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THE NEWSLETTER OF THE BRITISH HYDROLOGICAL SOCIETY

Circulation

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Questioning existing hydrological concepts

BHS Postgraduate Symposium 2006
Lancaster University
6–7 November 2006

The annual Postgraduate Symposium exists to bring together young graduates working in hydrology, whether in employment or doing postgraduate research, to promote exchange of hydrological ideas and experience, and to help establish networks among hydrology researchers and practising hydrologists in the early stages of their careers.

The 16th BHS Postgraduate Symposium was organised for BHS by the Centre for Sustainable Water Management, which is part of Lancaster Environment Centre, a joint venture between Lancaster University and the Centre for Ecology and Hydrology.

The symposium ran in conjunction with the Uncertainty in Groundwater Models meeting on 6th November. In the evening, delegates from both events enjoyed a dinner at the Whale Tail in Lancaster, sponsored by BHS and CSWM.

The Society supported the attendance of BHS members, and this year BHS President Rod Hawnt also presented free BHS subscriptions for the next year to all seven speakers at the symposium.

Presentations

The presentations can be downloaded as pdf files from *http://www.lec.lancs.ac.uk/cswm/bhs_pg/programme.php*.

- **Alireza Nazemi** (University of Birmingham) *"On the multi-objective orientation of calibration in conceptual hydrologic models and its propagation in regionalization process"*
- **Mark Wilkinson** (Newcastle University) *"A multi-scale nested experiment for understanding and prediction of high rainfall and flood response spatial behaviour"*
- **Erling Dalen** (University of Leeds) *"Runoff generation in SE Spain"*
- **Timothy Fewtrell** (University of Bristol) *"Evaluating the effect of scale in flood inundation modelling in urban environments"*
- **Neil Mullinger** (Lancaster University) *"Radon in Chalk streams: spatial and temporal variation of groundwater sources"*
- **Nick Riess** (University of Sheffield) *"Assessing the nitrogen attenuation capacity of a hyporheic zone in a lowland river catchment"*
- **Clare Deasy** (University of Sheffield) *"Multi-scale hydrology, sediment and phosphorus dynamics of small agricultural catchments"*

After the presentations, the audience voted for the best presentation of the day and Clare Deasy (Sheffield) was awarded the BHS Postgraduate Dissertation prize for her outstanding paper, which is summarised below. Rod Hawnt presented Clare with the prize of £200 on behalf of BHS.

At the end of the conference, we returned to this year's topic: *"Questioning existing hydrological concepts"*. The audience was split into breakout discussion groups to agree on hydrological concepts that should be tackled next, or the next major steps that would advance the science of hydrology further. Given the very different backgrounds of the delegates, it was no surprise that a diverse range of topics was subsequently discussed.

Two important PhD related issues were raised that everybody seemed to agree on:

- For fieldwork-related hydrology PhDs, starting at the beginning of the academic year is a disadvantage, because this date coincides with the beginning of the hydrological field season. Since preparatory work (literature review, planning of field experiments, installation of field equipment, etc.) has to be done first, this usually leads to missing the first field season (or at least to the collection of lower quality data). Funding bodies and universities need to be persuaded to make flexible PhD start dates easier.
- Many PhD students in hydrology spend large amounts of their time going through a trial and error procedure to sort out their fieldwork. Attending a generic hydrology field course (hydrometry, water quality sampling, etc.) at the beginning of their career would speed up this process for new PhD students. Such a course could run in cooperation with private partners experienced in this type of training and might include techniques to quantify errors/uncertainties in measured data.

Responding on behalf of the Society, Rod Hawnt said he would take up these two important issues at the Main Committee. Rod closed the event by thanking the organisers **Daniel Kaeser** and **Tobias Krueger** for their efforts in putting together such an excellent Symposium. He congratulated all the presenters on the quality of their papers and the high standard of the presentations.

The next symposium will take place in Newcastle in June. The BHS committee agreed that this and future events will be known as the **Peter Wolf Young Hydrologists Symposium**. The name change acknowledges the generous support given to young BHS members by Professor Wolf, who was BHS President from 1987 to 1989, and reflects the intention that practising hydrologists in industry and government will participate alongside post-graduate students.

Multi-scale hydrology, sediment and phosphorus dynamics of small agricultural catchments — *Clare Deasy (University of Sheffield)*

Phosphorus (P) in agricultural soils is of particular concern as a source of diffuse pollution, due to its role as a limiting growth factor in many fluvial and lacustrine systems.

Many agricultural soils have high P concentrations as a result of high application rates to increase crop productivity. Phosphorus present in soil can be transferred from land to water as dissolved or particulate P bound to sediments, where hydrology acts as the driver for the transfer.

