



Prediction in Ungauged Basins (PUB)  
The 'Top-Down modelling  
Working Group (TDWG)



**Newsletter #3**

**Restructuring of PUB and TDWG**

At the VIIIth IAHS Scientific Assembly in Foz do Iguaçu, Brazil (3-9 April 2005), leadership of the Science Steering Group (SSG) was handed over from Murugesu Sivapalan to Jeffrey McDonnell. Based on the approach taken by the TDWG, a “troika” leadership structure (three members sharing the leadership) has been adopted for the seven science themes within PUB. In addition, each working group will be aligned with a particular theme, but linkages between themes is strongly encouraged. The Themes and troika members are:

Theme 1. Basin inter-comparison and classification  
Ross Woods, NZ; Marc Stieglitz, USA; Günter Blöschl, Austria

Theme 2. Conceptualization of process heterogeneity  
Stefan Uhlenbrook, The Netherlands; Chris Soulsby, UK; Simon Lorentz, South Africa

Theme 3. Uncertainty analyses and model diagnostics  
Thorsten Wagener, USA; Jim Freer, UK; Erwin Zehe, Germany

Theme 4. Develop and use of new data collection approaches  
Huub Savenije, The Netherlands; Witold Krajewski, USA; John Gibson, Canada;

Theme 5. New hydrological theory  
Peter Troch, The Netherlands; Jim Kirchner, USA; Louise Heathwaite, UK

Theme 6. New model approaches  
David Post, Australia; Barry Croke, Australia; John Pomeroy, Canada;

Theme 7 National Working Groups and PUB Tech Transfer  
Ian Littlewood, UK; Yasuto Tachikawa, Japan; Chris Spence, Canada

The leaders of the Theme troikas (first troika member listed) will form (with Jeffrey McDonnell) the new SSG. The TDWG has been associated with Theme 6, which includes both top-down and bottom-up approaches. The aim of this is to develop links between the top-down and bottom-up communities, and hopefully lead to the development of hybrid models (models based on both the top-down and bottom-up philosophies).



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TDWG continues to have a troika leadership consisting of Ian, David and Barry, with the lead role passing from Ian to Barry.

### ***Meetings/Workshops***

#### **SIMMOD 2005, Bangkok, 17-19 January 2005**

The purpose of the International Conference on Simulation and Modelling 2005 was to encourage the use of models in public and private decision-making in Thailand, and in south-east Asia generally. During the general hydrology session a presentation on the PUB initiative and the TDWG was given with an aim of extending the focus of the Group into other countries in south-east Asia.

#### **International Strategic LSM Workshop for IAHS/PUB, January 2005**

This workshop focused on the use of land-surface models (LSMs) in hydrology. A presentation was given on some of the planned activities of the TDWG. This included work on catchment classification, use of data analysis (including spectral analysis and data mining tools), and the development of, and access to, catchment datasets. Some initial ideas of how LSMs might be used by top-down modelling approaches as well as application of the top-down philosophy to LSMs were discussed. This included using LSMs to provide information on spatial variability within catchments and using top-down models to address the issue of stepping from the point-scale where LSMs are based to the catchment-scale.

#### **VIIth IAHS Scientific Assembly, Foz do Iguaçu, Brazil, 3-9 April 2005**

The VIIth IAHS Assembly held at Foz do Iguaçu, Brazil, marked the end of the first two years of PUB. A presentation on the TDWG was made in S#7-7; a corresponding paper (abstract follows) by Littlewood, Croke and Post will appear in an IAHS Red Book on S#7 being edited by Murugesu Sivapalan.

Abstract: Contributing to the Preparation and Planning phase (2004-2006) of the International Association of Hydrological Sciences (IAHS) Decade (2003-2012) for Prediction in Ungauged Basins (PUB), the paper describes the background, aims and initial activities of the Top-Down modelling Working Group (TDWG). It summarises broad features of the top-down modelling approach for estimating hydrological variables at ungauged sites and outlines initial activities of the TDWG. Links likely to develop between the TDWG and other PUB Working Groups as the PUB Decade unfolds further are mentioned. The TDWG website is introduced, which is intended to encourage dialogue within the TDWG, PUB and more widely. The proposed INTRAPUB project (Information TRAnsfer for Prediction in Ungauged Basins) is outlined.



