

# HydroEco´2011

3rd International Multidisciplinary Conference on

*Hydrology and Ecology:*

**Ecosystems, Groundwater and Surface Water**

**– Pressures and Options**

**2–5 May 2011, Vienna, Austria**

## CONFERENCE PROGRAMME

The conference is jointly convened by:

- Universität für Bodenkultur Wien (BOKU), University of Natural Resources and Applied Life Sciences, Vienna
- International Commission on Groundwater (ICGW), of the International Association of Hydrological Sciences (IAHS)
- Faculty of Science, Charles University, Prague, Czech Republic

**The conference was sponsored by UNESCO / IHP.**

**The conference organizers are also grateful for the support received from the Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management (Lebensministerium), City of Vienna (Stadt Wien), Water supply company of Vienna (Wiener Wasserwerke), and International Atomic Energy Agency (IAEA).**



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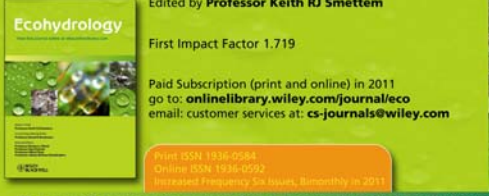
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The following sessions are distinguished:

**Session A** (oral and poster)

**Interactions between surface water, hyporheic zone, saturated and unsaturated groundwater**

*(oral, lecture hall A, Monday, 2 May, from 09:00 to 11:45)*

**Session B** (oral and poster)

**Connections between ecology and groundwater recharge and evapotranspiration**

*(oral, lecture hall A, Monday, 2 May, from 11:45 to 15:00)*

**Session C** (oral and poster)

**Plant-groundwater interactions**

*(oral, lecture hall A, Monday, 2 May, from 15:00 to 17:00)*

**Session D** (oral and poster)

**Links between hydrology and biogeochemistry in groundwater**

*(oral, lecture hall A, Tuesday, 3 May, from 08:30 to 12:15)*

**Session E** (oral and poster)

**Modelling surface-water-groundwater systems**

*(oral, lecture hall A, Tuesday, 3 May, from 14:00 to 16:45)*

**Session F** (oral and poster)

**Interactions between hydrology and ecology**

*(oral, lecture hall A, Wednesday, 4 May, from 08:30 to 17:00)*

**Session G** (oral and poster)

**Management, legal and regulatory issues**

*(oral, lecture hall A, Thursday, 5 May, from 14:15 to 15:15)*

**Session H** (oral and poster)

**Indicators of groundwater and surface water quality**

*(oral, lecture hall B, Tuesday, 3 May, from 14:00 to 15:30)*

**Session I** (posters only)

**Land use implications (including restoration and ecohydrology)**

**Session K** (posters only)

**Global change (human activity, natural changes): from noises to trends**

**Session S** (oral and poster)

**Special Session “Landscape versus local controls on water quality in small streams”**

*(oral, lecture hall A, Thursday, 5 May, from 08:30 to 14:15)*

**Session S-WFD** (oral only)

**Special Session “Upscaling from individual ecosystems to groundwater bodies in the light of Water Framework Directive implementation”**

*(oral, lecture hall B, Wednesday, 4 May, from 08:30 to 12:30)*

**Poster Session Block 1 (max. 40 posters)**

**Monday-Tuesday, 2-3 May, 17.00-18.30**

*Posters to be installed during the morning of Monday, 2 May.*

**Session A: Interactions between surface water, hyporheic zone, saturated and unsaturated groundwater**

**Session B: Connections between ecology and groundwater recharge and evapotranspiration**

**Session C: Plant-groundwater interactions**

**Session D: Links between hydrology and biogeochemistry in groundwater**

**Session E: Modelling surface-water-groundwater systems**

**Session H: Bio-indicators of groundwater and surface water quality**

**Poster Session Block 2 (max. 37 posters)**

**Wednesday-Thursday, 4-5 May, 17.00-18.30**

*Posters to be installed during the morning of Wednesday, 4 May.*

**Session F: Modelling interactions between hydrology and ecology**

**Session G: Management, legal and regulatory issues**

**Session I: Land use implications (including restoration and ecohydrology)**


**Session K: Global change (human activity, natural changes): from noises to trends**

**Session S: Special Session “Landscape versus local controls on water quality in small streams”**

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# HydroEco2011 Conference Programme

## Overview: Monday-Thursday, 2-5 May 2011

Sun 1 May									17.00-19.30 Registration
									18.00-20.00 Welcome, Get Together

Mon 2 May	8.30 - 9.00	9.00 - 10.00	10.00 - 10.30	10.30 - 12.30	12.30 - 14.00	14.00 - 15.30	15.30 - 16.00	16.00 - 17.00	17.00 - 18.30
	Open Ing	Session A	☉	Session A/B	☉	Session B/C	☉	Session C	Plenary visit to posters: beer, wine, soft drinks, snacks
	Posters on display for poster sessions block 1:								

Tue 3 May	8.30 - 10.00	10.00 - 10.30	10.30 - 12.30	12.30 - 14.00	14.00 - 15.30	15.30 - 16.00	16.00 - 16.45	19.30 - 22.30
	Session D	☉	Session D	☉	Session E	☉	Session E	Conference Dinner
	Poster session block 1: continuation till the afternoon coffee break							

Wed 4 May	8.30 - 10.00	10.00 - 10.30	10.30 - 12.30	12.30 - 14.00	14.00 - 15.30	15.30 - 16.00	16.00 - 17.00	17.00 - 18.30
	Session F	☉	Session F	☉	Session F	☉	Session F	Plenary visit to posters: beer, wine, soft drinks, snacks
	S-WFD Special		S-WFD Special					
Posters on display for poster sessions block 2:								

Thu 5 May	8.30 - 10.00	10.00 - 10.30	10.30 - 12.30	12.30 - 14.00	14.00 - 15.15	15.15 - 15.30
	Session S	☉	Session S	☉	Session S/G	Closure
	Poster session block 2: continuation					

Regular oral presentations: 15 minutes (suggested **11 min** + 4 min discussion/questions)

Invited oral presentations: 30 minutes (suggested **25 min** + 5 min discussion/questions)

☉ is coffee break

☉ is lunch

## Conference Programme

### Sunday, 1 May 2011

**Registration** at the venue (*BOKU University, Muthgasse 18, 1180 Vienna*), 17.00-19.30 hours

**Welcome, Get Together**, at the *BOKU University*, 18.00-20.00 hours

We kindly request you to register first before joining Welcome, Get Together.

