



SCARCE 1st
ANNUAL
CONFERENCE

Understanding effects of global
change on water quantity and
quality in river basins

2-3 December
2010,
Girona, Spain



SCARCE is a CONSOLIDER-INGENIO project that aims to understand the effects on rivers being submitted to multiple stressors. SCARCE is developed at four river watersheds in the Mediterranean basin, in order to understand trends and potentials operating at different scales. Iberian Rivers and most of those located in the Mediterranean area are under strong environmental stress due to alterations in water flow, light and temperature regime, nutrient concentration and increasing arrival of toxicants. Potential effects in arid and semiarid regions are related with decreasing resources, variations in water quality, and effects in the ecosystems. These may be related to climate change but also to the human pressure on these systems, which is overwhelming and still rising. Effects of habitat deterioration, point-source or diffuse inputs of nutrients and contaminants, and species invasion or extinction may be relevant on their impact in the ecosystem functioning and services, but also will have social and economic implications. The first Conference SCARCE aims to gather all interested researchers and managers at the cross-roads of using water resources and keeping on conservation and ecological quality.

PRELIMINARY PROGRAM

THURSDAY, 2nd December 2010

Scarcity, quality, resources, ecosystems, and society: challenges ahead
Sergi Sabater¹ and Damià Barceló^{1,2}

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² Catalan Institute for Water Research, Girona, Spain

Session I: Assessing and predicting global change effects in water resources and ecosystems

*Predicting and Planning for Global Change Effects for the California
Delta, USA*

Cliff Dahm

University of New Mexico, Albuquerque, USA

Groundwater Management in Iberian River Basins

Emilio Custodio

Technical University of Catalonia, Barcelona, Spain

Impacts of climate change on waterways and navigation: the German
research programme KLIWAS

Helmut Fischer

German Federal Institute of Hydrology, Koblenz, Germany



Effects of global change on the functioning of Mediterranean river ecosystems

Arturo Elosegi¹, José Ramón Díez¹ and Vicenç Acuña²

¹ University of the Basque Country, Bilbao, Spain

² Catalan Institute for Water Research, Girona, Spain

Medium and long term water resources modelling as a tool for planning and global change adaptation. Application to the Llobregat Basin

Rosa Maria Pieras¹, Laurent Pouget¹, Isabel Escaler¹, Gemma Serra¹ and Daniel Sempere²

¹ CETaqua, Water Technology Center, Barcelona, Spain

² Centre of Applied Research on Hydrometeorology, Barcelona, Spain

Climate change scenarios downscaling to bridge the gap between dynamical models and the end user: application for hydrometeorological impact studies in Spain

Marco Turco¹, Maria del Carmen Llasat¹ and Pere Quintana Seguí²

¹ University of Barcelona, Barcelona, Spain

² Observatori de l'Ebre, Roquetes, Spain.

Distributed hydrological modelling within SCARCE project: integrating water, sediments, quality and vegetation.

Félix Francés, Chiara Medici, Gianbattista Bussi and Alicia García

Technical University of Valencia, Valencia, Spain

The challenge of analysing climate change impacts on the hydrology of Mediterranean river basins - A perspective from the CLIMB project

Ralf Ludwig

Ludwig-Maximilians-Universitaet, München, Germany

Morphological adjustments in riverchannels: the case of large Mediterranean regulated rivers

Ramón J. Batalla^{1,2} and Damià Vericat²

¹ University of Lleida, Lleida, Spain

² Forest Technology Centre of Catalonia, Solsona, Spain

Enhancement of Soil Aquifer Treatment to Improve the Quality of Recharge Water in the Llobregat River Delta Aquifer

Marta Hernández García¹, Joana Tobella Brunet¹ and Manuela Barbieri^{2,3}

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³ Technical University of Catalonia, Barcelona, Spain

Session II: Water quality under scarcity

The AquaTerra Project: Occurrence and Fate of Priority and Emerging Contaminants in the Ebro River Basin

Mira Petrovic

Institute of Environmental Assessment and Water Research, Barcelona, Spain

Identification of Key Biological Mechanisms Associated with Specific Contaminants

Peter-Diedrich Hansen

Technische Universität Berlin, Berlin, Germany

Quantitative characterization of mixture complexity of environmental chemical monitoring inventories: Tentative relationships with ecotoxicity and ecosystem variables

Antoni Ginebreda¹, Aleksandra Jelić¹, Mira Petrović², Miren López de Alda¹, Damià Barceló^{1,3}, Marianne Köck¹, Marta Ricart^{3,4}, Helena Guasch⁴, Rikke Brix¹, Anita Geiszinger⁴, Julio C. López-Doval⁵, Isabel Muñoz⁵, Cristina Postigo¹, Anna M. Romani⁴, Marta Villagrasa³, Sergi Sabater^{3,4}, Maria H. Conceição⁶

