

Universität für Bodenkultur Wien
University of Natural Resources
an Life Sciences, Vienna


International Symposium on Climate Impacts on Low Flows and Droughts, Vienna 2012

powered by  ÖGH Österreichische Gesellschaft für Hydrologie 

International Symposium on Climate Impacts on Low Flows and Droughts

1-2 March 2012, Vienna/Austria

Scientific Organisation:
Gregor Laaha (BOKU Vienna), Günter Blöschl (TU Vienna),
Wolfgang Schöner (ZAMG)

 Universität für Bodenkultur Wien
University of Natural Resources
an Life Sciences, Vienna  TECHNISCHE UNIVERSITÄT WIEN
Vienna University of Technology 

Hydrological drought – an up-to-date topic

24 February 2012 Drought in England

Environment Agency

Current water status
Current water status and latest drought management briefing.

Current drought situation
Last updated: 24 February 2012
On Monday 20 February, the Environment Secretary announced that the South East of England has officially moved into drought status. This is due to the combination of persistent dry weather and the continuing decline in groundwater levels and river flows and increasing the risk to public water supplies, agriculture and the environment.
As a result Hampshire, West Sussex, East Sussex, Kent, Surrey, London, Berkshire, Hertfordshire, Buckinghamshire, Oxfordshire, and the east of Gloucestershire are now in drought.

Drought management briefing
We have activated our drought plans and produce a regular drought management brief to keep everyone informed about the latest situation.
Drought management briefing - 24 February 2012 (PDF, 38KB)

Drought prospects for 2012
We have produced a report that gives an early indication of drought prospects through winter 2011 into spring 2012. We will shortly be publishing a report that will set the outlook for water resources for spring and summer 2012.
Drought prospects report for winter and spring 2011/12 (PDF, 1MB)
We have also produced a map showing drought risk areas in 2012 in England and Wales.

