



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.

## FINAL PROGRAM

THURSDAY, 2<sup>nd</sup> December 2010

- 9.00 - 9.30**      **Registration**
- 9.30 - 9.50**      Scarcity, quality, resources, ecosystems, and society: challenges ahead  
**Sergi Sabater<sup>1</sup> and Damià Barceló<sup>1,2</sup>**  
<sup>1</sup> Institute of Environmental Assessment and Water Research, Barcelona, Spain  
<sup>2</sup> Catalan Institute for Water Research, Girona, Spain

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

*Chairperson: Damià Barceló*

- 9.50 - 10.20**      *Predicting and Planning for Global Change Effects for the California Delta, USA*  
**Cliff Dahm**  
*University of New Mexico, Albuquerque, USA*
- 10.20 - 10.50**      *Groundwater Management in Iberian River Basins*  
**Emilio Custodio**  
*Technical University of Catalonia, Barcelona, Spain*
- 10.50 - 11.10**      Impacts of climate change on waterways and navigation: the German research programme KLIWAS  
**Helmut Fischer**  
*German Federal Institute of Hydrology, Koblenz, Germany*



**11.10 - 11.30 Poster session/Coffee break**

*Chairperson: Cliff Dahm*

**11.30 - 11.50** Effects of global change on the functioning of Mediterranean river ecosystems

**Arturo Elosegi<sup>1</sup>, Ibon Aristi<sup>1</sup>, José Ramón Díez<sup>1</sup>, Sergi Sabeter<sup>2,3</sup> and Vicenç Acuña<sup>2</sup>**

<sup>1</sup> University of the Basque Country, Bilbao, Spain

<sup>2</sup> Catalan Institute for Water Research, Girona, Spain

<sup>3</sup> Univeristy of Girona, Girona, Spain

**11.50 - 12.10** The WATER CHANGE Project: Medium and long term water resources modelling as a tool for planning and global change adaptation. Application to the Llobregat Basin

**Isabel Escaler<sup>1</sup>, Laurent Pouget<sup>1</sup>, Daniel Sempere<sup>2</sup>, Pierre-Antoine Versini<sup>2</sup>**

<sup>1</sup> CETaqua, Water Technology Center, Barcelona, Spain

<sup>2</sup> CRAHI, Centre of Applied Research on Hydrometeorology. Barcelona, Spain

**12.10 - 12.30** Climate change scenarios downscaling to bridge the gap between dynamical models and the end user: application for hydrometeorological impact studies in Spain

**Marco Turco<sup>1</sup>, Maria del Carmen Llasat<sup>1</sup> and Pere Quintana Seguí<sup>2</sup>**

<sup>1</sup> University of Barcelona, Barcelona, Spain

<sup>2</sup> Observatori de l'Ebre, Roquetes, Spain.

**12.30 - 12.50** Distributed hydrological modelling within SCARCE project: integrating water, sediments, quality and vegetation.

**Félix Francés, Chiara Medici, Gianbattista Bussi, Alicia García, M. Barrios and M. Pasquato**

Technical University of Valencia, Valencia, Spain

**12.50 - 14.20 Lunch**

*Chairperson: Nancy Grimm*

**14.20 - 14.50** *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

**14.50 - 15.10** Morphological adjustments in riverchannels: the case of large Mediterranean regulated rivers

**Ramón J. Batalla<sup>1,2</sup> and Damià Vericat<sup>2</sup>**

<sup>1</sup> University of Lleida, Lleida, Spain

<sup>2</sup> Forest Technology Centre of Catalonia, Solsona, Spain

- 15.10 - 15.30** Enhancement of Soil Aquifer Treatment to Improve the Quality of Recharge Water in the Llobregat River Delta Aquifer  
**Marta Hernández García<sup>1</sup>, Joana Tobella Brunet<sup>1</sup> and Manuela Barbieri<sup>2,3</sup>**  
<sup>1</sup> CETaqua, Water Technology Center, Barcelona, Spain  
<sup>2</sup> Institute of Environmental Assessment and Water Research, Barcelona, Spain  
<sup>3</sup> Technical University of Catalonia, Barcelona, Spain
- 15.30 - 15.50** Follow-up of the state of the quality of the water in the area of competences of Andalusian council  
**Esperanza Caro**  
Junta de Andalucía, Sevilla, Spain