Within diffuse pollution studies, the focus on traditional monitoring scales, usually the plot and catchment, has led to a lack of intermediate scale process understanding. Areas of uncertainty include: how data changes with scale of observation, how different scales of observation are linked, and whether data can be transferred across scales.

This last point is especially important as diffuse pollution models — essential tools with which to make predictions about the impact of changes in climate and land use on water quality — require appropriate scale data for calibration and validation.

The aim of this research was to generate a dataset which could be used to consider these scale questions in relation to phosphorus transfer. Field monitoring was carried out over two hydrological years at the ADAS Rosemaund experimental farm in Herefordshire.

A number of spatial scales were monitored, from a 60-m-long hillslope patch to a 30-ha first-order catchment, through a combination of continuous monitoring for flow and turbidity and event-based sampling for hillslope flow and for P and suspended sediment (SS).

The talk presented an overview of the data, and the data for the largest event monitored was shown and discussed in detail. The data are being used to generate hydrological, SS and P characteristics from which comparisons of behaviour at different scales of observation can be made. The characteristics will then be used to explore and identify significant relationships.

Initial results suggest that there are complex responses and behaviour both between scales of observation and between events. In hydrological terms, infiltration, drainflow and storage are the most important processes in the catchment, but very high SS concentrations of up to 12 $g\,l^{-1}$ in surface runoff from the hillslope mean that this is an important source of sediment delivered to the catchment outlet.

Travel grants available

Travel grants are available to help BHS members whose travel expenses are not met by an employer to attend scientific meetings. The amount will depend on the nature and location of the meeting and the case put forward.

Grants are mainly intended to help younger members, but are open to all members, especially if you have not had a grant before. Successful applicants will be expected to write a short report for *Circulation*.

The Exeter Fund, administered by the Society, offers grants to British hydrologists to take part in IAHS / IUGG events.

To apply, use the form at *www.hydrology.org.uk/about_awards.htm* or contact **Peter Ede**, Mott MacDonald Group, Demeter House, Station Road, Cambridge, CB1 2RS *(tel 01223 463690, email peter.ede@mottmac.com)*.

Technical Secretary appointed



I am pleased to confirm the appointment (with immediate effect) of **Celia Kirby** as Technical Secretary to the Main Committee, in effect BHS's first paid official. Celia was a founder member of the Society and editor of *Circulation*, and is the longest-serving BHS Committee member, and an Honorary Life Member of BHS.

In her capacity as Technical Secretary, Celia will still be a member co-opted onto the Main Committee, but will effectively give up her place on the Communications sub-committee, since in the future she will be working for all sub-committees from time to time. She will work between one and two days per week on BHS business and her tasks and priorities will be managed by myself as President.

One of her first tasks is to assist Peter Ede and the Membership and Training sub-committee to prepare the feasibility study for Chartered Hydrologists status. She will also begin to plan the next International Conference, which is proposed as a jointly organised conference with the IACHAWR committee to incorporate the 8th International Weather Radar Symposium, as agreed at the last committee meeting. Our warmest congratulations to Celia on her appointment and we look forward to working with her in the future.

Rod Hawnt, President

Climate variability and change — hydrological impacts

Impressions of the Fifth FRIEND World Conference Havana, Cuba November 2006

I find that sending abstracts to conferences can be far too 'easy' and casual: it is not very demanding time-wise and does not require a firm commitment to attend. When I initially sent my abstract for consideration, I knew very little about FRIEND (Flow Regimes from International Experimental and Network Data), but I was attracted to the fact that *somewhere* there was data and knowledge sharing, and I felt that being a global network it would include Southeast Asia (the location of my research).

However, more than a year later, the event has taken place, and now I know more about FRIEND, I have a published article in the IAHS proceedings (publication No. 308) and have given my first talk at an international scientific gathering.

It would be too lengthy to summarise all the many different talks that took place at the conference, so I will highlight only some, starting with the two thought-provoking talks within the introductory plenary session: **Alan Gustard**, with his summary of FRIEND's achievements and opportunities, and **Trevor Daniell**, reflecting on the dilemmas encountered by the water resources modeller.

From Alan's talk I learnt that FRIEND is actually an ongoing open project with open objectives, with anybody welcome to join. After outlining the many achievements of FRIEND, he went on to discuss links and overlaps with HELP (Hydrology for the Environment, Life and Policy) and PUB (Prediction in Ungauged Basins). He encouraged co-operation amongst international initiatives, pointing out that they should be simplified and rationalised, because researchers are only likely to have resources to dedicate themselves to one international initiative at a time.

