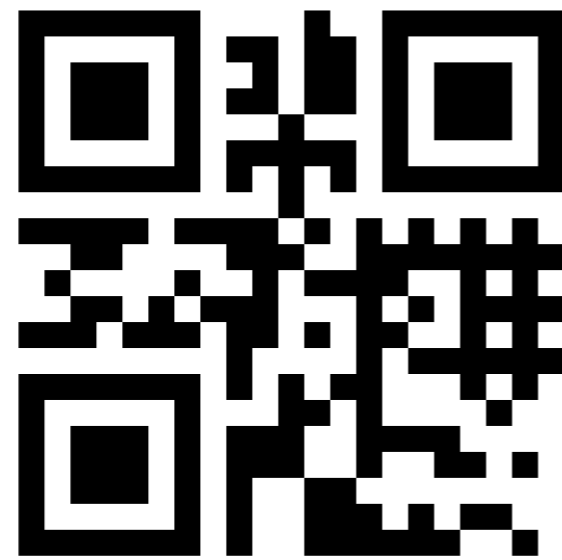
1 and 3-month outlook

- The one and three-month groundwater level outlooks are produced by running an ensemble of the Met Office seasonal forecasting model (GloSea5) projections through 25 AquiMod groundwater models developed by the BGS, which cover many of the principal UK aquifers.
- Groundwater level forecast maps corresponding to the lowest, 25th percentile, median, 75th percentile, and maximum rainfall forecast are produced.
- The groundwater levels are presented with respect to the seven categories derived based on the distribution of the historical values in a given month.
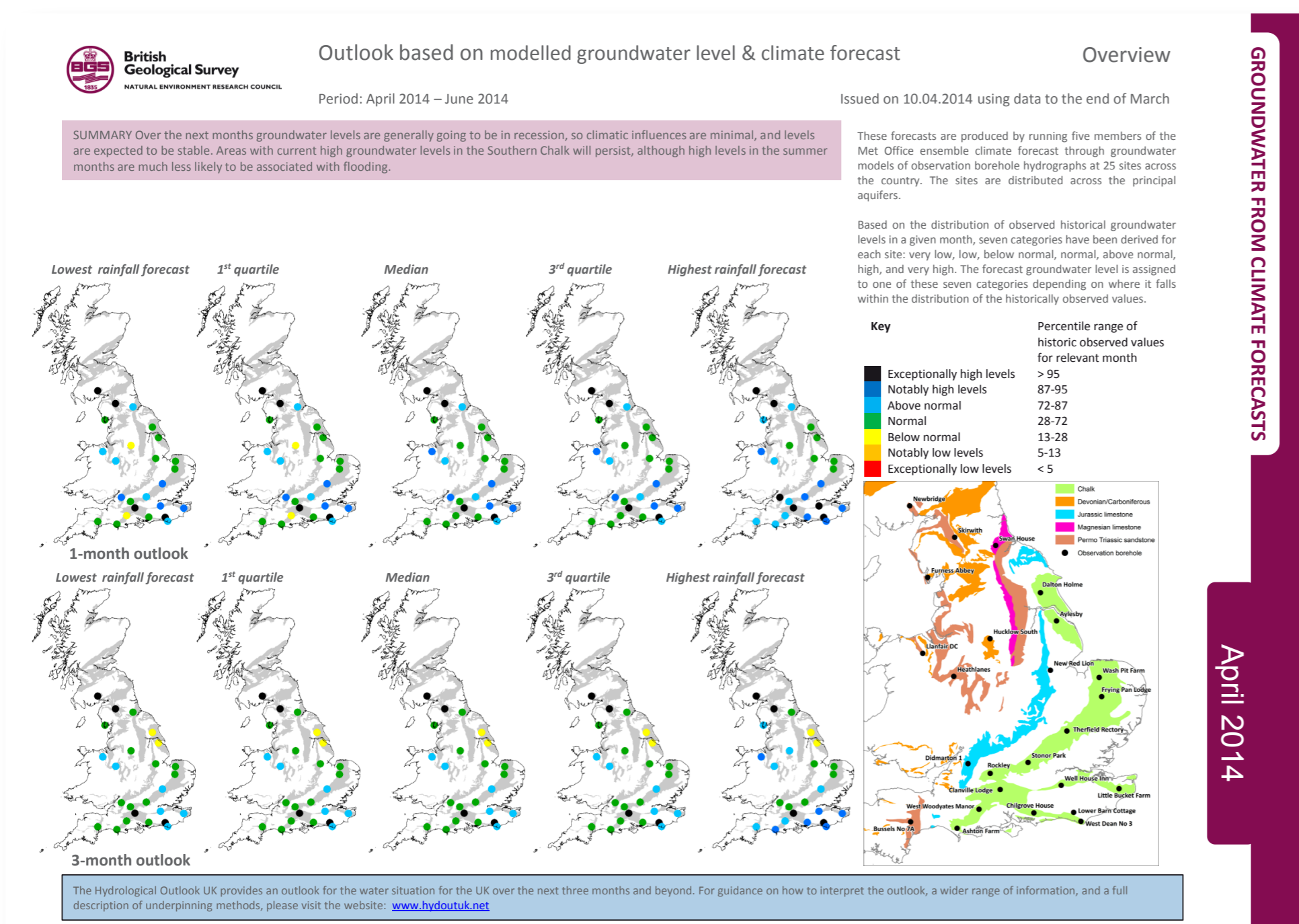

