



High spatiotemporal resolution monitoring of hydrological function across degraded peatlands in the south west UK.

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The Exmoor/Dartmoor Mires Project is a peatland restoration programme focused on the geoclimatically marginal blanket bogs of South West England. In order to better understand the hydrological functioning of degraded/restored peatlands and support land management decisions across these uplands, this study is providing robust spatially distributed, hydrological monitoring at a high temporal resolution and in near real time.

This paper presents the conceptual framework and experimental design for three hydrological monitoring arrays situated in headwater catchments dominated by eroding and drained blanket peatland. Over 250 individual measurements are collected at a high temporal resolution (15 minute time-step) via sensors integrated within a remote telemetry system. These are sent directly to a dedicated server over VHF and GPRS mobile networks. Sensors arrays are distributed at varying spatial scales throughout the studied catchments and record multiple parameters including: water table depth, channel flow, temperature, conductivity and pH measurements. A full suite of meteorological sensors and ten spatially distributed automatic flow based water samplers are also connected to the telemetry system and controlled remotely. This paper will highlight the challenges and solutions to obtaining these data in exceptionally remote and harsh field conditions over long (multi annual) temporal scales.