Trevor, on the other hand, focused on the water crisis arising from an increasing population and the different scales and users affected by it, with examples from Australia and New Zealand. He urged modellers to consider catchment homogeneity (or rather the lack of it), non-stationarity and the need for a new way of thinking and more data collection and analysis.

The plenary session then gave way to parallel sessions around four main themes: data, hydrological extremes, hydro-climatology and ecosystems. I would like to mention a few relevant talks to my own research:

J. O. Adegoke spoke about the importance of land surface forcing on lower atmospheric processes in a wide variety of land-use change settings, with ongoing work to improve input variables for coupled land-atmosphere models.

Christel Prudhomme (Centre for Ecology & Hydrology, UK) focused on the increasing need for scientists to answer questions on climate change. She showed how three example GCMs fare against natural variability and downscaling uncertainty when compared against three catchments in Scotland.

Rudi Drigo gave an overview of the varied and complex land use changes taking place in tropical forest regions, even though deforestation is the main one being studied. Statistics, based on the FAO Forest Resources Assessment and pan-tropical remote sensing survey, reveal an ongoing negative trend towards more humid areas, Asia showing the highest rate.

Overall I found the conference very interesting and inspiring. As a PhD student, it has given me a much needed overview on communicating science, both from the point of view of preparing the presentation and from the talking that goes with it. After listening to more experienced people discussing their work, I know I still have a long way to go.

I would like to thank BHS, the Royal Meteorological Society and the Lancaster University Faculty of Science and Technology for making it possible for me to attend. I would also like to thank the local conference organisers for their warm welcome.

Maria A. Solera García
PhD student, Lancaster University

The FRIEND conference was well-attended from Britain and a further report is being prepared for the next issue.

Fluorescence and the water sciences: novel techniques, new applications

One-day conference
University of Birmingham
11 October 2006

The first one-day conference sponsored by the Fluorescence for the Water Sciences Network was held in October 2006, co-sponsored by BHS, with seven oral and nine poster presentations on a wide range of themes.

Naomi Hudson (Birmingham) began the morning session speaking on *"the effect of light on temporal changes in river organic matter"*, explaining a series of laboratory experiments investigating natural organic matter fluorescence variations over time under a variety of environmental conditions.

Pam Naden (CEH) described a large project investigating *"fluorescent tracing of slurry to headwater streams"*, where intrinsic slurry fluorescence was one of just several fingerprints being used to trace diffuse slurry pollution.

In contrast, **Stuart Khan** (University of New South Wales) looked at *"fluorescence identification of anthropogenic substances in recycled water"*, showing how the intrinsic fluorescence properties of recycled water could be used in water quality applications.

Many posters were exhibited over an extended lunch break, covering a wide variety of new applications from groundwaters to SuDS to nanoparticles. **Jon Bridge** (Sheffield) used fluorescence imaging in groundwater contamination studies (*"ultra-violet fluorescence imaging at millimetre-decimetre scales – opening the 'black-box' of contaminant transport studies"*). **Sue Cumberland** (Birmingham) showed how *"the freshwater dissolved organic matter fluorescence – total organic carbon relationship"* could be used to understand natural organic matter source and processing.

Anna de Momi (Birmingham) demonstrated *"understanding the behaviour of natural aquatic nanocolloids during SPLITT separation using atomic force microscopy (AFM) and 3-D excitation-emission matrix fluorescence (EEM)"*. **Dan Lapworth** (BGS) exhibited a poster to explain *"a fluorescence study of groundwater-surface water processes in a chalk catchment in south east England"*.

Ruixia Lui (Birmingham) showed the *"fluorescence characterization of freshwater colloidal and dissolved organic matter derived from cross flow filtration"* and **Jonathan Chinnock** (Birmingham) covered *"fluorescence applications within sustainable drainage systems (SuDS)"*.

A poster from **Naomi Hudson** (Birmingham) presented *"tryptophan-like fluorescence as an indicator of biodegradable organic load in water"* and a **Adriana Manciulea** (Birmingham) looked at how fluorescence can help us understand the *"interactions of ferric hydroxide nanoparticles and natural nanoparticles"*.

Four presentations after lunch covered wastewater, microbial fluorescence and groundwater contamination. **Darren Reynolds** (University of the West of England) spoke on *"fluorescence and the biodegradability of wastewaters"*, investigating the fluorescence BOD and COD relationships. **Sarah Elliott** (Thermo Electron) covered a wide range of her PhD work on *"microbial fluorescence signatures in aquatic systems"*, involving both microbial cultures and urban rivers.