### Monday, 2 May

**Registration**, from 7.30 hours

**Posters to be installed during the morning of Monday, 2 May.**

Authors of the entire day are requested to hand in their USB memory stick with oral presentation at the registration desk before 8.30 hours, or, preferably, Sunday afternoon-evening. Thank you!

#### Lecture hall A

#### Only plenary presentations during this entire day

##### Opening of the Conference

8.30-9.00 hours Welcome

Welcome on behalf of the BOKU University, Rector Dr. M. Gerzabek

Welcome on behalf of the Organizers, Hans-Peter Nachtnebel

Welcome on behalf of IAHS, Karel Kovar

##### Session A, Interactions between surface water, hyporheic zone, saturated and unsaturated groundwater

Chairpersons: Okke Batelaan (Belgium), Bertel Nilsson (Denmark), **chairs 1**

##### 09:00-09:30 S.Krause (invited):

Hot moments in cold spots multi-scale tracing of reactivity hotspots in hyporheic environments (abstract #244)

##### 09:30-10:00 J.H.Fleckenstein, C.Schmidt, S.Frei, S.Bartsch (invited):

Complex linkages between hydrological dynamics and biogeochemical processes in the near stream zone – new ways forward (abstract #194)

10:00-10:30 Coffee break

##### Session A, Interactions between surface water, hyporheic zone, saturated and unsaturated groundwater

Chairpersons: Okke Batelaan (Belgium), Bertel Nilsson (Denmark), **chairs 1**

##### 10:30-10:45 J.Durkota:

Benthic and hyporheic community composition: response to natural and anthropogenic disturbance (abstract #16)

10:45 - 11:00 C.Anibas, K.Buis, R.Verhoeven, P.Meire, O.Batelaan:



Groundwater-surface water interaction on reach scale using a transient thermal mapping approach (abstract #116)

11:00-11:15 P.S.Datta, S.Kumar:

Significance of O-18 and hydrochemical composition to characterize water dynamics in hyporheic zone of Yamuna river flood plains in Delhi Area (abstract #265)

11:15-11:30 M.Schafmeister, N.Thevs, S.Wittfoth:

Riparian ecosystems and groundwater recharge along the Tarim River, Xinjiang, China (abstract #318)

11:30-11:45 A.Folch, A.Menció, V.Galan, O.Astui, A.Pérez-Paricio, J.Mas-Pla:

Importance of groundwater flow systems in river baseflow and ecology in a Mediterranean catchment: Santa Coloma River (Catalonia, NE Spain) (abstract #191)

### **Session B, Connections between ecology and groundwater recharge and evapotranspiration**

Chairpersons: Jan Fleckenstein (Germany), Hans-Peter Nachtnebel (Austria), **chairs 2**

11:45-12:00 B.Chen, B.Zhang, L.Jing:

Hydrological modelling and uncertainty analysis to understand water balance of a wetland system under subarctic climate (abstract #44)

12:00-12:15 B.R.Voortman, R.P.Bartholomeus, J.P.M.Witte:

The future groundwater recharge: evapotranspiration response of natural vegetation to climate change (abstract #102)

12:15-12:30 M.Frandsen, O.Pedersen, B.Nilsson, P.Engesgaard: The effects of groundwater seepage on submerged freshwater plants (abstract #102)

12:30-14:00 Lunch

### **Session B, Connections between ecology and groundwater recharge and evapotranspiration**

Chairpersons: Jan Fleckenstein (Germany), Hans-Peter Nachtnebel (Austria), **chairs 2**

14:00-14:30 **O.Batelaan**, M.W.Lubczynski (**invited**):

Groundwater recharge and groundwater discharge: the ecological importance of speaking the same language (abstract #226)

14:30-14:45 P.Kalicz, Z.Gribovszki, A.Koppán: Evapotranspiration impact on sapflow and other hydrological phenomena (abstract #167)

14:45-15:00 M.Gökmen, Z.Win Naing, Z.Vekerdy, W.Verhoef, O.Batelaan:

Remote sensing estimates of evapotranspiration to analyze the groundwater influx and ecological water demand for a groundwater-dependent wetland (abstract #301)

### **Session C, Plant-groundwater interactions**

Chairpersons: Stefan Krause (United Kingdom), Sascha Oswald (Germany), **chairs 3**

15:00-15:15 R.Froend, M.Davies, W.Stock, K.Smettem, M.Martin, C.Robertson, D.Eamus:

Is sustainable superficial aquifer production possible in areas with vulnerable phreatophytic vegetation? A test case in Mediterranean Southwest Australia (abstract #27)

15:15-15:30 S.Regan, P.Johnston:

The role of groundwater in the degradation and restoration of raised bog ecosystems (abstract #75)

15:30-16:00 Coffee break

### **Session C, Plant-groundwater interactions**

Chairpersons: Stefan Krause (United Kingdom), Sascha Oswald (Germany), **chairs 3**

