

REFORM

REstoring rivers FOR effective catchment Management

International Conference on River and Stream Restoration

Novel Approaches to Assess and Rehabilitate Modified Rivers

30 June—2 July 2015
Wageningen, The Netherlands
Programme booklet

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REFORM

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Conference scope and objectives

The purpose of the conference is to enlarge awareness of the need and appreciation for the benefits of river rehabilitation. It will serve as a platform to present and discuss aspirations, challenges, analytical frameworks and novel approaches to improve our understanding of the causes and consequences of hydromorphological degradation and to enhance river rehabilitation.

40% of European rivers are affected by hydromorphological pressures caused predominantly by hydropower, navigation, agriculture, flood protection and urban development. This conclusion is based on the recent analysis of River Basin Management Plans for the EU Water Framework Directive (WFD). As a consequence, there is increasing emphasis on river restoration driven by demands of the WFD. To improve ecological functioning of rivers and streams EU member states have drafted programmes of measures focusing on restoring river hydrology and morphology. Implementation will require substantial investment in these measures, but there remains a need to better understand and predict the costs and benefits of future river restoration. Ecological response to hydromorphological restoration, however, is complex and poorly understood.

Against this background, REFORM has developed tools for i) cost-effective restoration of river ecosystems and ii) improved monitoring of the biological effects of physical change by investigating natural, degradation and restoration processes in a wide range of river types across Europe. The conference aims to present the major outcome of REFORM, together with excellent work from other studies from Europe and other continents.

Time schedule

Monday June 29

17:00 – 19:00	Registration (Lounge) & Icebreaker party
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Tuesday June 30

08:00 – 08:55	Registration (Lounge)
09:00 – 10:45	Opening: Tom Buijse, Peter Glas en Jaap Kwadijk Keynotes: Klement Tockner, Angela Gurnell
10:45 – 11:15	Coffee break
11:15 – 12:30	Parallel sessions I, II and III
12:30 – 14:00	Lunch
14:00 – 15:00	Keynotes Stan Gregory & Christian Wolter
15:00 – 15:30	Coffee break
15:30 – 16:30	Keynotes Phil Roni & Nikolai Friberg
16:30 – 17:30	Parallel sessions IV, V and VI
17:45 – 19:15	Poster session with drinks

Wednesday July 1

09:00 – 10:30	Keynotes: Peter Pollard, Phoebe Koundouri & Roy Brouwer
10:30 – 11:00	Coffee break
11:00 – 12:30	Parallel sessions VII, VIII, IX
12:30 – 14:00	Lunch
14:00 – 15:30	Keynotes: Guy Woodward, Ian Cowx & Daniel Hering
15:30 – 16:00	Coffee break
16:00 – 17:30	Parallel sessions X, XI, XII
19:00 – 22:00	Conference dinner

Thursday July 2

09:00 – 10:00	Parallel sessions XIII, XIV & XV
10:00 – 10:30	Coffee break
10:30 – 12:00	Keynotes: Hervé Piégay, Tom Buijse/Erik Mosselman & Gary Brierley
12:00 – 12:15	Plenary closing
12:30 – 21:00	Excursion "Room for the Rivers"

08:00 - 08:55			Registration (Lounge)		
Plenary session: Keynotes (location: Ir Haakzaal, Moderator: Tom Buijse)					
09:00 - 09:45	Tom Buijse, Peter Glas and Jaap Kwadijk	Opening			
09:45 - 10:15	Keynote by Klement Tockner	A Global View on Future Major Water Engineering Projects			
10:15 - 10:45	Keynote by Angela Gurnell	Hydromorphology - Vegetation Interactions along River Corridors: A Conceptual Framework			
10:45 - 11:15					
Coffee break (Terraszaal)					
Parallel sessions					
I. Assessment and rehabilitation of hydromorphological processes in rivers Location: Ir Haakzaal, Moderator: Seppo Hellsten Martina Bussettini		II. Achievements by restoration and mitigation practices Location: Kleine Veerzaal, Moderator: Ursula Schmedtje Jochem Kail		III. Benefits of river rehabilitation and synergies with other uses Location: Dorskamp zaal 1 & 2, Moderator: Eleftheria Kampa Hans-Jörg Raderbauer	
11:15 - 11:30	Development of a classification system of geomorphic units aimed at characterizing physical habitats and stream morphology	The effect of river restoration on fish, macroinvertebrates and aquatic macrophytes: a meta-analysis		Strategic river management for considerations in the power and water management sector in Styria/Austria	
Tracy Drury		Wendy Liefveld		Deborah Slawson	
11:30 - 11:45	Reach Scale Floodplain Reconnection and Restoration: Achieving the Objectives of the Columbia River BiOp	The introduction of large woody debris to improve biodiversity in a modified navigable river stretch of the Dutch Rhine		A qualitative Cross-Impact Balance analysis of the hydrological impacts of land use change on channel morphology and the provision of stream channel services	
Dietrich Bartelt		Karel Brabec		Andrea Nardini	
11:45 - 12:00	Sediment is not a problem	Ecological aspects of fluvial processes recovery at Becva River		Integrated Evaluation to support River Restoration: A simple, but effective decision making framework applied to the Chiese River (Italy)	
Massimo Rinaldi		Mathias Scholz		Pepe Barquín	
12:00 - 12:15	Application of the Morphological Quality Index (MQI) to European case studies	Challenges in floodplain and river restoration in the Elbe catchment -case study "Lebendige Luppe" - revitalization project in Leipzig's urban floodplain forest		Using Hydroscaapes to maximize the benefits of riparian corridor restoration for multiple river ecosystem services	
12:15 - 12:30	Spare time slot for discussion or last minute changes in the program				
12:30 - 14:00					
Lunch break (Terraszaal)					
Plenary session: keynotes (location: Ir Haakzaal, Moderator: Susanne Muhar)					
14:00 - 14:30	Keynote by Stan Gregory	Anticipating future trajectories of floodplain rivers and human systems in river restoration			
14:30 - 15:00	Keynote by Christian Wolter	Hydromorphic change and biotic response challenge efficient river rehabilitation			
15:00 - 15:30					
Coffee break (Terraszaal)					
Plenary session: keynotes (location: Ir Haakzaal, Moderator: Hervé Piégay)					
15:30 - 16:00	Keynote by Phil Roni	Key considerations for measuring river restoration success: lessons from Western North America			
16:00 - 16:30	Keynote by Nikolai Friberg	Between a rock and a hard place: ecological responses to degraded hydromorphology in rivers			
Parallel sessions					
Iv. Assessment and rehabilitation of hydromorphological processes in rivers Location: Ir Haakzaal, Moderator: Bart Fokkens Pablo Moreno-García		V. Discerning the impact of hydromorphological modification from other stressors Location: Kleine Veerzaal, Moderator: Matthew O Hare Nele Schuwirth		VI. How to improve the (cost-) effectiveness of river rehabilitation? Location: Dorskamp zaal 1 & 2, Moderator: Maria Isabel Berga Cano Manuel Lago	
16:30 - 16:45	Exploring spatial scales of geomorphical features driving macroinvertebrate communities (Duero Basin, NW Spain)	Mechanistic models can help to disentangle effects of different stressors on the macroinvertebrate community in streams		The economics of river restoration: experiences throughout Europe in understanding effects, costs, and benefits	
Caroline Winking		Ralf Verdonshot		Holger Gerdes	
16:45 - 17:00	Recolonisation and succession of benthic invertebrate assemblages in restored former sewage channels	Streambed microhabitat heterogeneity as a determinant of macroinvertebrate population development		Reporting and predicting costs of river restoration projects	
Alexandre Peeters		John Murphy		Diego Garcia de Jalon	
17:00 - 17:15	Assessing the effect of a catchment-scale restoration project in Wallonia (Belgium)	Managing the impact of fine sediment on river ecosystems		Evaluating the environmental costs of flow regulation: a dynamic water pricing approach	
Helmut Habersack		Dimmie Hendriks			
17:15 - 17:30	The Hydromorphological Evaluation Tool	Changing e-flows resulting from land use change and altered groundwater conditions in the Regge catchment, the Netherlands			
17:30 - 17:45	Spare time slot for discussion or last minute changes in the program				
17:45 - 19:15					
Poster session with drinks (Location: Terraszaal)					