Andy Baker (Birmingham) presented new results on the *"fluorescence characterisation of wastewater quality through a treatment works"*, highlighting how fluorescence might be used in process control applications. Finally, **Dan Lapworth** (BGS) spoke about *"using fluorescence to investigate groundwater movement and contaminant transport in chalk and sandstone aquifers of the UK"*, giving details of several intrinsic fluorescence applications in tracing anthropogenic groundwater contamination.

Andy Baker
Birmingham University

BHS Student Awards

We are pleased to announce the results of this year's BHS Student Awards. In order to raise the status of hydrological education in Britain, as well as to encourage hydrological study among undergraduates in civil engineering, environmental management and sciences and geography, the Society offers these awards to undergraduate students who have demonstrated excellence in the field by exhibiting personal initiative and innovation in research/design projects in hydrology.

This year we had some excellent submissions from universities around the UK, and the quality was so high that we have awarded a winner and two runners-up prizes.

Congratulations to **Adam Driscoll** from the Department of Geography, University of Sheffield, for his winning dissertation *"Flood Estimation for LEDCs using an IfSAR DEM and a simple Flood Propagation Model"*. He receives an engraved trophy, plus a certificate and a cheque for £400.

Congratulations also to the runners up, **Christopher Rimmer** from the Department of Geography, Cambridge University, for his dissertation on *"The changing climate of Swiss hydroelectric power production: an analysis of the Haut Glacier d'Arolla meltwater discharge characteristics"* and **Richard Robinson** of the School of Geography, Earth and Environmental Sciences, University of Birmingham, for *"The inter-relationship between three-dimensional flow structure, channel plan form, bed topography and sediment distribution"*. They will shortly be receiving certificates and cheques for £200 each.

We hope to continue to receive such high quality pieces of research work in next year's competition.

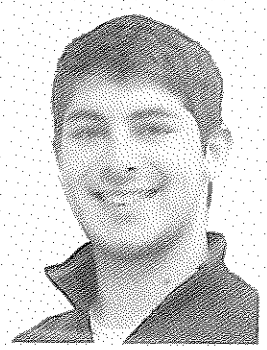
Hayley Fowler
BHS Hon Secretary

Abstract of Adam's dissertation

Flooding represents a global challenge to economic and social development, with less economically developed countries (LEDCs) suffering the greatest losses. Flood estimation describes the attempt to predict where and by how much flooding will affect an area, often with most of the more economically developed countries (MEDCs) spending an ever increasing amount on more technical and data intensive prediction systems.

This project is a first step in attempting to scale back the complexity of these systems in order that they better meet the needs of LEDCs. A specification of low cost, low skill and low cost data input was set and a simple methodology determined. Two sites in the UK were chosen to test this method: a section of the Rivers Wye and Derwent in Derbyshire, and the River Stour in Warwickshire.

Interferometric Synthetic Aperture Radar (IfSAR) was used for a digital elevation model (DEM), with Shuttle Radar Topography Mission (SRTM)



Adam Driscoll

data seen as the most cost effective source. The SRTM was found to compare favourably with a higher resolution Light Detecting And Ranging (LiDAR) dataset, indicating that its use is unlikely to be detrimental to prediction accuracy.

A recent ArcView extension entitled 'buffer-by-rise' was used as the flood propagation model. It, however, proved less useful because when the accuracy of its predictions were tested: using 1-in-100-year Environment Agency flood outlines and a digitised overlay of flooding created from video evidence, the simple propagation technique was found to over-estimate the extent of flooding quite significantly.

New CD-ROM

Version 2.0 of the FEH CD-ROM has been released by the Centre for Ecology and Hydrology. The CD accompanies the five-volume *Flood Estimation Handbook*, published by CEH Wallingford. Further information can be found on the FEH website at *www.ceh.ac.uk/feh*.

Water prize for Howard Wheater

Former BHS President **Professor Howard Wheater** travelled to Saudi Arabia last November to receive the Prince Sultan bin Abdulaziz International Water Prize for his work on water resources management in arid and semi-arid areas. Prince Sultan established the prize in 2004 to highlight the importance of water and to recognise contributions to research and practice in the water field.

Howard was nominated by BHS for his contributions to the hydrology of arid areas over some 25 years. These include improved understanding of hydrological processes in arid areas, and the development of modelling tools for flood, water resource and water quality management. He has worked on projects throughout the Middle East, including the first flood study of the Sultanate of Oman in 1981, a major representative basins water resources research programme in the South West of Saudi Arabia in the 1980s, and a study of recharge management in Oman in the 1990s.

Howard helped to found the UNESCO Wadi Hydrology programme for the Arab Region, and currently co-chairs UNESCO's G-WADI global programme for water resources management in arid and semi arid regions (*www.g-wadi.org*). He was invited to give a keynote speech to the 2003 Kyoto World Water Summit on water resources management in drylands, and he is a consultant to the State of Nevada on hydrological aspects of radioactive waste.

