



## Stakeholder and Expert workshop

# Groundwater-river interaction as driver for ecology

**Biebrza, Poland; 15-17.09.2014**

In many rivers around the world, groundwater conditions have a major influence on the flow regime and water quality. Hence, groundwater plays a key role in controlling ecological processes and functioning in rivers, riparian zones and floodplains. As such, it can sustain multiple ecosystem services within river valleys. Deterioration of groundwater bodies, resulting from land use, abstraction or climate change, can significantly alter river flow and quality characteristic that can cause ecological degradation. Therefore, maintaining groundwater-river connectivity is an important aspect of ecosystem conservation and water management policy in river valleys.

Within the framework of REFORM (see below), we are organising a three-day expert workshop in Poland to establish an overview of the current knowledge on the topic of groundwater - river feedbacks. In addition, we aim to identify and provide a focus for future research activities and water management policies on this topic during the workshop. All attendants are invited to contribute to a collective policy paper on the topic of groundwater – river feedbacks.

During the three-day workshop, key note lectures will be given by hydrological and ecological experts in the field of groundwater - river feedbacks and their implications for river and floodplain ecosystems. In addition, working sessions will be held to elucidate and discuss the knowledge and experience of all expert attendants. The lectures and discussion sessions will be alternated with field trips to the Biebrza National Park ([www.biebrza.org.pl](http://www.biebrza.org.pl)) – the wetland reserve of European importance.



## Workshop Topics

- Role and relevance of groundwater in environmental flows;
- Riparian and groundwater-fed wetlands – importance of base flow, flow dynamics & water quality;
- Plant ecology of aquatic and riparian zones;
- Groundwater river feedback at different scales;
- Vulnerability and resilience of groundwater-river processes (including effect of drought)
- Current and required policy on groundwater-river feedbacks (WFD)

## Key-note speakers

**Hans Jorgen Henriksen** (GEUS, Denmark) – Quantitative aspects of groundwater-river interaction.

**Hans-Peter Broers** (Deltares, the Netherlands) – Qualitative aspects of groundwater-river interaction.

**Jörg Lewandowski** (IGB, Germany) - Groundwater-river interaction and biogeochemical and ecological consequences.

**Johan Schutten** (SEPA, UK; EU working group C (groundwater)) - Groundwater-surface water interaction and terrestrial ecosystems.

**Tomasz Okruszko** (WULS, Poland) – Hydrology of wetlands with respect to groundwater-surface water interaction.

**Rafael Sanchez Navarro** (EFN CIS Guidance, Spain) – Land use and policy in reference with groundwater-river interaction.

**Mike Acreman** (CEH, UK) – Environmental flows and groundwater-river interaction.

## Workshop details

Date: **15-17.09.2014** (Bus departs from Warsaw at 12:00 hr.; Bus arrives to Warsaw at approximately 17:00 hr.)

Venue: **Zagroda Kuwasy Lodge** ([www.zagrodakuwasy.pl](http://www.zagrodakuwasy.pl))

Location: core area of **Biebrza National Park** (250 km from Warsaw)

**Costs:** Workshop fee is **100 EUR** per person (includes: accommodation in single rooms, full board – breakfasts, lunches and dinners; participation in the workshop, field trip, bus transfer from/to Warsaw F. Chopin Airport). Workshop fee is to be paid at the meeting, directly to the hotel.

**Registration:** Please fill in the attached **registration form** and send it to contact persons. Registration deadline: **31.07.2014**

Contact: **Dimmie Hendriks** ([Dimmie.Hendriks@deltares.nl](mailto:Dimmie.Hendriks@deltares.nl)); **Mateusz Grygoruk** ([m.grygoruk@levis.sggw.pl](mailto:m.grygoruk@levis.sggw.pl))

Organising committee: **Tom Buijse** (Deltares), **Tomasz Okruszko** (WULS), **Mike Acreman** (CEH); **Harm Duel** (Deltares), **Dimmie Hendriks** (Deltares), **Magdalena Jarecka** (WULS), **Mateusz Grygoruk** (WULS)

## Workshop agenda

Day	Time	Activity
2014-09-15	Morning	Arrival of participants to Warsaw Airport (either WAW Chopin or Modlin); bus departure from the airport.
	Afternoon	Sightseeing trip, arrival to Kuwasy Lodge
	Early evening	Introductory lecture, setting the goals of the workshop
	Evening	Ice-breaker BBQ dinner
2014-09-16	Morning	Lectures and discussions
	Afternoon	Field excursion
	Early evening	Discussions with snacks
	Evening	Dinner
2014-09-17	Morning	Discussions, define state-of-the-art, next questions, and follow-up actions
	Afternoon	Lunch & travel to Warsaw
	Early evening	Arrival to Warsaw (Central Railway Station, WAW Chopin Airport)

## The REFORM project

Many European rivers are regulated to support flood protection, navigation, freshwater supply or hydropower production. The ecological impacts of these hydromorphological modifications are poorly understood and the extent to which these impacts can be effectively reversed or mitigated lacks scientific rigour. The overall aim of REFORM (FP7 project 2011-2015) is to provide a framework for improving the success of hydromorphological restoration measures to reach, in a cost-effective manner, target ecological status or potential of rivers.

More information about REFORM can be found on the project website [www.reformrivers.eu](http://www.reformrivers.eu).