Plenary session: Keynotes (Location: Ir Haakzaal, Moderator: Wouter van de Bund)

09:00 - 09:30	Keynote by Peter Pollard	Gaps and possible ways forward for river restoration
09:30 - 10:00	Keynote by Phoebe Koundouri	The Economic Value of Restoration based on the Ecosystem Services Approach
10:00 - 10:30	Keynote by Roy Brouwer	The socio-economic benefits of river restoration

10:30 - 11:00 Coffee break (Terraszaal)

Parallel sessions

	VII. Assessment and rehabilitation of hydromorphological processes in rivers Location: Ir Haakzaal, Moderator: Johan Kling	VIII. Achievements by restoration and mitigation practices Location: Kleine Veerzaal, Moderator: Piet Verdonschot	IX. European Centre for River Restoration Location: Dorskamp zaal 1 & 2, Moderator: Harm Duel
	Robert Grabowski	Stéphane Fraisse	Bart Fokkens
11:00 - 11:15	Applying process-based hydromorphological assessment to the identification of fine sediment pressures and impacts in a lowland agricultural catchment	The dam removal in the Sélune river (France): a long-term interdisciplinary program from the particle to the watershed scale	ECRR and river restoration through the years
	Mijke van Oorschot	Bart Brugmans	Chris Baker
11:15 - 11:30	Distinct patterns of interactions between vegetation and river morphology	Woody debris increases and stabilizes macrofauna communities in stream construction works	RESTORE's multiple benefits for river restoration and the ECRR
	Tomas Galia	Merel Soons	
11:30 - 11:45	Torrent restorations in the flysch mid-mountain environment: the case study of the Kněhyně Torrent, Czech republic	Effects of hydromorphological stream restoration measures on stream and riparian zone plant diversity	Discussion on integration issues of River Restoration implementation
	Bruno Golfieri	Seppo Hellsten	
11:45 - 12:00	Towards a more comprehensive assessment of river ecological conditions: application of a dragonfly-based index in Northern Italy	The response of hydrophyte growth forms and plant strategies to river restoration	
	Rafael Schmitt	Sabine Scheunig	
12:00 - 12:15	A multi-scale framework for modelling river basin sediment connectivity	Helophytes are efficient indicators of river restoration success	
12:15 - 12:30	Spare time slot for discussion or last minute changes in the program		

12:30 - 14:00 Lunch break (Terraszaal)

Plenary session: keynotes (Location: Ir Haakzaal, Moderator: Tomasz Okruszko)

14:00 - 14:30	Keynote by Guy Woodward	The Missing Links in River Restoration – Towards a Network-Based Approach
14:30 - 15:00	Keynote by Ian Cowx	Measuring restoration success
15:00 - 15:30	Keynote by Daniel Hering	Contrasting the roles of section length and instream habitat enhancement for river restoration success: a field study on 20 European restoration projects

15:30 - 16:00 Coffee break (Terraszaal)

Parallel sessions

	X. Discerning the impact of hydromorphological modification from other stressors Location: Ir Haakzaal, Moderator: Martina Bussetini	XI. Achievements by restoration and mitigation practices Location: Kleine Veerzaal, Moderator: Diego Garcia de Jalon	XII. Linking science to practice: tools to assess river status and guide rehabilitation to optimize river basin management Location: Dorskamp zaal 1 & 2, Moderator: Judy England
	Annemarie Garssen	James Champkin	Massimo Rinaldi
16:00 - 16:15	Riparian plant community responses to increased flooding	Responses of fishes and lampreys to re-meandering rehabilitation work in a small chalk stream	New tools for an integrated hydromorphological assessment of European streams
	Iwan Jones	Leah Beche	Hamish Moir
16:15 - 16:30	Diatoms as indicators of fine sediment stress	Flow restoration of the Durance river: implementation and monitoring of targeted water releases to reduce clogging and improve river function	Hydraulic modelling & ecological evaluation of the 'process restoration' philosophy on the Allt Lorgy, Scotland
	Jarno Turunen	Shaun Morris	Paweł Marcinkowski
16:30 - 16:45	Disentangling stressors in boreal rivers: diffuse pollution overrules channel alteration in degrading river assemblages	Management of a meander cutoff using instream works to reduce the hydraulic gradient	Assessing alternative conservation strategies for the anastomosing River Narew
	Helmut Mader	Benjamin Kupilas	Luca Demarchi
16:45 - 17:00	Multiple hydromorphological stressors and their impact on fish populations and riparian and floodplain vegetation in the foreland of alpine regions	Effects of river restoration on 13c and 15n isotope composition in river and floodplain food webs - an approach on 20 European restoration	Semi-automated riverscape units classification and active river channel delineation for the Piedmont region (Italy)
	Piet Verdonschot	Amael Paillex	Veronica Dahm
17:00 - 17:15	Morphology revisited; an ecologists view on morphology	Quantifying and valuing river restoration effects: Thur and Töss rivers	Approaches to consider the recolonisation potential in restoration planning

17:15 - 17:30 Spare time slot for discussion or last minute changes in the program

19:00 - 22:00 Conference dinner (The Wageningse Berg)

Detailed time schedule

Thursday July 2

Parallel sessions			
	XIII. How to improve the (cost-) effectiveness of river rehabilitation? Location: Ir Haakzaal, Moderator: Ian Cowx Rui Cortes	XIV. Benefits of river rehabilitation and synergies with other uses Location: Kleine Veerzaal, Moderator: Bas van der Wal Gregor Thomas	XV. Linking science to practice: tools to assess river status and guide rehabilitation to optimize river basin management Location: Dorskamp zaal 1 & 2, Moderator: Wim Zeeman Jo Halvard Halleraker
09:00 - 09:15	Restoration success and failure: learning from an integrated restoration programme in a temporary Mediterranean river system	The revised water protection law of Switzerland and its implementation to practice	Towards an harmonized understanding of mitigation measures and implementation thereof to reach Good Ecological Potential (GEP) in water bodies affected by water storage across Europe
	Elina Bennetsen	Marjolein Sterk	Peter Reichert
09:15 - 09:30	The ELMO toolbox: Ecological modelling for decision support in river restoration planning	Social and economic perspectives of river restoration	Evaluation and prioritization of river rehabilitation projects
	Luiza Tylec	Kaj Granholm	Geraldene Wharton
09:30 - 09:45	Restoration of Narew National Park buffer zone in context of ecosystem services	The concept and practise of locally driven environmental initiatives	A methodology to assess the river and its surrounding area to inform project design and appraisal
09:45 - 10:00	Spare time slot for discussion or last minute changes		
10:00 - 10:30	Coffee break (Terraszaal)		
Plenary session: keynotes (Location: Ir Haakzaal, Moderator: Sacha de Rijk)			
10:30 - 11:00	Keynote by Hervé Piégay	Improving river restoration policy : a few discussion points following 10 to 20 years of actions	
11:00 - 11:30	Keynote by Tom Buijse / Erik Mosselman	REFORM: scientific progress and tools for water management	
11:30 - 12:00	Keynote by Gary Brierley	Linking science to practice: tools to assess river status and guide rehabilitation to optimize river basin management	
12:00 - 12:15	Plenary closing		
12:30 - 21:00	Excursion 'Room for the Rivers'		

Topics of the conference

Assessment and rehabilitation of hydromorphological processes in rivers

Hydromorphological processes operate across space scales from catchment to site and vary through time across all space scales to drive river morphodynamics. We invite contributions on multi-scale approaches to the assessment of hydromorphological condition and the development of sustainable rehabilitation measures. Contributions that link hydromorphology with ecology are also welcome.