Desalination — is it the answer?

BHS South East Section meeting
ICE, London
18 January 2007

Increasing pressure on water resources is leading to an increased need to develop more innovative water resource solutions in various parts of the world. This pressure presents a particular challenge for the South East of England where even with a strong focus on demand management there will be a need for new water resources in the future.

As part of the Ofwat Asset Management Process (AMP 4), a considerable number of water companies are considering desalination as an option for resource development.

Speakers from Thames Water discussed the challenges, viability and sustainability of desalination as an answer to future water resource demands and detailed experiences to date from an international perspective and the Thames Gateway Water Treatment Plant case study.

Brian Moore (Process and Commissioning Manager, Thames Water) gave an overview of desalination technologies, covering the issues of raw water abstraction and waste disposal, the cost implications of the various technologies and the installed capacity, both internationally and regionally.

The two main desalination technologies are thermal desalination and membrane desalination. Thermal desalination is well established, especially in the Middle East, and is based on evaporating seawater and condensing the steam. It is energy and capital intensive and therefore a more efficient technology needed to be developed.

Membrane desalination or reverse osmosis has been developing over the last 20 to 25 years and improvements in the technology have led to reducing energy consumption and lower operating and capital costs. The energy requirements for reverse osmosis technology are not as high as current perception. Examples of these plants can be found in Spain and the USA. Globally, each of the technologies has 50% of the desalination contracted capacity during the last five years.

In reverse osmosis technology, the feed water is passed through semi-permeable membranes to produce water with a lower salt content. The concentrated brine waste requires disposal. The key stages are raw water abstraction (from groundwater, surface water, seawater and effluent), pre-treatment (including coagulation, sedimentation, filtration, dosing, etc.), reverse osmosis and post treatment (chemical treatment). One of the biggest operational challenges with this technology is pre-treating the feed water efficiently to prevent fouling of the reverse osmosis membranes.

Reductions in the energy requirements of reverse osmosis have occurred through improvements in membrane technology to produce lower pressure membranes and through advances in energy technology to recover the energy of the high pressure reject (brine) stream.

Raw water abstraction for reverse osmosis desalination plants can occur in a number of ways, particularly open intakes, vertical boreholes and horizontal boreholes.

Each of these has advantages and disadvantages. Open intakes can have issues with fish entrainment and the organic content of the abstracted water (dependent on depth and light penetration). Typically these can be both onshore and offshore and can be combined with power station cooling water intakes. The borehole systems produce varying raw water quality and yields dependent on the technology used.

As well as the issues with the membranes in reverse osmosis, the disposal of the brine is an important factor. It is typically discharged to the sea, sometimes following dilution with seawater, cooling water from power stations or effluent water discharged from sewage treatment works. Brine from brackish water desalination is typically discharged to surface water, sewers, evaporation ponds, thermal treatment or deep well injection.

Globally, there has been a large increase in the amount of desalination since 1965. There are more than 12,000 plants with a total capacity of over 40,000 Ml d^{-1}. Most involve seawater desalination. The Middle East has the greatest installed capacity, while Spain is the leader in Europe.

The second presentation was by **Carl Pelling** (Hydrologist, Thames Water) who detailed a specific UK case study. Carl has been involved in the Thames Gateway Water Treatment Plant and coordinated the Environmental Impact Assessment (EIA) for this Thames Water proposal.

The proposed site is in East London at the Beckton Waste Water Treatment Works, with a capacity of 150 Ml d^{-1}. The full EIA for the plant and pipeline was submitted in June 2004 and a public enquiry was held in May and June 2006: a decision is expected sometime in 2007.

Thames Water identified a shortfall in its short- to medium-term supply and demand balance of approximately 150 Ml d^{-1}. This, coupled with rising population and demand for water, predicted climate change and increased drought risk, sustainability reductions and leakage issues all backed up the need for a new water resource in the London area.

Desalination was found to be the only practical option that would meet regulatory deadlines within the short time needed. They propose to use a sustainable raw water source that is viable even in times of drought, thus reducing development pressure on scarce freshwater sources.

The proposed plant will treat moderately brackish water from the Thames Tideway using a four-stage reverse osmosis process. At the peak output it will abstract 180 Ml d^{-1} of brackish water to provide 150 Ml d^{-1} of potable water, enough to supply 400,000 households.

Beckton WWTW was chosen as the best location. It had the lowest salinity of all the short-listed sites, thus requiring less treatment and lower energy consumption. The site is closest to the area of supply and therefore would need only a short pipeline. The area is a brownfield site already occupied by the sewage treatment works and there are few environmental issues.