- 16:00-16:15 C.A.Rivera Villarreyes, G.Baroni, S.E.Oswald:  
Estimation of soil water content at intermediate field scale using cosmic-ray neutrons  
(abstract #121)
- 16:15-16:30 R.G.Hart, J.C.Labadz, D.P.Butcher, S.P.Godby, D.Topliss:  
The role of microtopography in the assessment of ecological condition on lowland raised  
mires of conservation importance (abstract #183)
- 16:30-16:45 E.Kubin, H.Ilvesniemi, T.Murto, J.Piispanen, O.Tarvainen, E.Tillman-Sutela, A.Tolvanen:  
Impacts of stump harvesting on nitrogen leaching and carbon flow in the boreal forest  
environment (abstract #205)
- 16:45-17:00 A.Curreli, C.Freeman, A.Taylor, R.Low, H.Wallace, M.Hollingham, C.Stratford,  
M.L.M.Jones:  
Hydrological controls on vegetation communities in UK dune slacks (abstract #313)

### **Poster Session Block 1, plenary visit to posters, 17.00-18.30 hours**

#### **Beer-wine-soft drinks-snacks**

*Posters to be installed during the morning of Monday, 2 May.*

**Monday-Tuesday, 2-3 May 2011, Poster session block 1 (maximum 40 posters)**

**Session A: Interactions between surface water, hyporheic zone, saturated and unsaturated groundwater**

**Session B: Connections between ecology and groundwater recharge and evapotranspiration**

**Session C: Plant-groundwater interactions**

**Session D: Links between hydrology and biogeochemistry in groundwater**

**Session E: Modelling surface-water-groundwater systems**

**Session H: Bio-indicators of groundwater and surface water quality**

## Tuesday, 3 May

Registration Desk open from 8.00 hours

**Poster session block 1 on display till end of day**

Authors of the entire day are requested to hand in their USB memory stick with oral presentation at the registration desk during Monday. Thank you!

### Lecture hall A

#### Plenary Presentation till 12:30

##### Session D, Links between hydrology and biogeochemistry in groundwater

Chairpersons: Kate Heppell (United Kingdom), Tetsuro Tsujimoto (Japan), **chairs 4**

08:30-08:45 L.Kondratyeva, E.M.Golubeva, V.V.Kulakov, O.Yu.Stukova:

Ecological aspects of the interaction of river and groundwaters in the lower Amur (abstract #52)

08:45-09:00 T.Vogt, M.Doring, M.Schirmer, O.A.Cirpka:

Riparian groundwater dynamics of temperature and oxygen in a restored river corridor at a losing Swiss peri-alpine river (abstract #109)

09:00-09:15 S.Peiffer, K.Hellige, W.Kurtz:

When hydrology meets chemistry - insights into the coupling between transport and reaction (abstract #180)

09:15-09:30 C.Stumpp, J.R.Lawrence, H.J.Hendry, P.Maloszewski:

Transport and bacterial interactions of three bacterial strains in saturated column experiments (abstract #55)

09:30-10:00 **B.Nilsson**, J.Kidmose, P.Engesgaard, M.Frandsen (**invited**):

Possible effects on long-term lake restoration from exchange of high P-loaded groundwater to a seepage lake (abstract #135)

10:00-10:30 Coffee break

##### Session D, Links between hydrology and biogeochemistry in groundwater

Chairpersons: Carl Christian Hoffmann (Denmark), Gilles Pinay (United Kingdom), **chairs 5**

10:30-11:00 **T.Tsujimoto (invited)**:

Structure and functions of river ecosystem - Role of subsurface flow in alternate sand bar (abstract # 258)

11:00-11:30 **C.Chr.Hoffmann**, M.Dahl, G.Blicher-Mathiesen (**invited**):

Biogeochemical processes along the groundwater flow line in a riparian wetland (abstract #284)

11:30-11:45 U.S.McKnight, J.J.Rasmussen, B.Kronvang, P.L.Bjerg, P.J.Binning:

Integrated assessment of the impact of TCE groundwater contamination to surface water ecosystems (abstract #182)

11:45-12:00 K.Waska, M.Lenczewski:

Hyperalkaline aquifers of Calumet wetlands (South Chicago, Illinois): Biodiversity and remediation study (abstract #202)

12:00-12:15 J.Křeček:

Recovery of headwater streams and reservoirs from acidification (abstract #253)

←→ 15 minutes time, free to use by session chairs

12:30-14:00 Lunch

**Lecture hall B**

**Session H, Indicators of groundwater and surface water quality**

Chairpersons: Josef Křeček (Czech Republic), Ray Froend (Australia), **chairs 6**

- 14:00-14:15 A.C.Schwendel, M.K.Joy, I.C.Fuller: A macroinvertebrate index to assess stream bed stability (abstract #89)
- 14:15-14:30 K.L.Korbel, R.Lim, G.C.Hose, P.J.Hancock, P.Serov: Variation of faunal assemblages in groundwater ecosystems impacted by agricultural landuse (abstract #124)
- 14:30-14:45 J.J.Rasmussen, A.Baatrup-Pedersen, S.E.Larsen, B.Kronvang: Local physical habitat quality cloud the effect of predicted pesticide runoff from agricultural land in Danish streams (abstract #152)
- 14:45-15:00 V.Minaya, M.M.McClain, O.Moog: Variations in benthic macroinvertebrate assemblages with physico-chemical characteristics in headwater (abstract #199)
- 15:00-15:15 M.Sinreich, P.Kozel: Attempt to verify Swiss objectives on groundwater ecology (abstract #283)
- 15:15-15:30 L.Tent: Restoration of habitat as essential factor for improved fauna populations - Long term experience on North German lowland brooks (abstract #299)

