



# Introduction and current drought research overview

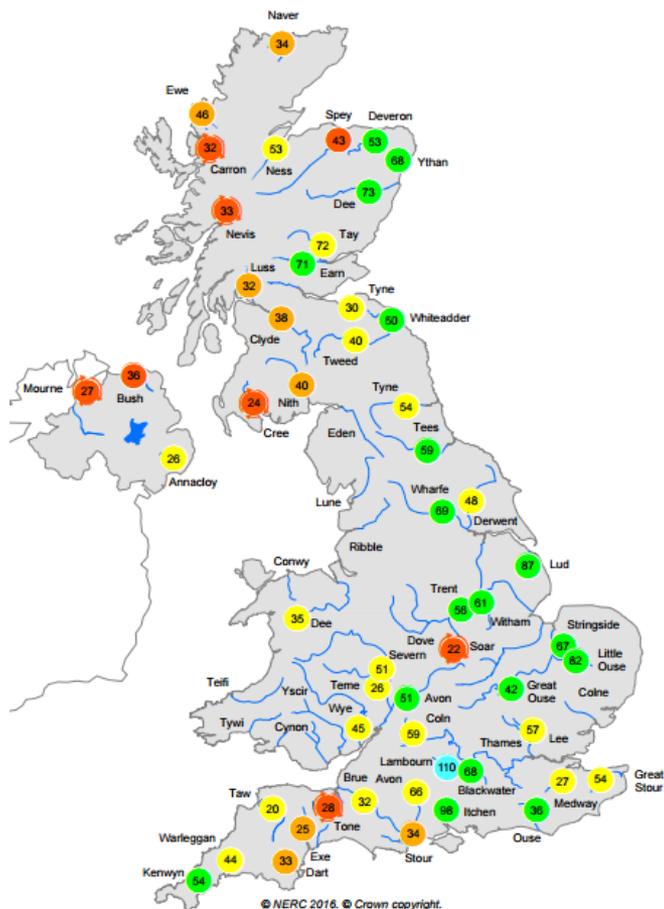
Jamie Hannaford

Leader, Hydrological Status and Reporting Group, CEH

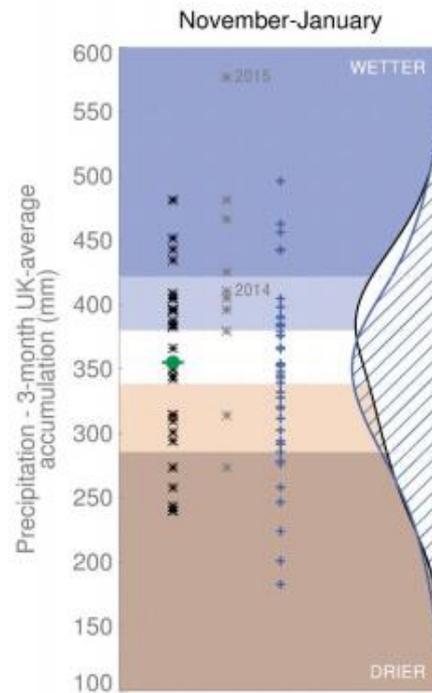
# Monitoring and forecasting: topical!

## CEH Hydrological Summary Oct 2016

## Met Office 3-month outlook (Nov-Jan 2016)



### 3-month UK outlook for precipitation in the context of observed climatology



✱ Observations 1981-2010    ● 1981-2010 Average    ✱ Observations 2006-2015    2016 outlook: + Nov-Jan