Discerning the impact of hydromorphological modification from other stressors

The majority of rivers and floodplains have been degraded by a multitude of anthropogenic impacts and are among the ecosystems that have seen the largest decline in biodiversity worldwide. Habitat modifications resulting from substrate extraction, channel re-sectioning, damming, etc., reduce ecological quality through homogenization of biotopes and loss of connectivity. It is a major challenge to disentangle and quantify the impact of habitat degradation from the multiple stressors that act on riverine ecosystems. We show ways forward and invite contributions on how to assess hydromorphological degradation using existing biomonitoring methods and identify which of the WFD compliant biological quality elements are most sensitive to this type of stress.

Achievements by restoration and mitigation practices

Worldwide, rivers are being restored to enhance fish habitats, to increase attractiveness and to improve ecosystem services and biodiversity. River restoration is a business worth billions of Dollars/Euros and driven by societal demands and respective legislation. In sharp contrast is the knowledge about restoration effects and factors responsible for success or failure. The majority of measures have not been subjected to monitoring. We will present our review of published studies on river restoration effects and our extensive field studies on how different restoration measures affect hydromorphology, river and floodplain biota and functions and invite contributions demonstrating restoration achievements.

How to improve the (cost-)effectiveness of river rehabilitation?

River restoration is expected to deliver a multitude of ecosystem services and societal benefits. Many of these benefits can be characterized as public goods, making it difficult to quantify them in economic terms for comparison with the costs of river restoration. River restoration can be costly and it is therefore paramount to

identify the most cost-effective way to improve ecological status as required by the WFD, and simultaneously maximize the broader benefits associated with habitat and ecosystem rehabilitation. Possible trade-offs with other sectoral interests, for example navigation and hydropower, are ideally accounted for, as well as the causal link between restoration efforts, biophysical effects, ecosystem services and socio-economic benefits based on integrated hydro-ecological-economic modeling. Conceptual and applied case study contributions addressing these key methodological issues are invited.

Benefits of river rehabilitation and synergies with other uses (flood protection, navigation, agriculture, hydropower)

There is considerable conflict between river rehabilitation objectives and those of other water sector drivers, such as flood prevention, hydropower, navigation and agriculture. However, there are equally substantial benefits and synergies that can be gained if the various sectors work together to achieve sustainable outcomes that improve the ecological status of rivers. This section is looking for case studies, policy frameworks and guidance to promote synergies between sectors to facilitate sustainable rehabilitation activities in multiple user environments.

Linking science to practice: tools to assess river status and guide rehabilitation to optimize river basin management

Translating scientific knowledge into guidance for river restoration practitioners presents a major challenge. We invite contributions on practical tools to assess river status and guide rehabilitation to optimize river basin management. More generally, we welcome contributions on best practices of using scientific knowledge in river restoration projects.

2 Posters

1. Assessment and rehabilitation of hydromorphological processes in rivers	
Maria Diaz-Redondo	Integrated analysis of habitat structure and river-floodplain processes as a basis for process-based river restoration in the upper Rhine
Gregory Egger	Modeling of long-term development of riparian vegetation in the dike relocating area 'Lenzen an der Elbe' (Germany)
Carlos Alonso	How is metapopulation resilience affected by longitudinal connectivity? A criterion for the restoration of river networks
Vanesa Martínez-Fernández	Automatic segmentation of rivers as a tool for assessing river responses. Case study: The Porma and Curueño Rivers, NW Spain.
Enrico Marchese	Morphological changes in rivers of South Tyrol (Italian Alps) attributable to climate variations occurred after the little ice age
Benoit Camenen	On the estimation of the sediment transport and sediment budget in a long reach: application on the Middle Loire River, France
Vaclav Skarpich	Anti-erosive construction in the Morávka River – problematic approach to management of flysch Carpathian rivers, Czech Republic
Kathrin Januschke	Effects of river restoration on riparian ground beetles (Coleoptera: Carabidae) in Europe
Giuditta Trinci	Improved hydromorphological assessment methods for European river systems
Jiri Jakubinsky	The usability of hydromorphological data in the flood risk management on small streams
Emma Quinlan	Past and present hydromorphological assessment techniques for the Water Framework Directive in Ireland
Piet Verdonschot	Morphological assessment of reconstructed lowland streams in the Netherlands
Bartłomiej Wyzga	Assessment of river hydromorphological quality for restoration purposes: case study of the Biała River, Polish Carpathians

2. Discerning the impact of hydromorphological modification from other stressors	
Martina Krakova	Heavy metals partitioning among matrices and habitats of polluted stream
Rui Cortes	Flood management at the river basin scale: a model framework for selecting the best location for a detention basin system
Joanna Zawiejska	Interpretation of the invertebrate-based BMWP-PL index in a gravel-bed river: insight from the Polish Carpathians
Satoshi Kameyama	Flow and water temperature simulation with future scenarios for nature restoration project in the Kushiro River, Japan

3. Achievements by restoration and mitigation practices	
Muneyuki Aoki	Effectiveness of group of pile dikes for fish habitat
Aurel Nastase	Evaluation of restoration success in the Danube Delta using fish assemblages
Martina Krakova	Habitat-scale evaluation of stream restoration effects: case study at Knehyně stream
Jon Harding	Improving restoration tools for small lowland agricultural streams
Daniela Campana	Morphological and macroinvertebrates response to small-scale restoration interventions in mountain rivers
Victoria Janes	Evaluating the effect of river restoration techniques on reducing the impacts of outfall on water quality
5. Benefits of river rehabilitation and synergies with other uses (flood protection, navigation, agriculture, hydropower)	
Iulian Nichersu	Lower Danube 4D Reconnection – Strategic Framework for LU/climate change adaptation
Han Sluiter	Green Rhine corridor a bottom up initiative from NGO's in the Rhine basin
Marta Utratna	Evaluation of the impact of pressure and the sensitivity of habitats protected under the Natura 2000 network on their [...]
Brian Coghlan	Targeted river enhancement at a catchment level: maximising ecological return and cost effectiveness in addressing the Water Framework Directive
Menno Straatsma	Optimizing river management: integrated assessment of floodplain interventions
Pierre Samuelsson	LIFE Triple lakes
6. Linking science to practice: tools to assess river status and guide rehabilitation to optimize river basin management	
Bruno Mazzorana	Developing restoration patterns for heavily modified alpine rivers
William Barry	Supplemental tools for natural channel design
Marie Anne Eurie Forio	Bayesian belief network models to support decision making in river basin restoration
Judy England	Morphological measures improve the low flow habitats in rivers
Mateusz Stelmaszczyk	The impact of hydromorphological restoration measures on macroinvertebrates diversity; Narew and Warta river case studies
Ina Quick	Approach to investigate and assess hydromorphological conditions at large and navigable surface waters in Germany
Mircea Staras	Fish fauna as indicator for large river-floodplain alterations. Case study: Danube Delta
Ulrika Åberg	The River Wiki: a platform for sharing best practice river restoration
Natalie Angelopoulos	Integrated project planning framework

Biographies of the keynote speakers



Professor Gary Brierley

Chair of Physical Geography, School of Environment, The University of Auckland

Gary Brierley was educated at Durham University, UK and Simon Fraser University in Canada. He completed his post-doctoral work at the Australian National University, prior to working at Macquarie University in Sydney. He is presently Chair of Physical Geography in the School of Environment at the University of Auckland.