15:30-16:00 Coffee break

**Lecture hall A**

**Session E, Modelling surface-water-groundwater systems**

Chairpersons: Ed Sudicky (Canada), William Woessner (USA), **chairs 7**

- 14:00-14:30 **E.A.Sudicky**, J.Chen, Y.-J.Park, W.R.Peltier (**invited**): A Physically-based approach to assess the impact of climate change on Canadian water resources (abstract #311)
- 14:30-14:45 W.W.Woessner: Consequences of a poor conceptual model when predicting the response of the riparian water table position to stream restoration, Western Montana USA (abstract #24)
- 14:45-15:00 S.Frei, K.H.Knorr, S.Peiffer, J.H.Fleckenstein: Effects of micro-topography on runoff generation and residence times in a riparian wetland (abstract #100)
- 15:00-15:15 E.M.Adar, S.Masoth: The mixing cells modelling approach for identifying and quantifying hidden sources of industrial pollutants into rivers and shallow groundwater systems (abstract #128)
- 15:15-15:30 H.Montenegro: Evaluation of surface-subsurface interactions following an embankment Opening for the enhancement of stream-floodplain connectivity (abstract #195)

15:30-16:00 Coffee break

**Session E, Modelling surface-water-groundwater systems**

Chairpersons: Ed Sudicky (Canada), William Woessner (USA), **chairs 7**

- 16:00-16:15 Y.Sato, Y.Michihiro, Y.Suzuki, T.Kojiri: Developing integrated hydrological model for river ecosystem assessment (abstract #230)
- 16:15-16:30 P.P.Schot, D.Schnitzer, G.Oude Essink: Fresh-brackish groundwater interface response to hydro(eco)logical management in

	<p>the Naardermeer wetland, the Netherlands (abstract #260)</p> <p>16:30-16:45 M.C.Loinaz, H.Davidsen, P.Bauer-Gottwein, M.Butts: Modelling eco-hydrological impacts of temperature changes in a catchment (abstract #273)</p>
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## End of presentations of Tuesday, 3 May

### 19.30-22.30 Conference Dinner

The Conference Dinner will be held at:

Rathauskeller (inside the Vienna City Hall, Rathaus)

Entrance at Rathausplatz 1

1010 Vienna

The Rittersaal (in English: Knights Hall), one of the halls inside the Rathauskeller, will be open from 19:00 hours.

The dinner starts at 19:30 and will end at about 22:30 hours.



Entrance to the Rathauskeller



Rittersaal

Information about the location will be provided on registration.

## Wednesday, 4 May

Registration Desk open from 8.00 hours

### Posters to be installed during the morning of Wednesday, 4 May.

Authors of the entire day are requested to hand in their USB memory stick with oral presentation at the registration desk during Tuesday. Thank you!

### Parallel (in two lecture halls, A and B) till lunch, plenary during afternoon

Lecture hall B	Lecture hall A
<p><b>Session S-WFD, Special Session ‘Upscaling from individual ecosystems to groundwater bodies in the light of Water Framework Directive implementation’</b> Chairpersons: Michiel Zijp (The Netherlands)</p> <p>08:30-8:40 Philippe Quevauviller (abstract #373) Welcome</p> <p>08:40-09:00 <b>J.Grath, A.Scheidleder (invited):</b> Groundwater dependent terrestrial ecosystems within the European groundwater policy framework (abstract #328)</p> <p>09:00-09:15 Questions to panel members (M.Zijp) (Do you recognize problems mentioned by Johannes Grath? What is the biggest problem in implementation? etc.)</p> <p>09:15-09:30 K.Hinsby, S.Arkager, B.Kronvang, J.Windolf, T.O.Sonnenborg, R.Ejmaes: Groundwater threshold values derived for protection of associated aquatic ecosystems – selected examples from Denmark (abstract #145)</p> <p>09:30-09:45 M.Leroy, Ph.Orban, S.Brouyère, J.Gesels, J.Couturier, P.Jamin, S.Wildemeersch, P.Goderniaux, J.Derouane, A.Dassargues: Regional scale flow and transport modelling for the management of groundwater and surface water bodies in the framework of the EU Water Directive (abstract #92)</p> <p>09:45-10:00 Questions public/ panel (P.Quevauviller)</p> <p>10:00-10:30 Coffee break</p> <p><b>Session S-WFD, Special Session “Upscaling from individual ecosystems to groundwater bodies in the light of Water</b></p>	<p><b>Session F, Interactions between hydrology and ecology</b> Chairpersons: Christian Griebler (Germany), Brent Newman (Austria), <b>chairs 8</b></p> <p>08:30-08:45 K.Eng, D.M.Carlisle, D.M.Wolock: Ecologically relevant streamflow characteristics across the United States (abstract #31)</p> <p>08:45-09:00 M.Hayashi, G.van der Kamp: Eco-hydrology of Canadian prairie wetlands and management implications: Synthesis of a 40-year study (abstract #74)</p> <p>09:00-09:15 M.Pfaundler, Ch.Duebendorfer: Module Hydrology (HYDMOD): the Swiss method for assessing and classifying the state of the rivers’ flow regime (abstract #83)</p> <p>09:15-09:30 J.Lessard, D.Plew, M.Enright: Changes in reach-scale transient storage and benthic habitat due to macrophyte coverage in groundwater dominated lowland streams, Canterbury, New Zealand (abstract #84)</p> <p>09:30-10:00 <b>R.W.Harvey, D.W.Metge, A.Mohanram, X.Gao, J.Chorover (invited):</b> The surface-groundwater connection-effects of surface water contaminants upon bacterial transport and reentrainment within a sandy aquifer (abstract #122)</p> <p>10:00-10:30 Coffee break</p> <p><b>Session F, Interactions between hydrology and ecology</b> Chairpersons: Tomasz Okruszko (Poland), Boris Schröder (Germany), <b>chairs 9</b></p>