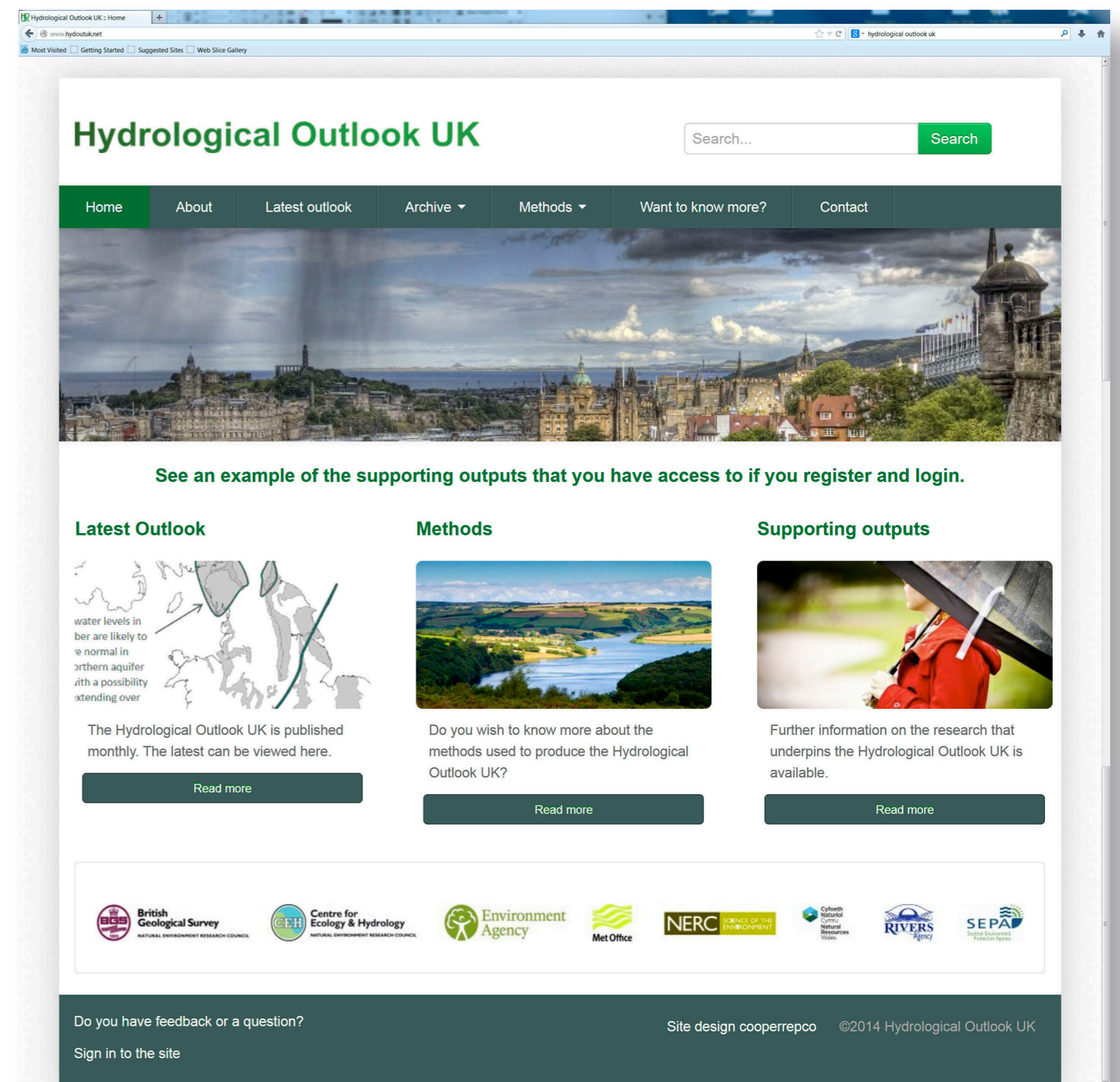**Figure 2** One and three-month outlook based on GloSea5 climate forecast.

