AGU FALL MEETING
San Francisco | 12–16 December 2016

H23L-07: Improving Drought Monitoring and Early Warning for Water Resource Management in the UK: an Impact Focused Approach

Tuesday, 13 December 2016
15:10 - 15:25
Moscone West - 3022

Drought is a complex natural phenomenon; the many possible manifestations (meteorological, hydrological, agricultural, environmental etc.) and wide range of impacts makes droughts challenging to identify, plan and prepare for. A multitude of indicators have been developed in attempts to identify and quantify droughts, including the Standardised Precipitation Index (SPI) and the Standardised Streamflow Index (SSI). Although these indicators are commonly used around the world in drought monitoring and early warning systems, there is generally little evidence for what these indicators mean in terms of observed drought impacts. The international Belmont Forum-funded DrIVER (Drought Impacts and Vulnerability Thresholds in monitoring and Early warning Research, https://www.drought.uni-freiburg.de/) aims to improve understanding of the relationships between drought indicators and impacts to inform drought monitoring and early warning (M&EW). Here we focus on the UK, a DrIVER case study area, where there are wide range of stakeholders involved in water resources management, using different indicators and triggers, and where there is no systematic collation of drought impacts in real time. We demonstrate the potential of standardised drought indicators for improving UK M&EW, through linkage with observed impacts data and operational triggers used by decision-makers. To achieve this, for several case study regions in England, we analyse drought indicators (SPI, SPEI, SSI) for recent major drought events, alongside datasets of impacts (e.g. ecological monitoring data and impact data from the European Drought Impact report Inventory, EDII) and management triggers and observed restrictions. Results illustrate the benefits of including drought impact data in M&EW systems in addition to more traditional hydro-meteorological-agricultural approaches; more integrated and holistic M&EW should lead to improved drought management.

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