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⁴ University of Girona, Girona, Spain

⁵ University of Barcelona, Barcelona, Spain

⁶ Universidade de Brasília, Brasília, Brazil

Effects of water abstraction and chemical pollutants on fish assemblages in Mediterranean streams

Emili García-Berthou, Lluís Benejam, Josep Benito, Gerard Carmona-Catot, Leslie Faggiano and Roberto Merciai

University of Girona, Girona, Spain

Analysis of perfluorinated compounds in water and sediments

Yolanda Picó

University of Valencia, Valencia, Spain

FRIDAY, 3rd December 2010

Influence of water scarcity on the effects of toxicants in fluvial biofilms

Helena Guasch¹, Vicenc Acuña², Natàlia Corcoll¹, Berta Bonet¹ and Alexandra Serra³

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³ Centre d'Estudis Avançats de Blanes, Girona, Spain; ICRA



Application of new mass spectrometric (MS) techniques for the efficient evaluation of contaminants in river waters. A case of study, the Henares River (Madrid, Spain)

A.R. Fernández-Alba^{1,2}, M.M. Gómez-Ramos¹, M.J. Gómez², M.J. Martínez-Bueno¹, A. Pérez^{1,3} and E. García-Calvo²

¹ Pesticide Residue Research Group, University of Almería, Almería, Spain

² IMDEA-Agua, Madrid, Spain

³ Facultad de Química, Universidad de la República, Montevideo, Uruguay

Applicability of Water Passive Samplers to Assess the Chemical Pollution and Ecotoxicity of Catalan Rivers

Neus Roig^{1,2}, Martí Nadal², Jordi Sierra^{1,3}, Antoni Ginebreda⁴, Marta Schuhmacher^{1,2} and José L. Domingo²

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² Laboratory of Toxicology and Environmental Health, Universitat Rovira i Virgili, Reus, Spain

³ Universitat de Barcelona, Barcelona, Spain

⁴ Institute of Environmental Assessment and Water Research, Barcelona, Spain

Session III: Facing the challenges ahead: approaches and case studies

Urban Ecosystems - the Next Challenge

Nancy Grimm

University of Arizona, Tucson, USA

The Modelkey Project: Results from the Llobregat River Basin

Isabel Muñoz

University of Barcelona, Barcelona, Spain

How ecosystem services could improve hydrologic sustainability in river basins

Driss Ennaanay

Stanford University, Stanford, USA

Emerging tools for risk assessment of key toxicants

Roberta Carafa¹, Montserrat Real¹, Antoni Munné², Antoni Ginebreda³, Helena Guasch⁴

¹ URS, Barcelona, Spain

² Agència Catalana de l'Aigua, Barcelona, Spain

³ Institute of Environmental Assessment and Water Research, Barcelona, Spain

⁴ Universitat de Girona, Girona, Spain

Use of integrative decision support systems to assess impacts of climate change in water resources systems. Application to Júcar river basin, Spain

J. Andreu, A. Solera, J. Paredes, and M. Pulido

Technical University of Valencia, Valencia, Spain



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Valuing ecosystems services: opportunities and limits

Francesc La- Roca

University of Valencia, Valencia, Spain

A Divide and Conquer Approach to Cope with Uncertainty, Health Risk
and Decision Making in Hydrological Systems

**Xavier Sanchez-Vila¹, Felipe P. J. de Barros^{1,2}, Diogo Bolster^{1,3}, and
Wolfgang**

Nowak⁴

¹ Technical University of Catalonia, Barcelona, Spain

² Institute of Applied Analysis and Numerical Simulation University of Stuttgart,
Stuttgart, Germany

³ University of Notre Dame, USA.

⁴ Institute of Hydraulic Engineering, University of Stuttgart, 70569 Stuttgart, Germany.

Final remarks and closure of the meeting

Damià Barceló

Institute of Environmental Assessment and Water Research, Barcelona, Spain and
Catalan Institute for Water Research, Girona, Spain



POSTERS

- 1.- Climate-related shifts in matter budgets and phytoplankton dynamics in Germany's large rivers
Paulin Hardenbicker, Annette Becker and Helmut Fischer
German Federal Institute of Hydrology, Koblenz, Germany

- 2.- Functional responses of stream biofilms to intermittency
Timoner X.^{1,2}, von Schiller D.³, Acuña V.², Tockner K.³ and Sabater S.^{1,2}
¹ Institute of Aquatic Ecology, University of Girona, Girona, Spain
² Catalan Institute for Water Research, Girona, Spain
³ Leibniz - Institute of Freshwater ecology and Inland Fisheries, Germany