## Framework Directive implementation“

Chairpersons: Michiel Zijp (The Netherlands)

- 10:30-10:45 Questions to panel members (M.Zijp) (What do you think science should provide? What do you need from the scientific community? etc.)
- 10:45-11:00 S.Barber: Multi-scale approaches to the upscaling problem – determining ecosystem–groundwater interactions and allocating water for the environment with disjointed and sparse information and limited resources (abstract #125)
- 11:00-11:15 M.Whiteman, A.Skinner, G.Farr, A.Papaioannou, A.Coffey, L.Bellis, P.Jones, R.Low, A.Brooks: Investigation of diffuse groundwater chemical impacts on groundwater-dependent terrestrial ecosystems in England and Wales: Implications for WFD groundwater body classification and Programmes of Measures (abstract #240)
- 11:15-11:30 Discussion: do presentations fill a gap and which gaps are still open? (P.Quevauviller)
- 11:30-12:00 **B.Klöve (invited):** Hydroecological processes and functioning of groundwater dependent ecosystems (abstract #334)
- 12:00-12:15 Panels choice on who should be rewarded for his/her excellent and useful idea on implementation this part of the WFD.
- 12:15-12:30 Concluding remarks and goodbye (P.Quevauviller)

12:30-14:00 Lunch

In this hall, no lectures after 14:00

- 10:30-11:00 **Ch.Griebler**, H.Brielmann, K.Schreglmann, F.Ferraro, T.Lueders, S.Hahnlein,S.Schmidt, P.Blum, P.Bayer (**invited**): Effects of thermal energy usage on shallow groundwater ecosystems (abstract #144)
- 11:00-11:30 **B.D.Newman**, P.Aggarwal, L.Araguas-Araguas, M.Groening, T.Kurttas, L.Poeltenstein (**invited**): Using isotopes to understand coupled hydrological and biological processes (abstract #164)
- 11:30-11:45 P.Horchler, E.Mosner, M.Heuner, F.Konjuchow, J.Glaser, Ch.Ilg, M.Scholz: Changes of plant diversity in riverine grassland after extreme hydrological events on the Elbe floodplain (abstract #97)
- 11:45-12:00 L.van Schaik, J.Palm, J.Klaus, E.Zehe, B.Schröder: Relationships between earthworm abundance and preferential flow paths (abstract #98)
- 12:00-12:15 H.McKelvey, M.B.Singer, H.Piegay, R.Wilson, J.Riquier: Histories of local v. regional hydrology as recorded by tree ring isotopes and dendrochronology (abstract #104)
- 12:15-12:30 P.Kovář, F.Krovak: Nature close torrent control in Ore Mountains (abstract #261)

12:30-14:00 Lunch

## Plenary Presentation till 17:00

### Session F, Interactions between hydrology and ecology

Chairpersons: Ron Harvey (USA), Peter Horchler (Germany), **chairs 10**

- 14:00-14:30 **T.Okruszko**, H.Duel, M.Acreman, M.Grygoruk, M.Florke, Ch.Schneider (**invited**): Hydrological conditions of European wetlands – overview of current situation and future perspectives (abstract #277)
- 14:30- 15:00 **B.Schröder (invited)**: Patterns, processes and functions in ecohydrology: integrating landscape

	<p>ecological and hydrological models (abstract #310)</p> <p>15:00-15:15 P.Breil, A.Dutartre: Dynamic modelling of aquatic Macrophytes in a large alluvial stream and Ecohydrological perspective (abstract #108)</p> <p>15:15-15:30 M.J.O'Callaghan, J.P.Sadler, D.M.Hannah, I.Boomer: Resource partitioning in an unpredictable environment: using stable isotopes to understand aquatic subsidies and niche position of specialist riparian Coleoptera (abstract #138)</p> <p>15:30-16:00 Coffee break</p> <p><b>Session F, Interactions between hydrology and ecology</b> Chairpersons: Ron Harvey (USA), Peter Horchler (Germany), <b>chairs 10</b></p> <p>16:00-16:30 <b>H.-P. Nachtnebel (invited):</b> Consideration of the vegetation layer in hydrological modelling (abstract #400)</p> <p>16:30-16:45 F.Vanderhaeghe, A.J.P.Smolders, J.G.M.Roelofs, M.Hoffmann: Experimental impact of ammonium, carbon dioxide and water levels on amphibious softwater plant communities (abstract #157)</p> <p>16:45-17:00 S.Rodrigues, N.Richard, Ph.Jugé, J.Berthommé, J.-R.Malavoi, G.Cochet: Influence of dam removal and past sediment mining on river morphology and biology: example of the Vienne River (France) (abstract #207)</p>
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**Poster Session Block 2, plenary visit to posters, 17.00-18.30 hours**

**Beer-wine-soft drinks-snacks**

*Posters to be installed during the morning of Wednesday, 4 May.*

**Wednesday-Thursday, 4-5 May 2011, Poster session block 2 (maximum 37 posters)**

**Session F: Modelling interactions between hydrology and ecology**

**Session G: Management, legal and regulatory issues**

**Session I: Land use implications (including restoration and ecohydrology)**

**Session K: Global change (human activity, natural changes): from noises to trends**

**Session S: Special Session "Landscape versus local controls on water quality in small streams"**



## Thursday, 5 May

Registration Desk open from 8.00 hours

**Poster session block 2 on display till end of day**

Authors of the entire day are requested to hand in their USB memory stick with oral presentation at the registration desk during Wednesday. Thank you!