Gary has published over 150 fully reviewed publications, on topics ranging from geomorphology, geo-ecology and sedimentology to concerns for rehabilitation practices, environmental justice, ethnogeomorphology and environmental governance. He is co-developer of the River Styles framework, an approach to the use of landscape science to inform river management applications. He is co-author of two books, *Geomorphology and River Management* and *Geomorphic Analysis of River Systems*, and co-editor of another book entitled *River Futures*. These books outline the use of scientific principles to guide applications in the policy and planning arenas and on-the-ground. Gary has presented professional short courses on river science and management in various parts of the world. Much of his recent work has been undertaken in western China, where he is completing a co-edited book on landscapes and ecosystems of the Upper Yellow River. In 2013 he was awarded the status of High End Foreign Expert by Qinghai University and in 2014 he received a prize for international collaboration presented by the Qinghai Government.

Prof. Dr. Roy Brouwer

Head, Department of Environmental Economics, Institute for Environmental Studies, Vrije Universiteit Amsterdam

Roy Brouwer is specialized in ecosystem services valuation and water economics. He combines practical water policy experience (he worked outside academia as chief economist in the Dutch Water Ministry for 5 years) and scientific research (he was a researcher in Wageningen University, University of East Anglia, and since 2005 VU University Amsterdam). He developed an integrated accounting system for water ecosystem services at national and river basin scale in the Netherlands, received a scholarship award from the Australian Government in 2008 to assist in the development of a sustainable water conservation policy strategy under climate change, and was appointed Professor of Water Economics in the Dutch Research Program Living with Water in 2009. In 2011 he received a scholarship award from the Swiss Federal Institute for Aquatic Research and Technology (Eawag), where he leads the Water Economics Cluster as a visiting professor. Since 2012 he is Editor in Chief of the journal Water Resources and Economics. He coordinated the project AQUAMONEY for the European Commission between 2006 and 2009 to develop practical guidelines for water resources valuation to support implementation of the European Water Framework Directive. Between 2011 and 2013 he led the TEEB (The Economics of Ecosystems and Biodiversity) for Europe follow-up project for DG Environment of the European Commission. He has led work packages on economics in several EU funded interdisciplinary research projects such as ECOWET (ecological-economic analysis of wetland ecosystem services), BRIDGE (economic analysis in support of the 2006 EU Groundwater Directive), and more recently in SIRRIMED (economic analysis of sustainable irrigation water management), POLICYMIX (economic analysis and design of payments for ecosystem services and biodiversity), CLEANSEA (Clean Litter Free European Marine Environment) and REFORM (Restoring River Ecosystems in Europe). He is among others a member of the international Advisory Boards of the Vienna Technical University Doctorate Program on Water Resource Systems and the International Institute for Applied Systems Analysis (IIASA), and a peer reviewer for the Netherlands Scientific Research Council (NWO) and the Netherlands Commission for Environmental Assessment.



Dr. Tom Buijse

Deltares, the Netherlands

Dr. Tom Buijse (1962) is a specialist in freshwater ecosystem health and restoration. He obtained his PhD degree in 1992 on fish population dynamics in a large shallow freshwater lake. From 1993 onwards his research and consultancy concentrated on ecological rehabilitation of large rivers such as the Rhine, Danube and Volga and fish communities as indicator for freshwater ecosystem quality. His expertise on the potential to restore freshwater ecosystems was subsequently applied to implement the European Water Framework Directive in the Netherlands and to develop fish-based assessment methods for rivers. He has 40+ peer-reviewed scientific publications and was the prime organizer of and guest-editor for an international conference on large river rehabilitation in 2003.

The present research focuses on the hydromorphological rehabilitation of rivers and tuning the implementation of environmental legislation with other socio-economic demands such as flood protection and navigation. Since November 2011 he coordinates the 4-yr large integrated EU-funded research project REFORM (Restoring Rivers for Effective Catchment Management) involving 26 European partners. His 20-yr research and consultancy experience covers rivers, floodplains, lakes and deltas.



Professor Dr. Ian Cowx

Director of Hull International Fisheries Institute (HIFI), Hull University

[Ian Cowx](#) is Professor of Applied Fisheries Science and Director of [Hull International Fisheries Institute](#) at the University of Hull, UK. He is also Adjunct Professor at the Department of Fisheries and Wildlife at Michigan State University. His field of expertise cover a number of topics, including rehabilitation of inland fisheries, stock assessment for management purposes, impact of dams on fisheries, management of alien invasive species and aquatic resource management planning. His scientific understanding and management of the world's freshwater fisheries have led to his role as Editor in Chief for Fisheries Management and Ecology and Chairman at the East Yorkshire Rivers Trust. Ian is strongly involved with knowledge transfer to stakeholders through workshops and to scientists through peer review

publications, and has edited 14 books and published over 200 articles. He has been involved in international fisheries for many years and now spends considerable time in the Mekong region trying to reconcile the impact of large scale dam development on fisheries.

Ian will be awarded [The Beverton medal](#) at the FSBI's 2015 symposium in Plymouth in July, it is awarded to a distinguished scientist for a lifelong contribution to all aspects of the study of fish biology and/or fisheries science, with a focus on ground-breaking research. It follows his award in 2012 of the International Fisheries Science Prize in honour of his life-time contribution to fisheries science and conservation, which is awarded every 4 years by the World Council of Fisheries Societies.



Dr. Nikolai Friberg

Research Manager, NIVA, Norwegian Institute for Water Research

Nikolai Friberg have more than 20 years research experience with in the field of freshwater ecology from working both in Denmark and abroad. His main focus of research has been on applied issues and how anthropogenic disturbance impact freshwater communities. With a background in zoology, his main organism group of study has been benthic freshwater macroinvertebrates with a focus on community ecology. His science has been centered on four overall themes: 1) The influence of habitats and anthropogenic stressors (organic pollution, pesticides etc.) on stream biota and ecosystem processes; 2) Influence of riparian areas and catchment land use on stream communities and biological structure; 3) Effects of restoration on riverine ecology and recovery; 4) Effects on climate change on stream ecosystem structure and functioning including food web architecture He is currently Research Manager for the section on Freshwater Ecology at the Norwegian Institute for Water Research (NIVA) and Cheney Research Fellow at water@leeds, University of Leeds. He is work package leader in the EU FP 7 project, REFORM on the impact of habitat degradation on stream biota and ways of restoring rivers successfully in an ecological context and is furthermore heading a research project from the Danish EPA on the development of a pesticide impact indicator to be used in Danish stream risk assessment. Nikolai Friberg is a visiting scientist and project partner on two NERC grants on climate change and freshwater ecosystems.

Publications: <http://scholar.google.dk/citations?user=ocw18ZIAAAAJ&hl=da>



Mr. Drs. Peter C.G. Glas

Regional Water Authority de Dommel, the Netherlands

Peter C.G. Glas Col.(R) M.Sc. LL.M. (1956) was appointed in 2003 by H.M. Queen Beatrix of The Netherlands to serve as chairman of the Regional Water Authority De Dommel. Previously he worked as an environmental consultant and held various management positions from 1983 – 2003 with WL | Delft Hydraulics (now Deltares) and the Dutch Ministry of Environment. The Regional Water Authority De Dommel is responsible for surface-water management, flood control, sanitation, irrigation and drainage, and services about one million inhabitants in the greater Eindhoven area. Peter Glas serves on the executive board of the Dutch Association of Regional Water Authorities since 2005 and was elected president in 2010. In this capacity he represents 10.000 employees of 23 Regional Water Authorities with an annual turnover of €2,7 billion. In 2013 he was appointed international chair of the Water Governance Initiative of the OECD in Paris. Peter Glas is frequently invited to chair seminars and gives speeches on topics related to climate change and water management.