www.environment-agency.gov.uk

Hydrological drought – an up-to-date topic

Environment Agency

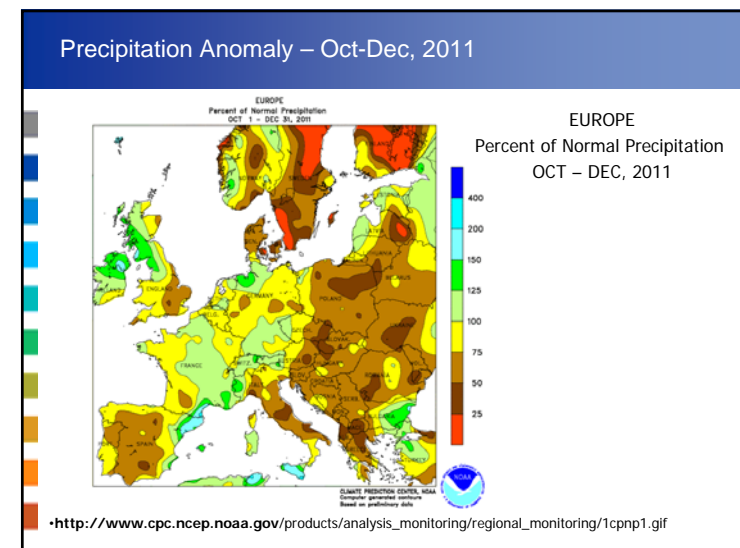
Drought in England

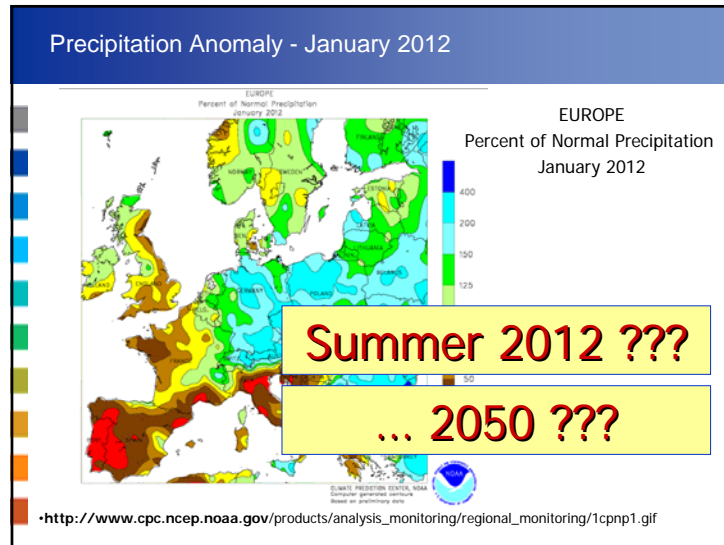
Key findings






- Dry weather and drought continue to affect central, eastern and southern England.
- The main impact of drought so far has been on **farming and the environment**.
- Some **water companies** in affected areas may apply for further drought permits to help secure supplies. They may need to impose restrictions on their customers next spring and summer.

Key actions

- **Inform** farmers about the risk of drought **restrictions** affecting spray **irrigation**.
- Respond more quickly to requests for **licence variations**.
- Determine water company **drought permits** (and support government on **drought orders**) where required.











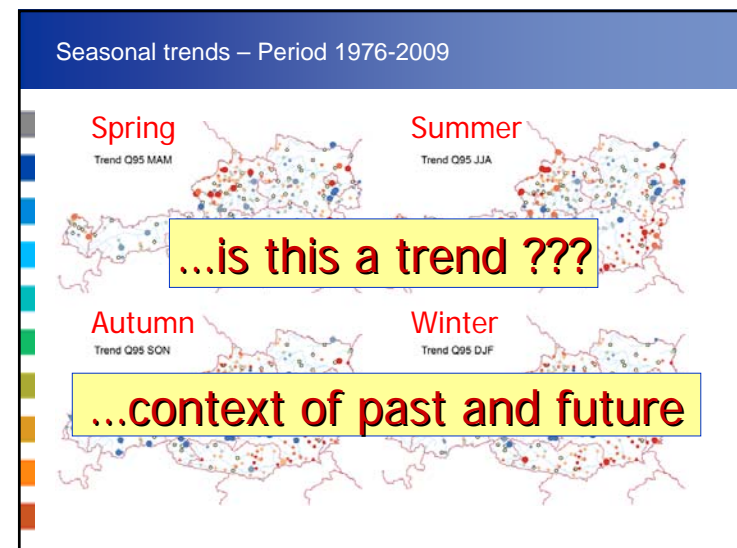
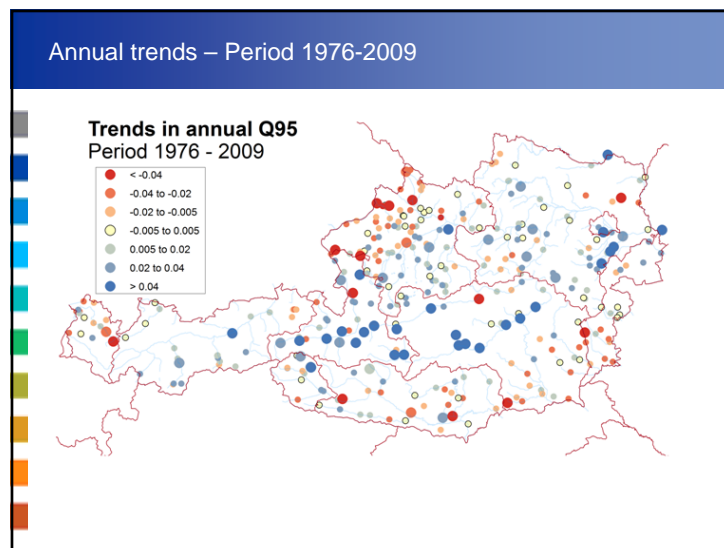
Project CILFAD
Climate Impact on Low Flows And Droughts