## Session II: Water quality under scarcity

*Chairperson: Amadeo R. Fernández-Alba*

- 15.50 - 16.20** *The AquaTerra Project: Occurrence and Fate of Priority and Emerging Contaminants in the Ebro River Basin*  
**Mira Petrovic<sup>1</sup>, Alícia Navarro-Ortega<sup>1</sup>, Alain Hildebrandt<sup>1</sup>, Meritxell Gros<sup>2</sup>, Ethel Eljarrat<sup>1</sup> and Damià Barceló<sup>1,2</sup>**  
<sup>1</sup> Institute of Environmental Assessment and Water Research, Barcelona, Spain  
<sup>2</sup> Catalan Institute for Water Research, Girona, Spain
- 16.20 - 16.40** *Identification of Key Biological Mechanisms Associated with emerging Contaminants and Risk Evaluation in Aquatic Systems*  
**Peter-Diedrich Hansen**  
Technische Universitaet Berlin, Berlin, Germany

## **16.40 - 17.00** Poster session/Coffee break

*Chairperson: Mira Petrovic*

- 17.00 - 17.20** Quantitative characterization of mixture complexity of environmental chemical monitoring inventories: Tentative relationships with ecotoxicity and ecosystem variables  
**Antoni Ginebreda<sup>1</sup>, Aleksandra Jelić<sup>1</sup>, Mira Petrović<sup>2</sup>, Miren López de Alda<sup>1</sup>, Damià Barceló<sup>1,3</sup>, Marianne Köck<sup>1</sup>, Marta Ricart<sup>3,4</sup>, Helena Guasch<sup>4</sup>, Rikke Brix<sup>1</sup>, Anita Geiszinger<sup>4</sup>, Julio C. López-Doval<sup>5</sup>, Isabel Muñoz<sup>5</sup>, Cristina Postigo<sup>1</sup>, Anna M. Romani<sup>4</sup>, Marta Villagrasa<sup>3</sup>, Sergi Sabater<sup>3,4</sup>, Maria H. Conceição<sup>6</sup>**  
<sup>1</sup> Institute of Environmental Assessment and Water Research, Barcelona, Spain  
<sup>2</sup> Institució Catalana de Recerca i Estudis Avançats, Barcelona, Spain.  
<sup>3</sup> Catalan Institute for Water Research, Girona, Spain  
<sup>4</sup> University of Girona, Girona, Spain  
<sup>5</sup> University of Barcelona, Barcelona, Spain  
<sup>6</sup> Universidade de Brasília, Brasília, Brazil



- 17.20 - 17.40** 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
- 17.40 - 18.00** Analysis of perfluorinated compounds in water and sediments  
**Yolanda Pico<sup>1</sup>, Matthias Onghena<sup>1</sup>, Marinella Farré<sup>2</sup>, Cristina Blasco<sup>1</sup> and Damià Barceló<sup>2,3</sup>**  
<sup>1</sup>Universitat de València, Burjassot, Valencia, Spain  
<sup>2</sup>Institute of Environmental Assessment and Water Research, Barcelona, Spain  
<sup>3</sup>Catalan Institute for Water Research, Girona, Spain