- 3.- Geomorphic characterization of mediterranean rivers. Field assessment of channel morphology and sedimentary structure
Lobera, G.¹, López-Tarazón, J.A.¹, Tena, A.¹, Damià Vericat^{2,3} and Ramon J. Batalla^{1,2}
¹ University of Lleida, Lleida, Spain
² Forest Technology Centre of Catalonia, Solsona, Spain
³ Aberystwyth University, Ceredigion, UK

- 4.- Assessment of ecosystem services in 4 Mediterranean basins
Marta Terrado¹, Vicenç Acuña¹, T Mohamedali², Driss Ennaanay² and Sergi Sabater¹
¹ Catalan Institute for Water Research, Girona, Spain
² Stanford University, Stanford, USA

- 5.- Illicit drugs and metabolites in waste and surface waters along the ebro and llobregat river basins: levels and trends
Nicola Mastroianni¹, Cristina Postigo¹, Miren López¹ de Alda and Damià Barceló^{1,2}
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² Catalan Institute for Water Research, Girona, Spain

- 6.- Occurrence of phosphodiesterase type V inhibitors and their metabolites in WWTP
Jaume Aceña¹, Bianca Ferreira da Silva^{1,2}, Victoria Osorio¹, Antonio A. Mozeto², Sandra Perez¹ and Damià Barceló^{1,3}
¹ Institute of Environmental Assessment and Water Research, Barcelona, Spain
² Departamento de Química - UFSCar, São Carlos, Brasil
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- 7.- Analysis of perfluorinated compounds in tap water of Spanish cities by liquid chromatography-mass spectrometry
Marta Llorca¹, Marinella Farré¹, Yolanda Picó² and Damià Barceló^{1,3}
¹ Institute of Environmental Assessment and Water Research, Barcelona, Spain
² University of Valencia, Valencia, Spain
³ Catalan Institute for Water Research, Girona, Spain
- 8.- Relation between the presence of pharmaceuticals and the hydrological parameters of the Llobregat river
Victoria Osorio¹, Oriol Algaba², Sandra Pérez¹, Antoni Ginebreda¹ and Damià Barceló^{1,3}
¹ Institute of Environmental Assessment and Water Research, Barcelona, Spain
²
³ Catalan Institute for Water Research, Girona, Spain
- 9.- Bioaccumulation potential of emerging brominated flame retardants along the different aquatic trophic levels
Maria Luisa Feo¹, Ethel Eljarrat¹ and Damià Barceló^{1,2}
¹ Institute of Environmental Assessment and Water Research, Barcelona, Spain
² Catalan Institute for Water Research, Girona, Spain
- 10.- Vulnerability and impact of climate change on water resources in semi-arid areas; example of the Essaouira Basin (Morocco)
H. Chamchati and M. Bahir
Faculty of Science Semlalia, Marrakech, Morocco
- 11.- Simulation of the water balance of the NE Iberian Peninsula
Pere Quintana Seguí¹, Marco Turco² and Maria del Carmen Llassat²
¹ Observatori de l'Ebre, Roquetes, Spain
² University of Barcelona, Barcelona, Spain
- 12.- Generation of future scenarios including climate and land use changes to assess flood risk in the Llobregat basin
Àngels Cabello¹, Marc Velasco¹, Isabel Escaler¹ and José I. Barredo²
¹ CETaqua, Water Technology Center, Barcelona, Spain
² Institute for Environment and Sustainability, Joint Research Centre, Ispra, Italy
- 13.- Understanding variability and thresholds for the management of ecosystem services
Honey-Rosés, J.
- 14.- Determination of pesticides in sediments: comparison of extraction procedures
Yolanda Picó
University of Valencia, Valencia, Spain



- 15.- Application of a Spatially Referenced Regression Model for the Estimation of Nutrient Sources Related to Land Uses in the Llobregat Basin

R. Aguilera, Rafael Marcé and Sergi Sabater

Catalan Institute for Water Research, Girona, Spain

- 16.- Response of community structure to sustained drought in Mediterranean rivers

Dani Boix¹, Emili García-Berthou¹, Stéphanie Gascón¹, Lluís Benejam¹, Elisabet Tornés^{1,2}, Jordi Sala¹, Josep Benito¹, Antoni Munné³, Carolina Solà³ and Sergi Sabater^{1,2}

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- 17.- Multiclass determination of UV absorbing chemicals in sediments along the Ebro River basin

Pablo Gago¹, Silvia Díaz-Cruz¹ and Damià Barceló^{1,2}

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- 18.- Polar pesticides in the Llobregat River (NE, Spain): Occurrence and risk assessment

Marianne Köck-Schulmeyer¹, Victoria Osorio¹, Sandra Pérez¹, Ramón López-Roldán², Susana González², Jose Luis Cortina², Miren López de Alda¹, Antoni Ginebreda¹, Damià Barceló^{1,3},

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