### Lecture hall A

**Only plenary presentations during this entire day**

#### **Session S, Special Session “Landscape versus local controls on water quality in small streams”**

Chairpersons: Gilles Pinay (United Kingdom), Mathieu Sebilo (France), **chairs 11**

08:30-09:00 **D.M.Hannah**, K.Kantola, I.A.Malcolm, A.F.Youngson, C.Soulsby (**invited**):

Sensitivity of headwater stream temperature to riparian land management (abstract #149)

09:00-09:30 **K.Bishop** (**invited**):

Climate effects on riparian zone control on DOC in boreal headwaters streams: does riparian zone control amplifies climate response? (abstract #269)

09:30-09:45 S.Arnon, S.Gafny:

Evaluating chemical and biological indicators for the assessment of innovative stream rehabilitation in water stressed environment (abstract #81)

09:45-10:00 J.Mas-Pla, A.Menció, A.Marsiñach, A.Folch, M.Boada:

Modelling surface water / groundwater interactions in streams connected to exploited alluvial aquifers by means of hydrochemical data (abstract #143)

10:00-10:30 Coffee break

#### **Session S, Special Session “Landscape versus local controls on water quality in small streams”**

Chairpersons: David Hannah (United Kingdom), Kevin Bishop (Sweden), **chairs 12**

10:30-11:00 **G.Pinay**, P.Troccaz, Ph.Mérot, T.P.Burt, N.E.Haycock, M.Sebilo (**invited**):

Controls and patterns of nutrient fluxes in low stream order agricultural catchments (abstract #30)

11:00-11:30 **C.M.Heppell**, A.L.Heathwaite, K.L.Lansdown, S.Ullah, A.Binley, M.Trimmer, H.Zhang (**invited**):

Implications of groundwater-surface water connectivity for nitrogen transformations in the hyporheic zone (abstract #139)

11:30-11:45 M.Trimmer, K.P.Lansdown, C.M.Heppell, S.Ullah, A.L.Heathwaite, A.Binley, H.Zhang:

Measuring river bed denitrification: an in situ approach (abstract #141)

11:45-12:00 Ch.Blodau, S.Minderlein, B.Kopp, M.Siems, J.Fleckenstein, N.T.Roulet, D.Fortin,

E.Humphreys:

Impact of 90 years of drainage on the hydrology and subsurface biogeochemistry of a

northern peatland (abstract #112)

12:00-12:30 **M.Sebilo** (**invited**):

Dynamic of nitrogen at the scale of the Seine catchment (France): Use of isotopic biogeochemistry (abstract #306)

12:30-14:00 Lunch

**Session S, Special Session “Landscape versus local controls on water quality in small streams”**

Chairpersons: Hans-Peter Nachtnebel (Austria), **chairs 13**

14:00-14:15 B.Gumiero, B.Boz, P.Cornelio:

The efficiency in nitrogen removal of an irrigated buffer area (abstract #237)

**Session G, Management, legal and regulatory issues**

Chairpersons: Hans-Peter Nachtnebel (Austria), **chairs 13**

14:15-14:30 M.Tomlinson:

Policy and science needs for the protection of groundwater dependent ecosystems (abstract #62)

14:30-14:45 B.Zennaro, M.Siligardi:

The fluvial and the lake shorezone functionality indices: a new macroscopic approach to river and lake functionality (abstract #66)

14:45-15:00 J.Liu, C.F.Zang:

Understanding water-agriculture-human interrelations with an ecosystem service approach (abstract #307)

15:00-15:15 E.Fuchs:

The PIANC “Working with Nature” Philosophy for integrated Waterway Planning and the essential need of hydro-ecological knowledge (abstract #312)

**15:15-15:30 Closure of conference**

## **Poster sessions**

### **Posters Session A: Interactions between surface water, hyporheic zone, saturated and unsaturated groundwater**

- #45 D.Berhane, W.Vervoort, P.Serov: Thermograph analysis for estimating vertical hydraulic conductivity and near streambed fluxes: Cockburn River, NSW, Australia
- #69 M.Ndini: The analyse of surface and groundwater exchange in two different river watersheds
- #130 N.Milosevic, N.I.Thomsen, H.J.Albrechtsen, P.L.Bjerg: Identification of groundwater/surface water discharge and evaluation of impact on a local stream from an old landfill
- #148 S.Simon, J.Mádl-Szőnyi, T.Weidinger: Scale effects influenced lake-groundwater interaction in saline environment, Danube-Tisza intefluve, Hungary
- #165 G.Y.Ebrahim, A.van Griensven, A.Jonoski, W.Dejonghe: Modelling groundwater-surface water interaction in the hyporheic zone using vertical temperature profiles
- #187 Sukran, M.Ekmerci, L.Tezcan, S.Acikel, D.Ozbek: Conceptualization of a brackish coastal karst system: Implications for resilience of a groundwater dependent wetland
- #198 S.Bartsch, C.L.Shope, S.Peiffer, J.H.Fleckenstein, B.Kim, J.Eum, J.Tenhunen: Monsoon-driven total head and temperature variations at the groundwater-surface water interface – Implications for biogeochemical processes
- #228 A.M.Subyani, A.A.Al-Modayan: Flood risk analysis in Al-Madinah Area, Western Saudi Arabia
- #293 M.A.Middleton, D.M.Allen: Spatial and temporal changes in groundwater flux to gaining streams
- #308 S.Krause, D.M.Hannah, T.Blume: Interstitial pore-water temperature dynamics across a pool-riffle-pool sequence
- #349 L.Xiangquan, H.Xinwei, Z.Li: Transforming relationship among surface water , precipitation and groundwater along Fenhe River in Taiyuan Basin, China