**21.00**                    **Joint dinner**

## FRIDAY, 3<sup>rd</sup> December 2010

*Chairperson: Antoni Ginebreda*

- 9.00 - 9.20** Influence of water scarcity on the effects of toxicants in fluvial biofilms  
**Helena Guasch<sup>1</sup>, Vicenc Acuña<sup>2</sup>, Natàlia Corcoll<sup>1</sup>, Berta Bonet<sup>1</sup> and Alexandra Serra<sup>3</sup>**  
<sup>1</sup>Institute of Aquatic Ecology, Girona, Spain  
<sup>2</sup>Catalan Institute for Water Research, Girona, Spain  
<sup>3</sup>Centre d'Estudis Avançats de Blanes, Girona, Spain; ICRA
- 9.20 - 9.40** 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<sup>1,2</sup>, M.M. Gómez-Ramos<sup>1</sup>, M.J. Gómez<sup>2</sup>, M.J. Martínez-Bueno<sup>1</sup>, A. Pérez<sup>1,3</sup> and E. García-Calvo<sup>2</sup>**  
<sup>1</sup>Pesticide Residue Research Group, University of Almería, Almería, Spain  
<sup>2</sup>IMDEA-Agua, Madrid, Spain  
<sup>3</sup>Facultad de Química, Universidad de la República, Montevideo, Uruguay
- 9.40 - 10.00** Applicability of Water Passive Samplers to Assess the Chemical Pollution and Ecotoxicity of Catalan Rivers  
**Neus Roig<sup>1,2</sup>, Martí Nadal<sup>2</sup>, Jordi Sierra<sup>1,3</sup>, Antoni Ginebreda<sup>4</sup>, Marta Schuhmacher<sup>1,2</sup> and José L. Domingo<sup>2</sup>**  
<sup>1</sup>Department of Chemical Engineering, Universitat Rovira i Virgili, Tarragona, Spain  
<sup>2</sup>Laboratory of Toxicology and Environmental Health, URV, Reus, Spain  
<sup>3</sup>Universitat de Barcelona, Barcelona, Spain  
<sup>4</sup>Institute of Environmental Assessment and Water Research, Barcelona, Spain

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

*Chairperson: Helena Guasch*

**10.00 - 10.30**     *Urban Ecosystems - the Next Challenge*  
**Nancy Grimm**  
*University of Arizona, Tucson, USA*

**10.30 - 10.50**     The MODELKEY project: Connections between chemical and ecological status in the Llobregat River Basin  
**Isabel Muñoz<sup>1</sup>, Damià Barceló<sup>2,3</sup>, Roberta Carafa<sup>4</sup>, Antoni Ginebreda<sup>2</sup>, Helena Guasch<sup>5</sup>, Miren López de Alda<sup>2</sup>, Julio López-Doval<sup>1</sup>, Marta Ricart<sup>5</sup>, Anna Romani<sup>5</sup>, and Sergi Sabater<sup>3,5</sup>**  
<sup>1</sup> Department of Ecology, University of Barcelona, Barcelona, Spain  
<sup>2</sup> Department of Environmental Chemistry, IDAEA-CSIC, Barcelona, Spain  
<sup>3</sup> Catalan Institute for Water Research (ICRA), Girona, Spain  
<sup>4</sup> Limnology Department / URS, Barcelona, Spain  
<sup>5</sup> Institute of Aquatic Ecology, University of Girona, Girona, Spain

**10.50 - 11.20**     *How ecosystem services could improve hydrologic sustainability in river basins*  
**Driss Ennaanay**  
*Stanford University, Stanford, USA*

**11.20 - 11.40**     **Poster session/Coffee break**

*Chairperson: Arturo Elosegi*

**11.40 - 12.00**     Emerging tools for risk assessment of key toxicants  
**Roberta Carafa<sup>1</sup>, Montserrat Real<sup>1</sup>, Antoni Munné<sup>2</sup>, Antoni Ginebreda<sup>3</sup>, Helena Guasch<sup>4</sup>**  
<sup>1</sup> URS, Barcelona, Spain  
<sup>2</sup> Agència Catalana de l'Aigua, Barcelona, Spain  
<sup>3</sup> Institute of Environmental Assessment and Water Research, Barcelona, Spain  
<sup>4</sup> Universitat de Girona, Girona, Spain

**12.00 - 12.20**     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, M. Ángel Pérez, and L. Hernández-Barrios**  
*Technical University of Valencia, Valencia, Spain*