Professor Dr. Stan Gregory

Department of Fisheries & Wildlife, Oregon State University

Dr. Stan Gregory is an Emeritus Professor and Distinguished Professor of Fisheries in the Department of Fisheries & Wildlife at Oregon State University. He has been a faculty member in the Department of Fisheries & Wildlife at OSU since 1981 and has been a leader of the Stream Team at Oregon State for more than three decades. He has studied streams, rivers, and lakes in the Pacific Northwest, and has been leading studies of the Willamette River for the last 20 years. He has taught undergraduate and graduate courses in the study of limnology and freshwater ecology at OSU for more than 30 years. His fields of expertise include stream ecosystems, landscape perspectives for stream ecosystems, influence of human activities on ecosystem structure and function, and development of restoration perspectives and practices that are consistent with natural stream processes. His research with David Hulse produced a book titled "Willamette Basin Atlas: Trajectories of Environmental and Ecological Change" in 2002 and a special issue in Ecological Applications in 2004.



Professor Angela Gurnell

Queen Mary University of London

Angela Gurnell is Professor of Physical Geography at Queen Mary University of London (QMUL). In addition to QMUL, she has held academic posts at King's College London, where she was Head of the Geography Department, the University of Birmingham and the University of Southampton. In relation to the administration of research, she has served on several committees and peer-review panels of the UK's Natural Environment Research Council, including serving as Chair of their Freshwater Sciences Peer Review Committee. Her research has been recognised through the award of the Victoria medal by the Royal Geographical Society and the Linton medal by the British Society for Geomorphology. Over her 40 year research career she has published over 170 journal papers, and 70 book chapters and full conference papers, mainly focussing on interactions among vegetation and hydrological and fluvial processes and their implications for sustainable river management. This research has explored the mechanical properties of individual plant species, the contribution of plants to fluvial landform construction, the role of rivers in plant propagule dispersal, and the mechanisms by which vegetation influences the broad morphology of rivers and their corridors. This 'blue-skies' research has contributed to her work on river restoration and the rehabilitation of urban rivers, where she takes the view that the most sustainable solutions focus on providing the conditions in which the river can restore itself.



Professor Dr. Daniel Hering

University of Duisburg-Essen, Department Aquatic Ecology

Studies of Biology (University of Marburg, Germany), PhD 1996 on aquatic-land interactions in alpine floodplains (more specifically: on ground beetles feeding on aquatic insects). Postdoc at the US Forest Service in Corvallis (Oregon). Since 1997 working for the University of Duisburg-Essen, currently as full professor. Research areas: River assessment (development of invertebrate-based methods), river restoration (how to different organism groups and functional parameters respond?), large-scale patterns in freshwater biodiversity, dispersal and recolonization of aquatic insects, river restoration and agriculture. Coordination of EU-funded projects AQEM (river assessment with invertebrates), WISER (assessment methods for lakes, coastal zones and rivers) and MARS (effects of multiple stressors).



Professor Dr. Phoebe Koundouri

Athens University of Economics and Business, Greece

Professor Dr. Phoebe Koundouri holds a PhD (2000), MSc (1996) and MPhil (1995) in Economics from the University of Cambridge (UK). She is a highly cited academic author ranked in the top 1.5% of all female economists in the world. She is Professor in Economic Theory and Econometrics at the School of Economics, Athens University of Economics and Business (Greece) and the Grantham Research Institute on Climate Change and the Environment, London School of Economics (UK). She is also the Founder and Scientific Director of ICRE8: International Center for Research on the Environment and the Economy (www.icre8.eu). She is the Vice President of the European Association of Environmental and Resource Economists. In the past she held academic positions at the University of Cambridge, University College London, University of Reading, London Business School, and University of Cyprus.

Central to Koundouri's research is the concept of 'total economic value of public goods' and in particular the value humans derive from natural resources/environment/ecosystem. Her main research goal is to refining the theoretical models and empirical methods used in the field of natural resource, ecological & agricultural economics, towards: (a) better understanding of the concept and determinants of the total economic value of ecosystem goods and services, (b) more accurate modelling of this value, (c) more robust estimation of this value, (d) more efficient integration of this value in interdisciplinary resource management (and policy-making). Areas of research as per EconLit: Environmental, Natural Resources and Agricultural Economics and Econometrics; Economic Sustainability, Long-Run Cost-Benefit Analysis and Discounting; Non-market (public good) Valuation; Agricultural Economics and Finance; Interdisciplinary Approaches to Natural Resources Management and Policy; Econometric Methods; Philosophy of science.

She has published 14 edited books and monographs, and more than 250 articles in edited volumes and highly ranked academic journals. She is co-editor (Environment and Resource Economics, the official journal of the European Association of Environmental and Resource Economists), associate editor and editorial board member in 20 academic journals, including Review of Environmental Economics and Policy, Economics-ejournal, Environmental Science and Technology, Review of Agricultural and Environmental Studies, Journal of Environmental Economics and Policy, International Journal of Environmental Research and Public Health, Water Resources and Economics, Environment and Development Economics (2005-2010),

etc). Moreover, she has supervised a number of PhD students, all of them now working in academia as post-doc researchers, lecturers and assistant professors.

Since 1996, she has coordinated and/or participated, in more than 50 research projects on natural resources management issues funded by the European Commission (mainly DG Research and DG Environment), the World Bank, OECD, European Bank of Reconstruction and Development, UN, NATO, WHO, as well as many other international and national organizations and governments of developed and developing countries. Moreover, she has organized a number of international conferences mainly in the field of water resource economics and management.

Over the last two decades Phoebe Koundouri has given keynote and public lectures all over the world, and received scholarships and prizes for academic excellence from various academic institutions and foundations. She is included in various Who's Who and has recently (in 2012) received the 2009 Publication Award of the European Association of Agricultural Economists.

Personal Webpage: <http://www.icre8.eu/founder-scientific-director>



Prof. Dr. Jaap Kwadijk

Deltares, the Netherlands

Jaap Kwadijk is director of science at Deltares, the Netherlands research institute for applied research in the field of water, subsurface and infrastructure. He is also part time Professor modeling water management and climate at the Twente University. Jaap Kwadijk received his PhD at the University Utrecht in 1993 on the impact of climate change on the River Rhine. Since 1997 he has been employed at WL|Delfthydraulics/Deltares where he has been involved in hydrological, water resources and climate change impact assessment studies. He joined in many international projects on flood forecasting, and water resources management. He lived for two years in Egypt where he was team leader of an international group of scientists and consultants that aimed at developing long term strategies for the water management of lake Nasser.



Dr. Erik Mosselman

Deltares & Delft University of Technology

Dr. Erik Mosselman is an expert in river engineering and fluvial morphodynamics and hydrodynamics. He worked on the Rhine, the Meuse, the Brahmaputra, the Ganges, Indus tributaries, the Amazon, the Congo, the Rhône, the Loire and numerous other rivers. He developed and applied his knowledge in projects of bank protection, river training, safety against flooding, navigability improvement and ecological river restoration, as well as in academic research. Key topics in his research are river-bank erosion, bars, meandering, braiding, bifurcations and avulsions. He has a keen interest in nature-based engineering for river restoration and adaptive river training. His expertise in flood risk management made him a member of teams to review flood disaster events and flood risk management policies in France, Colombia and Canada. He has been involved in the Room for the River project in the Netherlands for over 20 years, most recently in the role of national auditor of morphological impact assessment studies. He chairs the Morphological Triangle for Dutch research collaboration between Rijkswaterstaat, Unesco-IHE, Deltares and the universities of Delft, Twente, Utrecht and Wageningen. In the REFORM project, he is responsible for work package WP6 on “Applications and tools”.



