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Modelling the impacts of projected future climate change on water resources in north-west England

H. J. Fowler, C. G. Kilsby, and J. Stunell


Abstract. Over the last two decades, the frequency of water resource drought in the UK, coupled with the more recent pan-European drought of 2003, has increased concern over changes in climate. Using the UKCIP02 Medium-High (SRES A2) scenario for 2070–2100, this study investigates the impact of climate change on the operation of the Integrated Resource Zone (IRZ), a complex conjunctive-use water supply system in north-western England. The results indicate that the contribution of individual sources to yield may change substantially but that overall yield is reduced by only 18%. Notwithstanding this significant effect on water supply, the flexibility of the system enables it to meet modelled demand for much of the time under the future climate scenario, even without a change in system management, but at significant expense for pumping additional abstraction from lake and borehole sources. This research provides a basis for the future planning and management of the complex water resource system in the north-west of England.

[Final Revised Paper](#) (PDF, 869 KB)

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