### **Posters Session B: Connections between ecology and groundwater recharge and evapotranspiration**

- #158 S.H.H.Shah, R.W.Vervoort, S.E.A.T.M.van der Zee: Modelling of soil sodicity development due to capillary upflow of saline groundwater in the stochastic ecohydrological framework
- #173 Z.Gribovszki, P.Kalicz, J.Szilágyi: Estimation of subdaily riparian evapotranspiration from high frequency streamflow data
- #355 W.YongLi, N.Shijun, Z.ChengJiang, H.ZhiGang, S.Zeming: Water hydrogen and oxygen isotope composition and spring isotope information in the tea ditch of Anxian, China

### **Posters Session C: Plant-groundwater interactions**

- #189 P.De Becker, W.Huybrechts: Ecohydrological site conditions in alluvial forests with *Fraxinus excelsior* and *Alnus glutinosa* (N2000 code 91E0)
- #369 A.Vlyssides, E.Koukios, E.M.Barampouti, S.Mai: Comparison of the nutrients removal efficiency of *Arundo Donax* versus *Phragmites Australis*

### **Posters Session D: Links between hydrology and biogeochemistry in groundwater**

- #53 N.K.Fisher, L.M.Kondratyeva, V.V.Kulakov: Microbiological indication as a sensitive tool to study of groundwater treatment processes in situ: the Amur River basin
- #70 D.Schotanus, S.E.A.T.M.van der Zee, A.Leijnse, M.J.van der Ploeg: Effects of weather variability on pesticide leaching
- #127 G.Larsen, M.E.Cox, J.J.Smith: Controls over dissolved Fe within ground and surface water micro-environments in a subtropical coastal setting, Fraser Coast, Australia
- #137 K.P.Lansdown, C.M.Heppell, S.Ullah, A.L.Heathwaite, A.Binley, M.Trimmer, H.Zhang: What controls nitrogen cycling in the bed of a groundwater-fed river?
- #153 J.Beer, C.Neumann, S.Peiffer, J.H.Fleckenstein, C.Blodau: Linkage between groundwater-lake water-exchange and biogeochemistry in an acidic mine lake

- # 210 T.Brown: Comparison of field-employed extraction and isolation methods to characterize dissolved organic matter functional fractions in karst waters
- #288 V.Marconi, M.Antonellini, E.Dinelli, P.Mollema: Arsenic source and release process in a coastal wetland located in the south eastern Po plain (Italy)

### **Posters Session E: Modelling surface-water-groundwater systems**

- #21 S.Six, T.Diez: Infiltration of surface water from the Dijle-river during periods of high water level near shallow drinking water wells. An example of a time-series analysis of high-frequent water level measurements in Korbeek-Dijle (Central Belgium)
- #43 X.Luo, X.Liang: Impacts of hydraulic redistribution and groundwater table dynamics on evapotranspiration
- #47 J.Battle-Aguilar, S.Brouyère: Modelling groundwater flow and aquifer heterogeneity in urbanised environment with strong river interactions
- #91 Y.Sun, B.Lu, J.Wang: Research of isotope hydrology model based on Itô differential equation
- #107 C.Calligaris, F.Cucchi, A.Deana, F.Treu, L.Zini, A.Cimolino: The Low Friuli Plain confined aquifers: 2D and 3D reconstruction
- #140 A.Gundel: Groundwater vulnerability of mountainous catchments under drought conditions in Switzerland
- #162 Ch.Neumann, J.Beer, S.Peiffer, J.Fleckenstein: Spatiotemporal pattern of groundwater level manipulation experiment
- #264 M.Moraes, C.B.Uvo: Two way coupling of a conceptual hydrological model to a regional atmospheric model
- #278 L.Hoang, A.van Griensven, Amarynnet: Simulation of the hydrological and nitrogen balance and cycle within the Odense river basin
- #343 P.Castanheira: Using the Drenafem model for simulation subsurface drainage in Baixo Vouga lagoon
- #444 Á.Kertész, G.Jakab: The role of gully erosion at catchment scale

### **Posters Session F: Modelling interactions between hydrology and ecology**

- #67 M.Mellendorf, S.Young, G.O'Mullan, A.Juhl: Settling rates of free-living and particle-attached bacteria and Enterococcus in the Hudson River (New York), U.S.A.
- #93 M.Heuner, U.Schroeder, B.Kleinschmit: Responses of different reed species to morphological bank conditions along the marsh edges
- #120 E.Vermue, A.Leijnse, S.E.A.T.M.van der Zee: Modelling temporal fluctuations of abiotic site conditions for an inland salt marsh
- #171 D.Meire, P.Troch, K.Buis, P.Meire: Incorporating spatial heterogeneity of flow-vegetation interaction in an integrated river ecosystem model
- #215 L.De Doncker, B.Van Damme, D.Meire, P.Troch, R.Verhoeven, K.Buis: Ecohydraulic modelling over different seasons with varying vegetation
- #257 A.Wickramasooriya: Tsunami and its effect on costal and marine ecosystems of Southern and Eastern costal zone of Sri Lanka
- #261 P.Kovář, F.Krovak: Nature close torrent control in Ore Mountains
- #339 A.Pasteris, S.Bacchi, S.Buratti, E.Fabbri, P.Mollema, V.Marconi: Effects of soil salinisation on the earthworm *Eisenia andrei*: life cycle traits and histochemical biomarkers
- #348 S.Schmidt, C.Picioreanu, Ray Mackay, M.Thullner, J.U.Kreft: When modelling biodegradation on the micro scale, degrader colony distribution does matter
- #361 A.García-Arias, F.Francés, R.Rivaes, P.Rodríguez-González, A.Albuquerque, T.Ferreira, G.Egger, E.Politti: Analysis of the riparian vegetation dynamics through the RIPFLOW model. Climate change scenarios in three European countries
- #367 M.A.dos Santos, L.P.Rosa: Conceptual model of greenhouse gas emissions from hydroelectric reservoir in tropical areas