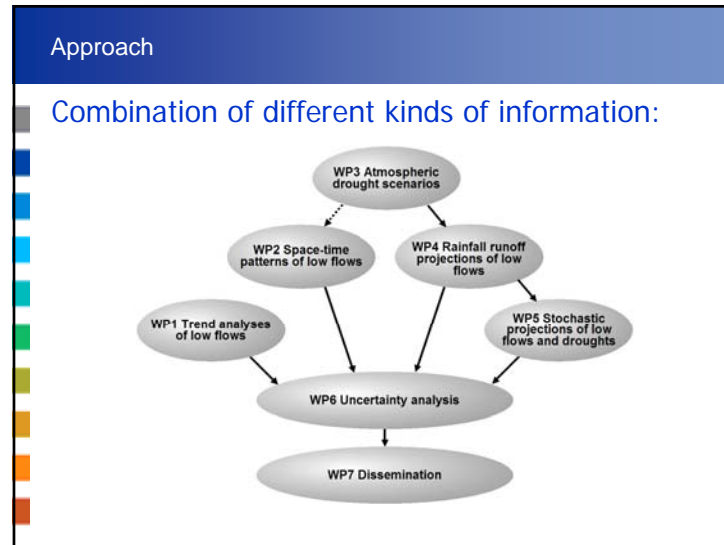
Duration: 2011 - 2013

Partners:
 BOKU Vienna – Institute of Applied Statistics & Computing
 TU Vienna - Hydraulic Engineering and Water Resources Management
 ZAMG - Central Institute for Meteorology and Geodynamics

Laaha Blöschl Schöner Koffler Parajka Haslinger





Innovative content of the study

- **Space-time patterns of observed low flows**
... instead of classical trend analysis of single sites
... exploit space-time correlations of low flow and drought patterns
- **Reconstruction of historic droughts**
... use of extended information of the past (HISTALP-Daten)
- **Atmospheric drought scenarios**
... dynamic and statistical downscaling
... validated against observations (ZAMG Startclim data)
- **Mechanistic models**
... combine rainfall-runoff projections of low flows with stochastic projections of low flows and droughts

=> Comparison of trends and climate signals



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Call for papers
Registration
Program
Place and Venue
Accommodation
Sponsors

International Symposium on Climate Impacts on Low Flows and Droughts

1st-2nd March 2012, Vienna/Austria

Purpose and topics:
Low stream flows and associated streamflow droughts have major economic implications in Europe. Current global change scenarios suggest that the magnitude and frequency of droughts may increase in the next decades with important ramifications for water quality, the ecological status of European water bodies, irrigation, navigation and power production.

The symposium brings together drought experts from various disciplines to compare the current status of drought research and the implications for water resources management. The symposium focuses on the European continent and provides a platform for discussing large-scale studies in a regional context, and national/regional studies in the European context.


Conference topics:

1. Drought processes in the atmosphere and in catchments
2. Trends and patterns of droughts
3. Reconstruction of historic droughts
4. Modelling low flows and droughts
5. Drought scenarios
6. Implications for water resources management

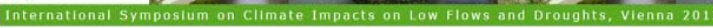
The following questions will be discussed:

- What are the main climate drivers of hydrological change related to droughts?
- What is the state-of-the-art of drought modelling, including scenarios, downscaling and coupling models?
- What is known about the time patterns of droughts from observed, reconstructed and projected time series in streamflow and climate variables?
- What are the predictions of future low flows and droughts, and how reliable are such predictions in the light of all
- How do regional assessments fit into Europe-wide analyses, and vice versa?
- What are the lessons on climate impacts on low flows and droughts to be learned for science and water resource

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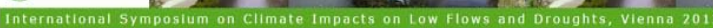
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- What are the **predictions of future low flows** and droughts, and how reliable are such predictions in the light of all the uncertainties involved?
- How do **regional assessments** fit into **Europe-wide analyses**, and vice versa?
- What are the **lessons** on climate impacts on low flows and droughts to be learned for **science** and **water resources management**?