As part of the initial planning and EIA, a number of hydrological considerations were apparent when looking at the design of the plant. The timing of the abstraction was important to optimise energy use, pre-treatment requirements and ecological factors. The preferred approach was to abstract before low tide to minimise the abstraction of Beckton WWTW effluent. This would also use the greatest period of fluvial flow and minimise salinity and solid concentrations. Fish entrainment was a key ecological consideration and the Environment Agency would require adequate screens and deflectors as well as post-commissioning monitoring.

Pre-treatment issues include the high concentration of suspended solids in the water abstracted from the Tideway. There is therefore a need for intensive pre-treatment processing.

Important discharge issues include the high salinity of the waste water and disposal of solid waste from pre-treatment. To maximise dilution of the waste water, the preferred approach is to mix the reject water with the effluent stream from Beckton WWTW before discharge to the tidal area.

This would be the most sustainable option, requiring less energy and having less impact than treating on site and sending to landfill. As part of the EIA, a comprehensive ecological study was undertaken to assess any potential impacts: no significant issues were found. The dispersion of solid waste and brine waste was modelled.

The meeting gave an insight into the development of desalination technology with respect to the UK water industry. The two presentations proved that desalination is currently an important and viable option for water resource development.

Helen Procter
Secretary, BHS South East Section

New members

A warm welcome to the following new members of the Society. We hope they will play an active part in BHS and contribute occasionally to *Circulation*: we always welcome news and views from members, old and new.

Dr Alona Armstrong	University of Leeds
Dr Roger E Baker	Environment Agency, Caversham
Dr Helen Bennion	University College London
Magdalena Z Bieroza	University of Birmingham
Dr Hugo Bisceglia	Independent, Argentina
Patrick A Bryne	Loughborough University
Emily Carpenter	Mott MacDonald, Cambridge
Eleanor L Charles	University of Newcastle upon Tyne
Lisa M Cunningham	Environment Agency, Leicester
Erling N Dalen	University of Leeds
Heather Eadie	West Coast Energy Ltd, Edinburgh
Kerry L Evans	Environment Agency, Worthing
Dr Chris A Extence	Environment Agency, Spalding
Dr Robin L Hall	Independent Consultant, Chipping Norton, Oxon
Suzanne Hartley	University of Wales, Aberystwyth
Laura Herrington	Capita Symonds, East Grinstead
Lucy Huckson	Scott Wilson, Leeds
James P Johnson	Waterman Civils, Solihull
Alan Jones	University of Edinburgh
Daniel H Kaeser	Lancaster University
Lesley A Knowles	Environment Agency, Solihull
Michael C Law	Westwood Services Ltd, Tadcaster
Nikki Lloyd	University of Wales, Aberystwyth
Steven D McAleer	Westwood Services Ltd, Newcastle
Robert McSweeney	Atkins Water, Peterborough
Glen A Meadows	Environment Agency, Wallingford
Carolyn F Mills	University of Newcastle upon Tyne
Babak Mirshani	Imperial College London
Andrew W Moore	Arup, Leeds
Miles D Morgan	Environment Agency, Hatfield
Eugene Ngwenya	White Young Green Co., Leeds
Ian Pattison	Durham University, Stockton on Tees
Dr Colin Pitts	University of Leeds
Owen T Pryce	Lancaster University
Dupe N Saka	Lancaster University
Dr Marie-Laurie Segond	Imperial College London
Linda Speight	University of Newcastle upon Tyne
James Thomas	University of Newcastle upon Tyne
Katie A Woodhead	URS Corporation, London
Wan Yusoff	Lancaster University

President's Piece

There are some significant developments to report, which I feel represent real progress for BHS as a learned Society.



Just before Christmas we recorded the 1000th member to join the Society. The Main Committee decided to mark this milestone with a presentation, and **Laura Hetherington**, employed by Capita Symonds, was the lucky recipient of a certificate and an engraved silver bowl, which I presented to her during the meeting on 8th February.

Following the advert in the last edition of *Circulation*, I am pleased to announce that **Celia Kirby** has been appointed as our new part-time Technical Secretary (see page 3). I am delighted that Celia will continue to be on hand to offer her experience and advice to help the elected officers with an ever increasing workload.

The results of the recent members' questionnaire showed a strong demand for Chartered Hydrologist status. **Peter Ede** and the Membership and Training sub-committee are continuing to work on a feasibility study, assisted by our new Technical Secretary. One of their main tasks is to outline the competencies expected of a professional hydrologist.

Exploratory meetings have also been held with ICE and CIWEM and dialogue will continue with them and other institutions that might help BHS with the administration of Chartered status applications. We are seeking support from major employers, such as the Environment Agency and SEPA, to determine whether they see benefits for better training, development and retention of their staff.