## **Posters Session G: Management, legal and regulatory issues**

- #320 H.Martinez: Public policy in groundwater: Far from the rhetoric, closer to the reality
- #335 Y.E.Woyessa, W.A.Welderufael: Climate change and ecological systems: A framework for the understanding of socio-hydrological dynamics
- #366 A.Lashofer, W.Hawle, M.Pucher, T.Cassidy, B.Pelikan: Mitigation opportunities for obstructed river reaches by combining RES-E and WFD objectives

## **Posters Session H: Bio-indicators of groundwater and surface water quality**

- #72 M.De Liguoro, V.Di Leva, M.Dalla Bona, G.Gallina: An overall toxicity screening of waters used for field irrigation and livestock watering in the Veneto region, using *Pseudokirchneriella subcapitata* and *Daphnia magna* as test organisms
- #87 W.-P.Tsai, F.-J.Chang: A study of artificial neural networks for an evaluation of riverine biodiversity
- #105 C.Hose, M.J.Lategan: Comparing approaches for setting environmental quality criteria for groundwater protection
- #178 G.Alvarez, A.van Griensven, M.Arias, A.Mynett: Aquatic macroinvertebrates communities in an agricultural area of a Tropical River Basin. A case study in the middle catchment of the Guayas River Basin (Ecuador)
- #190 B.Carro, M.Quintela, J.M.Ruíz, R.Barreiro: Use of *Nucella lapillus* L. as bioindicator of TBT pollution in marine waters: Northwest Iberian Peninsula, Spain
- #345 S.Kühn, T.Struppe, C.Charlé: Assessment of the groundwater ecosystem

## **Posters Session I: Land use implications (including restoration and ecohydrology)**

- #42 M.Riahipour: Inspection and study of water transfer effects from Sabzkooh River to Choghakhor earth dam, South west part of Iran
- #51 J.L.Arumí, D.Rivera, E.Muñoz, O.Melo, M.Bilib: Groundwater-surface water interactions at the Laja watershed in the Central Valley of Chile
- #59 K.Yuge, Y.Oohira, M.Anan, Y.Shinogi: Planning of the agricultural land use and water management system for preservation of ecosystem in the rural area
- #94 E.Salemi, M.Mastrocicco, N.Colombani, C.Giuseppe: Fertilization management in zones vulnerable to nitrate: a new perspective based on G.I.S. mapping of residual nitrogen availability
- #96 M.Mastrocicco, N.Colombani, E.Salemi, C.Giuseppe: Surface and subsurface water continuous monitoring to quantify nitrate leaking to groundwater from maize plots
- #209 O.Ifeyinwa, O.Shakirudeen, O.Lekan: Global change on rural water systems in Southwestern Anambra State, Nigeria
- #214 V.N.Carvalho Júnior: REDERES: a tool for assessing long-term influence of small dams on downstream flow release of strategic water reservoir in Brazil's northeast semi-arid
- #234 Z.Kovácz, A.Rédey, Z.Zsilák, C.Szalkay: Comparison of water quality of Séd stream in Veszprém and Holt-Sebes-Körös together with Sebes-Körös in Békés
- #245 P.Ferro, L.Luz, F.Genz: Analysis of the degree of connectivity between the Sao Francisco river and riparian lagoons: Evaluation of the hydrology and physical and chemical variables
- #262 L.Koncsos, Z.Kozma, Z.Jolánkai, B.Muzelák: Evaluation of a novel integrated water resources management model on a pilot area heavily affected by excess water
- #326 S.Arnon, K.Yanuka, A.Nejidat: Impact of overlying velocity and sediment morphology on nitrification in benthic biofilms

## **Posters Session K: Global change (human activity, natural changes): from noises to trends**

- #225 J.Alcazar: Environmental flows and climate change in the Ebro River Basin, Spain
- #241 P.Wang, Z.Cao, G.Tan: Hydrodynamics of phytoplankton bloom in shallow water environments
- #272 P.Mollema, M.Antonellini, D.Capo, G.Gabbianelli, M.Laghi, V.Marconi: Current and future water budget of a Mediterranean coastal watershed: Quinto Basin, Ravenna, Italy
- #336 V.M.Peñaranda V.: Rainfall complex pattern trend via multifractal analysis
- #342 J.A.Kharanzhevskaya: Impact of climate change on the raised bog water balance in Western Siberia
- #368 M.Onderka, L.Mrafkova, A.Krein: Long-term persistence of stream nitrate concentrations (memory effect) inferred from spectral analysis and detrended fluctuation analysis

## **Posters Session S: Special Session “Landscape versus local controls on water quality in small streams”**

- #95 R.O’Brien, B.Missteart, L.Gill, R.Flynn: Simulating flow pathways in Irish catchments using a lumped and semi-distributed modelling approach
- #111 E.Buis, G.Janssen, B.Fraters, L.J.M.Boumans, A.de Klijne: Relationship between farm management and surface water quality in agricultural regions of the Netherlands
- #117 E.Pardo, J.Gilabert: Hydrography and water quality parameters in the medium Tagus River
- #133 Y.Gilboa, E.Friedler, G.Gal, Y.Allon, D.Markel: Calibration of AVGWLF to Lake Kinneret Watershed (Israel)
- #169 Ch.L.Shope, S.Peiffer, J.Fleckenstein, J.Tenhunen: The forest through the trees: Quantifying local controls on watershed scale impacts
- #197 J.C.Labadz, L.Cork, H.O’Brien, D.P.Butcher, D.Topliss: Impacts of land management on stream water flows in blanket peat moorland in the Peak District, Derbyshire, England