### ***Future meetings***

#### **MODSIM05, Melbourne Australia, 12 – 15 December, 2005**

The next meeting of the Modelling and Simulation Society of Australia and New Zealand will be held in Melbourne in December 2005. While the Society is based in Australia and New Zealand, it has members from 50 countries, including Canada, China, France, Germany, Japan, The Netherlands, South Africa, Spain, Switzerland, the United Kingdom and the United States. A session is being organised by the TDWG, and all members who have submitted abstracts are reminded that papers should be submitted to the WCMT site for the conference

(<http://www.civenv.unimelb.edu.au/wcmt>). The conference website is <http://www.mssanz.org.au/modsim05/>

#### **iEMSs2006, Burlington, Vermont, USA, 9-12 July 2006**

iEMSs2006 will be the 3rd Biennial meeting of the International Environmental Modelling and Software Society. This meeting will be a summit on Environmental Modelling and Software, with the focus on discussion and interaction between participants. The aim of the summit is to enhance sustainability outcomes and decision processes by:

- establishing the state-of-the-art in Environmental Modelling and Software theory and practice for integrated assessment and management;
- identifying research and practice for advancing the requisite knowledge base and tools, and their wider usage; and
- initiating and consolidating research partnerships for systematic studies that acquire, capture and generate knowledge platforms

<http://www.iemss.org/iemss2006/>

A session at iEMSs2006 is being organised by the TDWG and Theme 6. The focus of this session is on the development of new models, using top-down, bottom-up and hybrid approaches. This includes developments based on the analysis of existing models or development of new models from theory and/or field data. Contributions related to the development of new datasets (e.g. using remote sensing techniques) and techniques for estimating parameter values for ungauged sites are also welcome. As the aim of PUB is to reduce predictive uncertainty, all authors are strongly encouraged to discuss the uncertainty in their results, techniques, models or data. All TDWG members are strongly encouraged to contribute to this session.

### ***TDWG Membership***

There are currently 47 members of the TDWG, spanning 16 countries (though approximately half the members are from either the UK or Australia). For a list of current members see “TDWG membership and contact points” on the website. Would



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members please let the organisers know if their details are incomplete or incorrect. It was decided to not show email addresses, initially at least. Would members who wish their email addresses to appear in the List of Members please email Barry to give permission for this. Your email address will not appear in the website List of Members unless you give your permission explicitly. Since an important objective of the TDWG is networking we hope that most members will agree to their email addresses to appearing on the website.

As the TDWG develops further we envisage that individual members will be willing to be associated with particular tasks or functions. Ideas along these lines are always welcome.

### **Datasets**

Several datasets are in the process of being made available from the TDWG website. These include:

- MOPEX dataset for 438 US catchments (contact: John Shaake)  
The MOPEX dataset includes daily rainfall, streamflow, potential evaporation and maximum and minimum temperature for 438 catchments in the USA (not including Alaska and Hawaii).
- UK data (contact: Ian Littlewood)  
There are two UK datasets that can be downloaded free-of-charge: rainfall and flow for about 60 catchments (Data60UK); and flows/catchment details for about 200 catchments (Data200UK). For details of these datasets and how to download them, see the Appendix to this Newsletter.
- Australian data (contact: Francis Chiew)  
The Australian dataset includes daily rainfall, streamflow and monthly mean potential evapotranspiration for 331 relatively unimpaired catchments distributed across Australia.

These datasets (or details of how to access them) will be available from a 'data' page of the TDWG website soon.

Additionally, data for a number of catchments in France are planned to be made available through the website. TDWG members will be informed when these datasets are available. Members using the data are encouraged to liase with the contacts given above, and to notify the TDWG leadership of any papers (conference or journal) that are published.



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### **Projects**

TDWG members are reminded that the TDWG organisers would like to be kept informed of developments regarding projects, workshops etc, so that this information can be disseminated to the TDWG and PUB community through the website. If you think the TDWG might be able to help you beyond this during either the project proposal or dissemination stages please do contact us.

Best regards

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