Dr. Hervé Piégay

Research Director, CNRS – National Centre of Scientific Research, ENS of Lyon, France

Prof. Piégay is involved in integrated sciences for rivers and is strongly interacting with practitioners (Water Agencies, Regions, Ministry of Ecology, ONEMA, Compagnie Nationale du Rhône, EDF) providing knowledge for river management, planning and restoration and methodological frameworks and tools using GIS and remote sensing. He recently coordinated an international team on the redynamisation of the Rhine downstream from Kembs and a research program focused on feedbacks from monitoring programs conducted for assessing river restoration. Since 2010, he is the research leader of the scientific team working on the Rhône valley, being in charge of the Rhône Observatory of Human and Environment Interactions (33 full-time researchers involved; strong partnership with most of the stakeholders involved on the river). He has contributed to more than 200 papers in peer-review journals and book chapters and has coordinated several edited books such as Tools in Fluvial Geomorphology with M.G. Kondolf (2003, 2015), Gravel-bed rivers 6 :

From process understanding to river restoration with H. Habersack and M. Rinaldi (2007) or fluvial remote sensing for science and management with P. Carbonneau (2012).

http://umr5600.univ-lyon3.fr/chercheur/piegay/piegay_uk.html



Peter Pollard

Scottish Environment Protection Agency (SEPA)

Since 2000 Peter Pollard has worked for the Scottish Environment Protection Agency (SEPA) and is currently manager of the national water policy unit. SEPA is responsible for river basin management planning in Scotland. It is also responsible for monitoring the water environment and is Scotland's principal environmental regulator, controlling, among other things, water abstraction, dam construction and operation, other engineering works in the water environment; and point and diffuse source pollution. Peter has advised on the development of much of the legislation that now underpins protection of water in Scotland. Prior to joining SEPA, Peter worked for a number of years as an environmental consultant and then for a non-government environmental organization, coordinating the production of catchment management plans. Peter has a post-graduate degree in environmental science.



Dr. Philip Roni

Watershed Program, Northwest Fisheries Science Center, NOAA Fisheries

Dr. Roni has 25 years experience as a fisheries scientist and leads the Watershed Program at the NOAA Northwest Fisheries Science Center where he directs the research of more than 20 scientists conducting habitat research. His research for the last 20 years has concentrated on planning, prioritization, and evaluating various watershed restoration techniques. He has published numerous papers on restoration including the books "Stream and Watershed Restoration: a guide to restoring riverine processes and habitat" (2013 Wiley-Blackwell) and "Monitoring Stream and Watershed Restoration" (2005 American Fisheries Society). Current research projects include estimating salmonid egg-to-fry survival, evaluation effectiveness of large restoration

programs, and salmon and steelhead response to whole watershed restoration. He received a Presidential Early Career Award (2004) from the US Government and a Certificate of Achievement (2012) from the AFS for his contributions to restoration science. He has both M.S. and a Ph.D. from the University of Washington where he is an Affiliate Assistance Professor in the School of Aquatic and Fishery Sciences.



Professor Dr. Klement Tockner

Leibniz-Institute of Freshwater Ecology and Inland Fisheries (IGB, Berlin)

Klement Tockner is director of the Leibniz-Institute of Freshwater Ecology and Inland Fisheries (IGB, Berlin) and professor for Aquatic Ecology at the Freie Universität Berlin and. He received a PhD from the University of Vienna and a Titulary Professorship at ETH. He has special expertise on freshwater biodiversity, ecosystem functioning, and river and wetland management. He is Co-Editor of the journal *Aquatic Sciences* and Subject Editor of the journal *Ecosystems*. He has published more than 200 scientific papers including 120 ISI papers. In 2009, he edited a comprehensive book on European Rivers (*Rivers of Europe*, Elsevier). Klement Tockner has successfully managed large inter- and transdisciplinary projects (e.g. EC-funded project BioFresh; www.freshwaterbiodiversity.eu). He is member of several scientific committees and advisory boards including the crosscutting group on freshwater biodiversity of DIVERSITAS, GEO-BON, and elected member of the Austrian Academy of Sciences and the German Academy of Sciences (Leopoldina).



Dr. Christian Wolter

Leibniz-Institute of Freshwater Ecology and Inland Fisheries (IGB, Berlin)

Christian Wolter is by training fisheries engineer. He has got a Diploma in Fisheries Science and Fish Production and a PhD in population genetics of common freshwater fishes, both from Humboldt-University, Berlin, Germany. In 1991 he started his career as research assistant at the Institute for Inland Fisheries Berlin with the investigation of fish migration facilities. In 1992 he became a scientist at the Leibniz-Institute of Freshwater Ecology and Inland Fisheries (IGB), Berlin, in the Department Biology and Ecology of Fishes.

His research interests comprise the structure of fish assemblages in large rivers, waterways and urban waters, the influence of ultimate and proximate factors on river fish assemblages, environmental and urbanization effects on river fish, historical fish assemblages, fish-faunistic references, fish-based environmental assessment, river rehabilitation as well as potential impacts of non-native species, fisheries management and historic trajectories in water usage and land-scape development. The most recent work focuses on the rehabilitation and the ecological potential of human dominated waterways. Central in his research is sound empirical evidence and the search for principal cause effect chains and bottlenecks.

From 2004 to 2010 CW was the coordinator of the IGB's research focus "Sustainable Management of Aquatic Ecosystems". Since 2010 he is the coordinator of the cross-cutting research domain "Human-Aquatic Environment Interactions". CW teaches "Fish Conservation" at Humboldt-University and has supervised numerous master and PhD students. Since 2004, CW has coordinated and/or participated, in more than 40 research projects on river fish ecology and environmental assessment funded by the European Commission, the German Federal Ministry of Education and Research, the Financial Instrument for Adjusting Fisheries and several regional authorities.



Dr. Guy Woodward

Imperial College London, UK

I am a Reader (Associate Professor) at Imperial College London, as well as the Series Editor for *Advances in Ecological Research* and the Co-Leader of the British Ecological Society Aquatic Group. I am also on the Scientific Committee of the Future Earth EcoServices Project, which spans a range of disciplines from both the natural and social sciences.

My main research interests are focused on quantifying the impacts of stressors (climate change, acidification, eutrophication, species invasions and habitat alteration) on the structure and functioning of aquatic ecosystems. A core focus of my work is to understand the links between patterns and processes in natural systems, and to develop a unified conceptual framework within which to advance ecological theory, using freshwaters as model systems. I am particularly interested in how "metabolic theory" and simple rules can be applied to understand the properties of complex ecological systems, such as food webs. Body size and temperature determine basal metabolic rate, and the consequences of this are manifested across multiple levels of biological organisation, from molecules, to individuals, to entire ecosystems. My work has addressed not just the impacts of stressors, but also how they might be remediated, by manipulating both biotic and/or abiotic drivers. My interest in river restoration reflects my interest in applying ecological theory to real-world issues and how to link the different components of biodiversity to ecosystem services.

Excursion 'ROOM FOR THE RIVER'

The excursion (Thursday 2 July; 12:30 – 21:00 hr) will visit 'Room for the River' where projects integrate flood protection, ecological rehabilitation, navigation and urban developments (Figure 1). One location 'Room for the River Waal' is a dike relocation project near the city of Nijmegen where urban development and flood protection are the primary goals. The other location is the floodplain nature reserve 'Millingerwaard' where ecological restoration and flood protection go hand-in-hand. The excursion ends with a 2.5 hr boat trip on the River Rhine with a pancake dinner.