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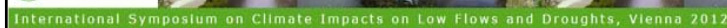
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Conference format:

- 6 topical sessions
- Keynote & oral presentations
- Poster session (in coffee breaks)
- After three sessions: discussion with keynote speakers



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Program – Thursday 1 March

9³⁰ - 11⁰⁰	Drought processes (Chair: Bodo Ahrens)
Sonia Seneviratne Christian Reszler Adrian Tieding Björn THOMAS	Keynote: Droughts in present and future climate: Perspectives on seasonal predictions to multi-decadal projections Low flow characteristics - the influence of geological conditions The role of evapotranspiration and runoff in the development of recent droughts in Central Europe Which catchment properties determine runoff behavior in small catchments?
11⁰⁰ - 11³⁰	Coffee break and poster session
11³⁰ - 13⁰⁰	Trends and patterns of droughts (Chair: Sonia Seneviratne)
Lena H. Tallaksen Jamie Hannaford Jorge Lorenzo-Lacruz Vesselin Alexandrov	Keynote: Drought and Low Flow in Europe: Observations and Multi-model simulations European hydrological drought patterns: simulations by Global Hydrological Models and future projections Regional assessment of streamflow response to drought at different time scales in the Iberian Peninsula Droughts in Bulgaria and SE Europe - changes and management
13⁰⁰ - 14⁰⁰	Lunch break
14⁰⁰ - 15¹⁰	Reconstruction of historic droughts (Chair: Wolfgang Schlöner)
Emmanuel Garrier Neil Macdonald Sandra Karamitsch-Ackerl	Keynote: The historic approach of the droughts and its perspectives for the research A millennial scale drought history for NW England Can tree rings of black pine (Pinus nigra) be used as a proxy for low flow?
15¹⁰ - 15³⁰	Discussion of the previous sessions (Chair: Günter Blöchl)
	Sonia Seneviratne, Lena Tallaksen, Emmanuel Garrier
15³⁰ - 16⁰⁰	Coffee break and poster session
16⁰⁰ - 17³⁰	Modelling low flows and droughts (Chair: Jamie Hannaford)
Benjamin Renard Wojciech Jakubowski Maria Staudinger Gregor Laaha	Low flows in France and their relationship to large scale climate indices Estimated distributions of low flow characteristic - some remarks about their instabilities Persistence of the actual hydrological state in streamflow prediction Keynote: A synthesis of low flow prediction at ungauged basins - PUB report and beyond
19⁰⁰ - 22³⁰	Social event and conference dinner

Program – Friday 2 March	
8 ⁰⁰ - 8 ⁴⁵	Coffee reception
8 ⁴⁵ - 10 ⁰⁰	Climate models and scenarios (Chair: Günter Blöschl)
Bodo Ahrens	Keynote: Meteorological dry and wet spells in Europe: observed and simulated by climate models
Shaochun Huang	Projection of low flow condition in Germany under climate change by combining three RCMs and a regional hydrological model
Jean-Philippe Videt	Effect of climate change adaptation and mitigation scenarios on spatio-temporal drought characteristics
10 ⁰⁰ - 10 ³⁰	Coffee break and poster session
10 ³⁰ - 11 ⁴⁰	Implications for water resources management (Chair: Miriam Fendekova)
Christian Kopeinig	Keynote: The early warning system for drinking water supply in Carinthia
Mikhail Bolgov	Low flow risk assessment for water management
Raphael Meyer	The implications of projected climate change on summer low flow in the Swiss Plateau based on a multi-variable calibration of the hydrological modeling system PREVAH
11 ⁴⁰ - 12 ⁰⁰	Discussion of the previous sessions (Chair: Lena Tallaksen)
	Gregor Laaha, Bodo Ahrens, Christian Kopeinig
12 ⁰⁰ - 12 ²⁰	Short break
12 ²⁰ - 13 ⁰⁰	Closing Session
Karl Schwaiger	Keynote: Climate impacts on low flows and droughts - first responses at European level