We plan to bring a recommendation to the AGM in September about whether to apply to the Privy Council for Chartered Hydrologist Status.

BHS has been approached by the Editor of the *Nordic Hydrology* journal inviting BHS to participate in sharing editorial duties, as described in Frank Farquharson's article. The Committee has accepted the offer in principle, subject to signing a contract with the publishers.

As I finish writing this piece, with drought worries apparently over and a recent spate of flood warnings now subsided, we are experiencing the biggest snowfall event in many years. Flood forecasting and aquifer recharge estimation have suddenly got a lot more complicated with snowmelt in the equation — the hydrologist's job is never dull!

Rod Hawott

New journal venture for BHS

Some BHS members have long wanted the society to have its own journal, publishing scientific papers in hydrology and results of innovative applied studies. The Nordic Association for Hydrology (NHF) have produced a quarterly journal, *Nordic Hydrology*, since 1970 (*http://www2.er.dtu.dk/NordicHydrology/*): it has been published by IWA Publishing since 2004 both in print and electronically (*http://www.iwaponline.com/nh/toc.htm*). The full annual subscription is currently £212.

However, *Nordic Hydrology* has for many years included papers on issues well beyond the Nordic region, and NHF and IWAP believe that the title no longer describes the content and nature of the journal. They intend to change its name to reflect its wider content, and hope to expand to six editions per year. To achieve this they invited BHS to join NHF in producing this enlarged journal: it would benefit from *Nordic Hydrology*'s current citation index, and still be published by IWA Publishing.

The new journal would be renamed *"Hydrology Research"* (to fit in with other IWAP journals such as *Water Research*) and published from 2008. All financial risks will be borne by IWAP. The cost to BHS members would be about £85 for the print version or £68 for the online version. Subscription would be optional: there is no intention that all BHS members must subscribe.

The joint editorial panel would have members of both NHF and BHS, led by one editor from each organisation. The current editor, Professor Dan Rosbjerg, would continue for at least the next year or two. BHS is now seeking a co-editor; we invite suitable applicants to apply to Frank Farquharson *(see right)*.

Opportunities

WBM BMT

Flooding and Environmental Business Manager

WBM (developer and distributor of the TUFLOW 2D/1D hydraulic modelling package and a member of the BMT group of companies) is seeking a UK Business Unit Manager. This is an exciting and rare position, with considerable opportunities that will allow you to build a technical team that fits your professional ambitions and the needs of the local market. The initial focus of activity will be within the UK, however, the position will eventually see your UK operations working with other BMT groups to advance TUFLOW and our consulting services worldwide.

The remuneration package for this candidate will include a competitive salary, contributory final salary pension scheme, company profit share and also a group wide profit share.

For further details, visit http://www.wbm-pl.com.au/05_opportunities/jobs.htm or www.bmt.org/careers.asp

Joint-editor of journal *"Hydrology Research"*

BHS hopes to begin collaboration with the Nordic Association for Hydrology in production of a new journal, *Hydrology Research*, successor to the current *Nordic Hydrology*. BHS is inviting applications from interested candidates for the role of joint-editor of this new journal, working in collaboration with the current editor of *Nordic Hydrology*.

We are seeking someone with a research background and an acknowledged reputation within the international hydrological community. The editor would need to demonstrate a good record of scientific publications, and must have been involved in refereeing journal papers over a number of years.

The work will involve liaison with the joint-editor (currently based in Denmark) and an editorial panel (to be appointed). The post will attract a modest annual stipend as remuneration for what we believe will be a challenging role.

Interested applicants should send a CV and covering letter by **16th March** to Frank Farquharson, Centre for Ecology & Hydrology, Maclean Building, Benson Lane, Crowmarsh Gifford, Wallingford, OX10 8BB.

Copy deadline for *Circulation* No. 93 5th April 2007

Courses

Imperial College London

Department of Civil and Environmental Engineering, South Kensington Campus, London

Hydrology MSc courses:

Hydrology for Environmental Management *

Hydrology and Business Studies

Hydrology and Sustainable Development

These courses are designed for those who wish to change to a career in hydrology, or to develop specialist knowledge and skills to advance existing careers. We welcome applications both from new graduates and from experienced professionals.

The courses may be followed full-time (1 year) or part-time (over 2 or 3 years, e.g. on a day-release basis). Individual modules can be followed as part of CPD (the courses are accredited by the Institution of Civil Engineers).