# The DrIVER Project

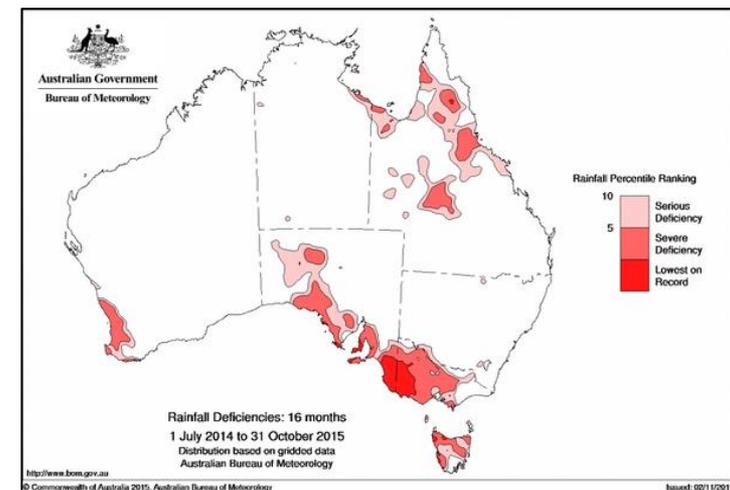
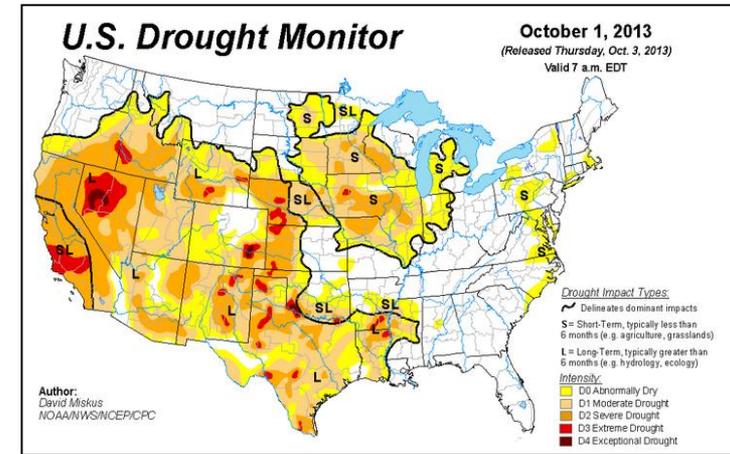


## Drought Impacts and Vulnerability Thresholds in monitoring and Early warning Research

- 2013 - 2016
- Funded by 'Belmont Forum' International group of Funding Agencies (IGFA) – NERC funds UK part
- Partners: CEH, Open University, University of Freiburg (Germany), National Drought Mitigation Center (US) and CSIRO (Australia)

### DrIVER will:

- Improve monitoring and early warning systems through linking drought indicators with drought impacts
- Facilitate knowledge exchange across three continents
- Engage water managers through social learning to improve drought management frameworks



# The Drought and Water Scarcity Programme

**Four-year (2014 – 2018) interdisciplinary, £12m+ NERC programme in collaboration with ESRC, EPSRC, BBSRC and AHRC.**

## **Aims:**

- Characterise the drivers and nature of droughts and water scarcity, including the environmental, social and cultural factors that influence their occurrence, severity and impact;
- Examine the multiple and inter-linked impacts of UK droughts and water scarcity on the environment, agriculture, infrastructure, society and culture and the trade-offs between them;
- Develop methods to support decision making for drought and water scarcity planning and management and to assess opportunities through management (including community and public responses) to reduce their occurrence and severity.

# The Drought and Water Scarcity Programme

- WP1: Characterisation and quantification of the roles of multiple drivers, their impacts, and cumulative effects during historic periods of drought and water scarcity and methods to support decision-making
  - **Historic Droughts. £1.5m Lead PI: Jamie Hannaford, CEH.**
- WP2: Forecasting droughts and water scarcity, and methods to support decision-making
  - **IMPETUS. £2m. Lead PI: Len Shaffrey, University of Reading**
- WP3: Impacts of droughts and water scarcity, and methods to support decision-making
  - **MaRIUS. £3.4m. Lead PI: Jim Hall, University of Oxford**
  - **DRY. £3.6m. Lead PI: Lindsay McEwen, University of the West of England**
- WP4: Knowledge Synthesis (running 2016 – 2018)



# Common themes

- Modelling
- Indicators
- Impacts
- Scenarios
- Uncertainty
- Risk
- Resilience
- Communication
- Narratives
- ....



**From NERC Droughts Call:**

“Develop methods to support decision-making for drought and water scarcity planning and management, and to assess opportunities (including community and public responses) to reduce their occurrence and severity”

# Programme Co-ordination and integration

- Coming soon: targeted workshops aimed at particular sectors:
  - **Agriculture:** 2<sup>nd</sup> December, Peterborough
  - **Water Supply:** December, dates tbc
  - **Environment:** early 2017
- Work-Package 4: proposal due mid-January
- Further info: [dws\\_pct@googlegroups.com](mailto:dws_pct@googlegroups.com)





## The future of drought monitoring and early warning systems in the UK

- **Session 1.** New developments in monitoring and early warning: potential for decision-making
- **Session 2.** The future: from indicators to impacts, from large-scale to local

# Aims of the day

- Share updates on the research being done in DRIVER/IMPETUS
- Hear feedback on these outputs and specific 'products', e.g. drought portal, winter rainfall forecasts
- Understand different decision-making needs and requirements of various sectors/stakeholders for monitoring and early warning info
- Learn from each other's experiences in drought monitoring, management, communication
- **Final Goal:** a road-map for future evolution of UK monitoring and forecasting systems – output as publication, meeting report, policy/sectoral briefing documents

# Groups for the day

- Water Supply



- Agriculture



- Environment