Dike relocation near the city of Nijmegen



Figure 1 Excursion 'Room for the River'

Practical information

ADDRESSES OF CONFERENCE VENUE AND SELECTED HOTELS

Table 1. hotels contact details

Name	Address	Tel no	website
Conference venue Hof van Wageningen	Lawickse Allee 9, 6701 Wageningen	+31 317 490 133	http://www.hofvanwageningen.nl
Hotel De Wageningsche Berg	Generaal Foulkesweg 96 6703 DS Wageningen	+31 317 495 911	http://hoteldewageningscheberg.nl
Van der Valk hotel	Bastion 73 3905 NJ Veenendaal	+31 318 799060	www.hotelveenendaal.com

REGISTRATION

Registration is open Monday June 29 from 17:00 to 19:00 hr and Tuesday June 30 from 08:00 to 08:55 hr. Registration is in the Lounge on the ground floor of the conference venue 'Hof van Wageningen'.

TRAVEL

Train

Travel to Ede-Wageningen railway station. From Amsterdam Airport it is one hour either direct or with one stopover. For the greater part of the day there are four trains per hour. For train schedules please consult <http://www.ns.nl/en/travellers/home>

Bus

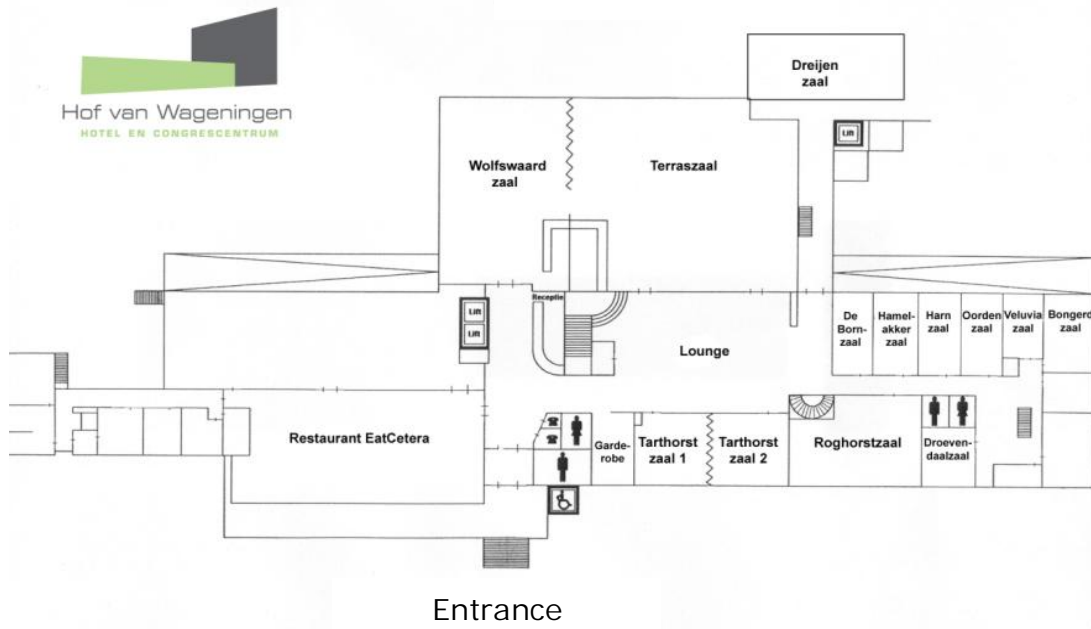
From Ede-Wageningen railway station there are frequent bus connections (88, 52) to the centre of Wageningen. Travel time is 20 – 25 minutes. Tickets can be bought on the bus. Shortly before the conference we will upload the actual bus schedule on the website. The conference venue is 250 m from the bus station. For time tables/prices, please visit the Dutch door-to-door journey planner on the following website: <http://9292.nl/en>

CONFERENCE DINNER

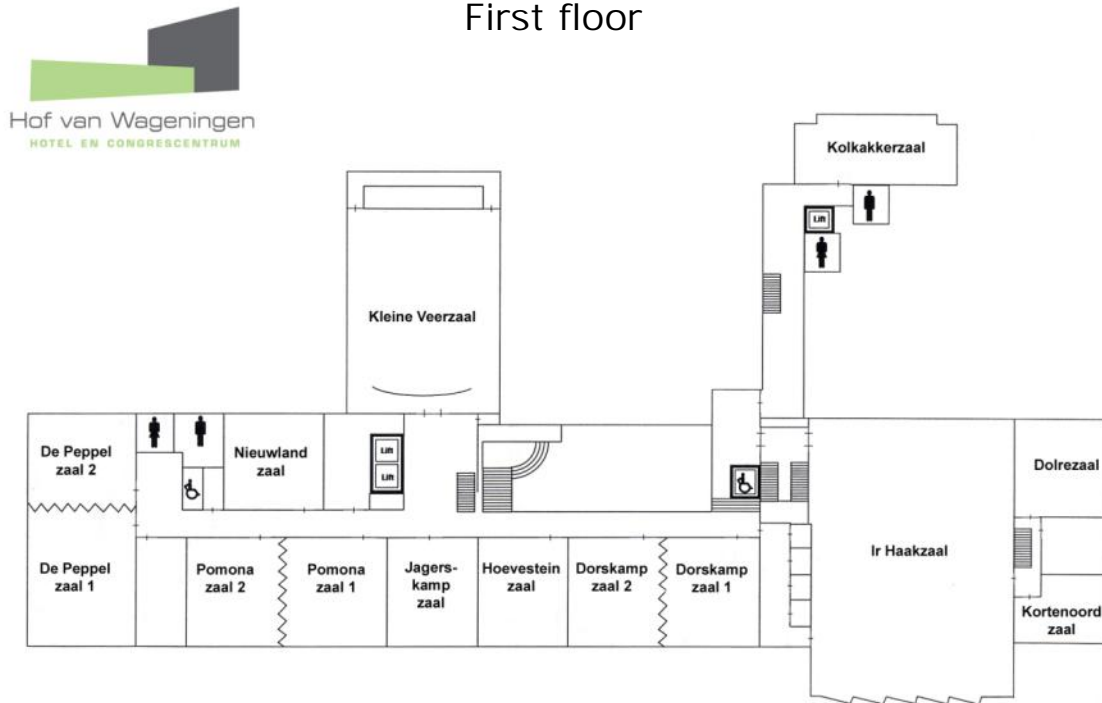
The conference dinner is at hotel/restaurant 'De Wageningsche Berg' (Table 1, Figure 2 and 3).

