



Is there a role for drought in enhancing DOC runoff?

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Upward trends in DOC concentration have been widely reported across the northern hemisphere and a number of possible mechanisms for such increases in DOC have been proposed including: rising air temperatures; declining atmospheric deposition and occurrence of severe drought. For the latter there has been no direct test of whether the occurrence of severe summer droughts. This study considers two approaches, firstly, detailed time series of long-term DOC concentration in comparison to a range of drought indices, and secondly, records of flux from across the UK were compared to measures of drought for four years around two severe summer droughts (1976 and 1995) and control period (1985). The results found no significant drought effect for any of the indices used. The residual time series after removal of the best-fit models showed no evidence of increased production after times of severe drought. Conversely, the study showed a strong link between DOC flux and water yield suggesting that there was little or no exhaustion of available DOC in the source and that DOC flux at large scale was never supply-limited.