12-month outlook

- The 12-month outlook is based on monthly ensembles of historical rainfall and potential evapotranspiration sequences.
- The historical climate sequences are run through AquiMod to provide ensembles of groundwater level simulations at the 25 sites over the next 3 to 12 months.
- The probabilistic 12-month groundwater level outlook is presented as graphs showing monthly variations in the number of the ensemble members falling in each of the seven categories. The monthly variations are compared to the long-term average distribution of the groundwater levels.
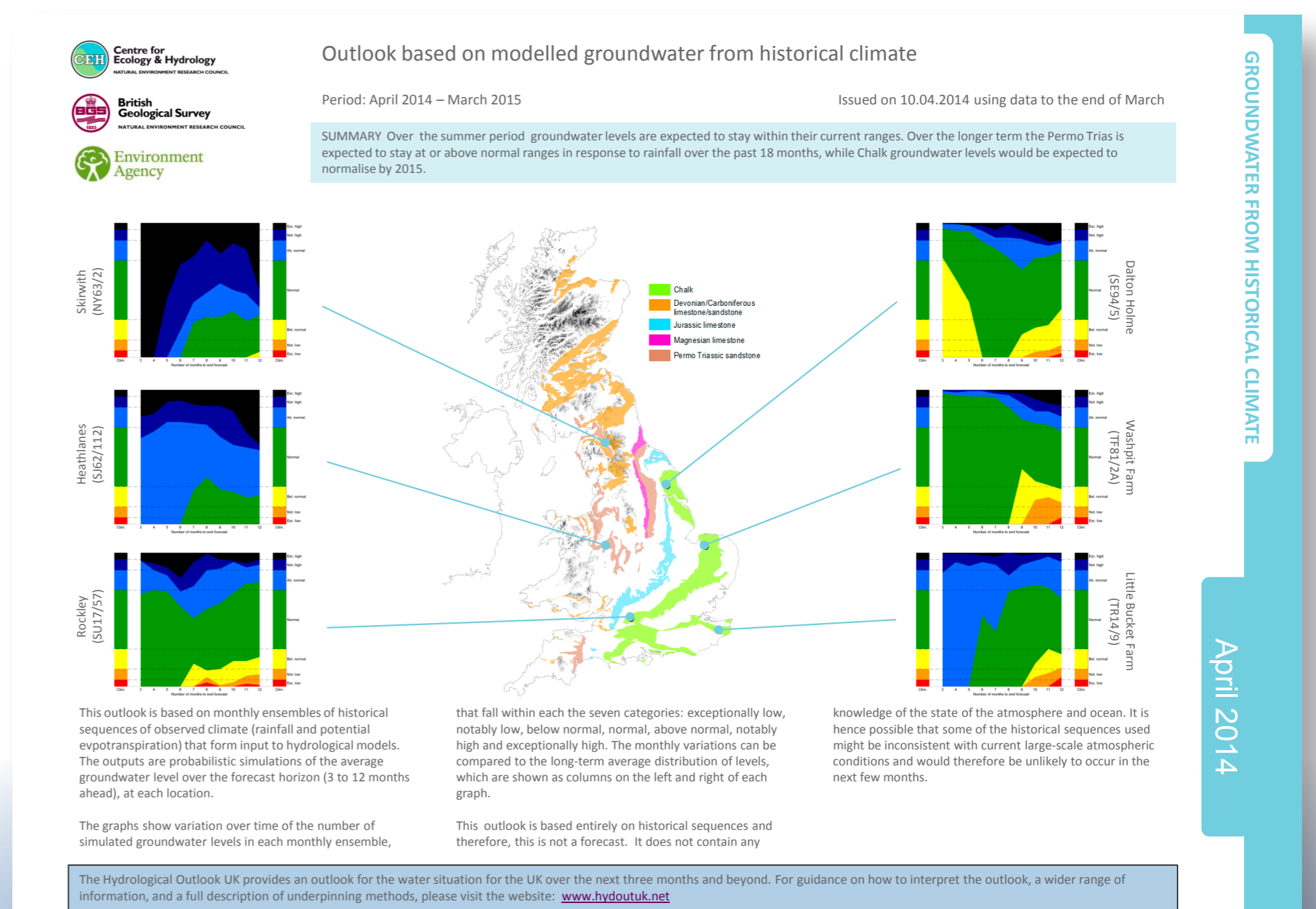

Figure 3 Twelve-month outlook based on historic climate.

Contact information

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