FLOOR MAPS CONFERENCE VENUE

Ground floor



First floor



REFORM

REstoring rivers FOR effective catchment Management

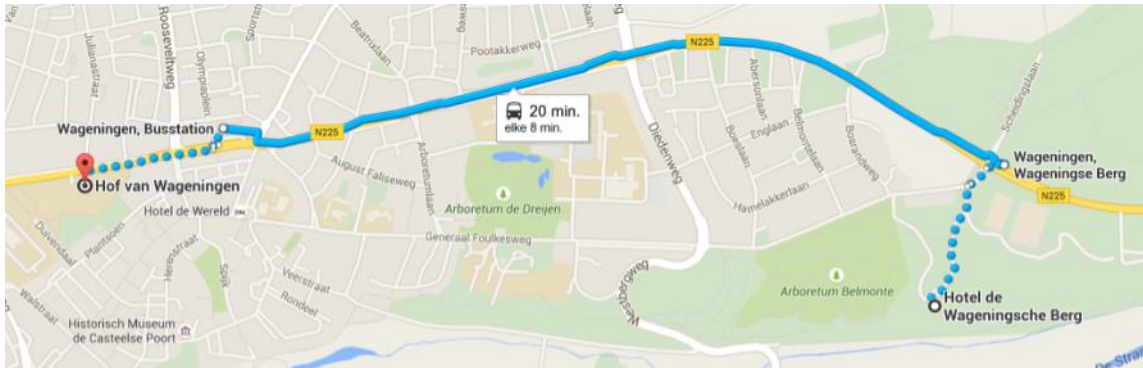


Figure 2 Bus connection Conference venue Hof van Wageningen – Hotel de Wageningsche Berg

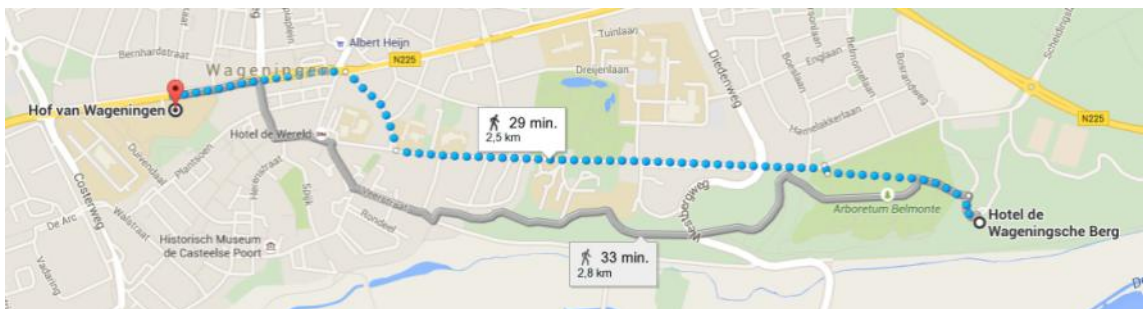


Figure 3 Walking & biking route Conference venue Hof van Wageningen - Hotel de Wageningsche Berg

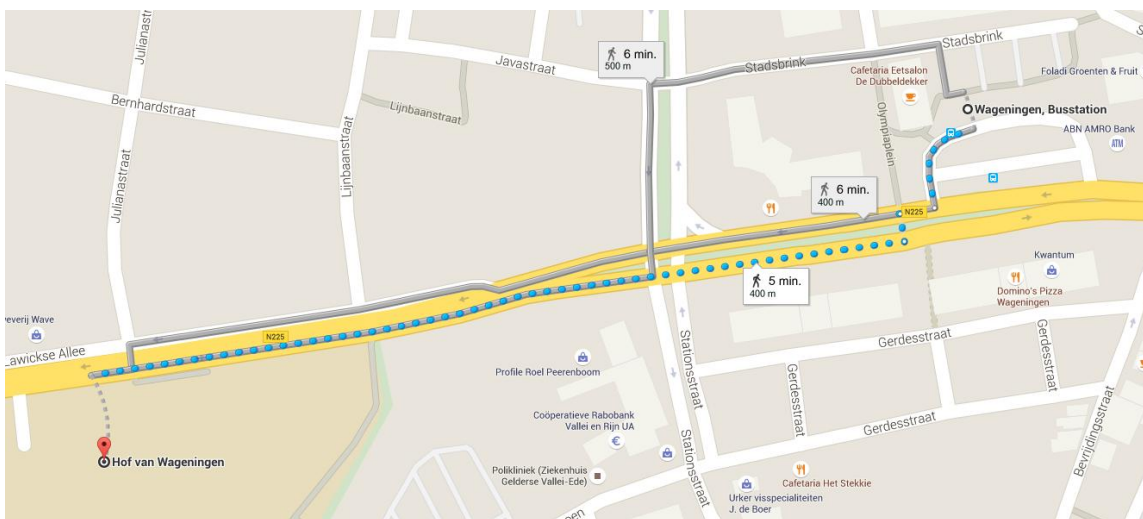


Figure 4 Route Wageningen bus station to conference venue Hof van Wageningen

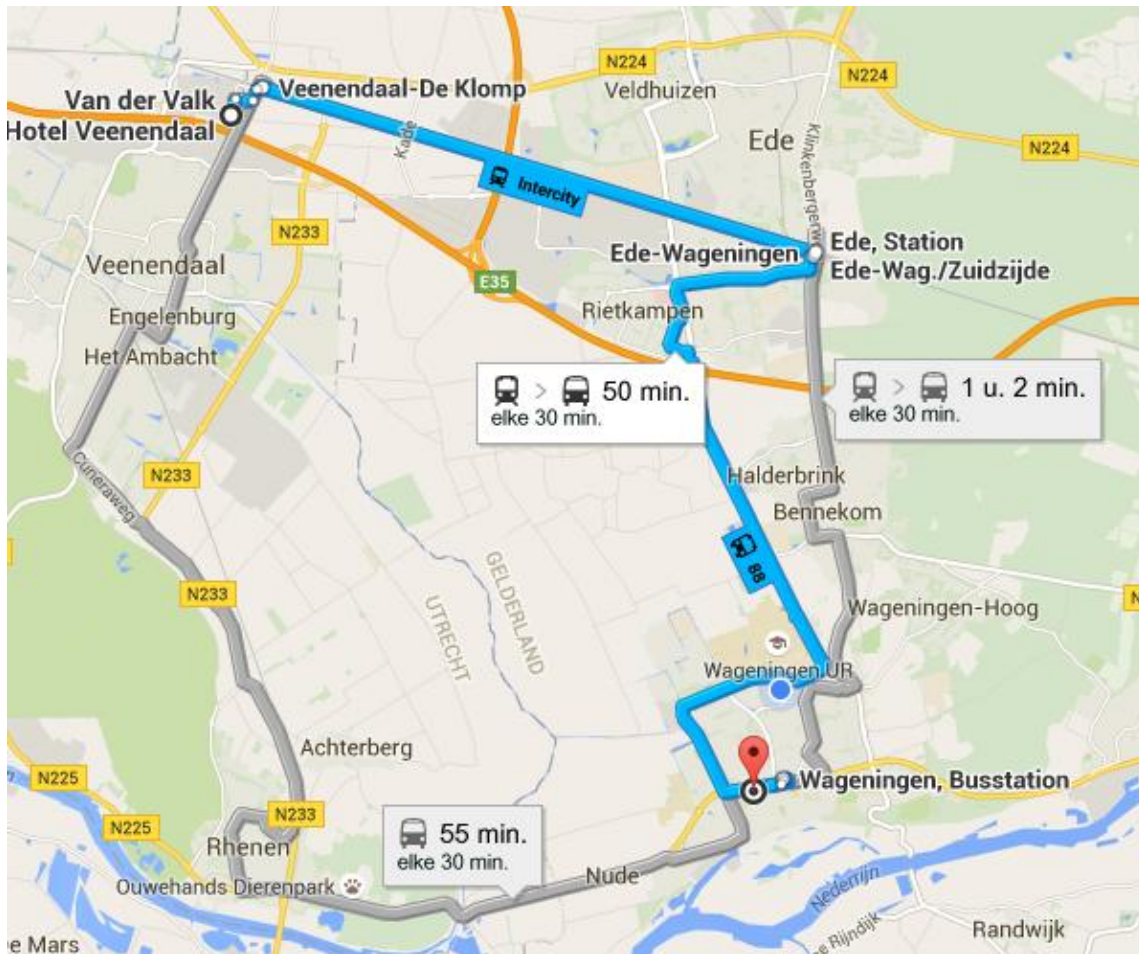


Figure 5 Public transport Conference venue Hof van Wageningen - Van der Valk Hotel Wageningen

CONFERENCE SECRETARIAT

Email: REFORM2015@deltares.nl

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