Hydrology modules include:

- Hydrological processes
- Hydrogeology
- Hydroinformatics
- Fluid mechanics
- Hydrometry
- Meteorology and climate change
- Chemistry for hydrologists
- Stochastic hydrology
- Water resources management
- Irrigation
- Contaminated land
- Surface water quality modelling
- Groundwater flow and quality
- Flood hydrology
- Rainfall-runoff modelling
- Water, wastes and health in developing countries
- Design projects

The courses also include a 5-month research project.

* On the HEM option, 5 NERC Studentships are available for eligible UK and EU applicants.

Full information is available on: **www.imperial.ac.uk/ewre**

Meetings

Peter Wolf Young Hydrologists Symposium
University of Newcastle upon Tyne
28–29 June 2007

The Young Hydrologists Symposium, the successor to the BHS Postgraduate Symposium, is for practising hydrologists at the start of their careers and postgraduate researchers at university.

The costs are kept low and the symposium is an excellent opportunity to interchange ideas, improve your presentation skills, meet other young hydrologists and discuss current issues in a friendly atmosphere.

There is a BHS prize for the best presentation at the symposium.

For full information please contact Mark Wilkinson *(tel 0191 222 8599, email m.e.wilkinson@ncl.ac.uk).*

Diary

28th February 2007
Scottish Hydrological Group meeting
"Wetland systems to control urban runoff"
Venue: Edinburgh University
Time: 18.00
Contact: Michael Cranston *(tel 01738 627989, email michael.cranston@sepa.org.uk)*

1st March 2007
BHS National one-day meeting
"Underpinning science for the Water Framework Directive" — focusing on the REBECCA project (relationships between ecological and chemical status of surface waters)
Venue: ICE, 1 Great George St, London
Contact: Mike Dunbar, CEH *(tel 01491 692403, email mdu@ceh.ac.uk)*

21st March 2007
BHS South West Section meeting
"Water resources management"
Venue: Lecture Room 004, Harrison Building, University of Exeter
Time: 14:00
Contact: Murray Dale *(tel 01392 444252, email dalem@halcrow.com)*

28th March 2007
Scottish Hydrological Group meeting
"Fluvial geomorphology for EIA and flood defence work"
Venue: Glasgow University
Time: 18.00
Contact: Michael Cranston *(see above)*

29th March 2007
ICE Wales and EPSRC conference
"Flood risk management — recent developments"
Venue: County Hall, Cardiff Bay
Time: 09.15 – 16.20
Contact: Institution of Civil Engineers, Suite 2, Bay Chambers, West Bute Street, Cardiff CF10 5BB *(tel 029 2063 0561, fax 029 2063 0666)*

15th – 20th April 2007
EGU General Assembly
Venue: Vienna
Contact: *egu.meetings@copernicus.org, http://meetings.copernicus.org/egu2007/*

18th April 2007
BHS National meeting with the British Ecological Society
"Water resources and conservation management: recent developments in hydroecology"
Venue: ICE, 1 Great George St, London
Contact: Katie Fawcett *(tel 01792 325622, email katie.fawcett@environment-agency.wales.gov.uk)*

18th – 19th April 2007
RRC 8th Annual Network Conference
Venue: Chester, plus site visit on 20th
Contact: Alice Fellick *(tel 01234 752979, email rrc@therrc.co.uk, http://www.therrc.co.uk/conferences.htm)*

25th April 2007
BHS South East Section meeting
"Water for growth in the South East"
Venue: ICE, 1 Great George St, London
Time: 18.30
Contact: Joe Pearce *(tel 01903 832082, joe.pearce@environment-agency.gov.uk)*

5th June 2007
BHS National meeting
"How can we trust models?"
Venue: CEH Wallingford
Contact: Gareth Old, CEH *(tel 01491 692486, email gho@ceh.ac.uk)*

28th – 29th June 2007
Peter Wolf Young Hydrologists Symposium — conference & field visits
Venue: Newcastle University
Contact: Mark Wilkinson *(tel 0191 222 8599, email m.e.wilkinson@ncl.ac.uk)*

1st July 2007
5th Interceltic Hydrology Colloquium
Venue: Dundee, Scotland
Contact: Alan Werrity *(tel 01382 385084, email a.werrity@dundee.ac.uk)* or Andrew Black *(a.z.black@dundee.ac.uk)*

2nd – 13th July 2007
XXIVth IUGG General Assembly
"Earth: our changing planet" including an IAHS scientific programme
Venue: Perugia, Italy
See *http://www.iugg2007perugia.it* and *http://www.iahs.info.*

4th July 2007
BHS South East Section meeting
"Water resources in the South East" — lunch followed by a site visit to Bewl Water reservoir in the High Weald
Contact: Helen Procter *(tel 01372 754201, email helen.procter@atkinsglobal.com)*