**12.20 - 12.40**     Valuing ecosystems services: opportunities and limits  
**Miguel A. Gual<sup>1</sup>, Graciela Ferrer<sup>2</sup>, Francisco Morillas<sup>2</sup>, Francesc La-Roca<sup>2</sup>**  
<sup>1</sup> University Pablo de Olavide, Sevilla, Spain  
<sup>2</sup> University of Valencia, Valencia, Spain



- 12.40 - 13.00** A Divide and Conquer Approach to Cope with Uncertainty, Health Risk and Decision Making in Hydrological Systems  
**Xavier Sanchez-Vila<sup>1</sup>, Felipe P. J. de Barros<sup>1,2</sup>, Diogo Bolster<sup>1,3</sup>, and Wolfgang Nowak<sup>4</sup>**  
<sup>1</sup> Technical University of Catalonia, Barcelona, Spain  
<sup>2</sup> Institute of Applied Analysis and Numerical Simulation University of Stuttgart, Stuttgart, Germany  
<sup>3</sup> University of Notre Dame, USA.  
<sup>4</sup> Institute of Hydraulic Engineering, University of Stuttgart, 70569 Stuttgart, Germany.

### Final remarks and closure of the meeting

- 13.00 - 13.20** 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
- 13.20 - 15.00** **Lunch**
- 15.00** **End of meeting**

## 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.<sup>1,2</sup>, von Schiller D.<sup>3</sup>, Acuña V.<sup>2</sup>, Tockner K.<sup>3</sup> and Sabater S.<sup>1,2</sup>**  
<sup>1</sup> Institute of Aquatic Ecology, University of Girona, Girona, Spain  
<sup>2</sup> Catalan Institute for Water Research, Girona, Spain  
<sup>3</sup> Leibniz - Institute of Freshwater ecology and Inland Fisheries, Germany
- 3.-** Bio-geomorphic characterization of Mediterranean rivers. A methodological approach  
**Lobera, G.<sup>1</sup>, Andres, I.<sup>2</sup>, Díez, JR.<sup>3</sup>, Elosegi, A.<sup>3</sup> Ibisate, A.<sup>4</sup>, López-Tarazón, J.A.<sup>1</sup>, Martínez-Capel, F.<sup>5</sup>, Muñoz-Mas, R.<sup>5</sup>, Tena, A.<sup>1</sup>, Vallés, F.<sup>2</sup>, Vericat, D.<sup>6,7</sup>, Batalla, R.J.<sup>1,6</sup>**  
<sup>1</sup> University of Lleida, Lleida, Spain  
<sup>2</sup> Institute of Water Engineering and Environment, UPV, Valencia, Spain  
<sup>3</sup> Department of Plant Biology and Ecology, University of the Basque Country, Bilbao, Spain  
<sup>4</sup> Department of Geography, Prehistory and Archaeology, EHU, Vitoria-Gasteiz, Spain  
<sup>5</sup> Research Institute for Integrated Management of Coastal Areas, UPV, Valencia, Spain  
<sup>6</sup> Forest Technology Centre of Catalonia, 25280 Solsona, Spain  
<sup>7</sup> Institute of Geography and Earth Sciences, Aberystwyth University, Wales, Ceredigion, UK

- 4.- Assessment of ecosystem services in 4 Mediterranean basins  
**Marta Terrado<sup>1</sup>, Vicenç Acuña<sup>1</sup>, T Mohamedali<sup>2</sup>, Driss Ennaanay<sup>2</sup> and Sergi Sabater<sup>1</sup>**  
<sup>1</sup> Catalan Institute for Water Research, Girona, Spain  
<sup>2</sup> 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 Mastroianni<sup>1</sup>, Cristina Postigo<sup>1</sup>, Miren López<sup>1</sup> de Alda and Damià Barceló<sup>1,2</sup>**  
<sup>1</sup> Institute of Environmental Assessment and Water Research, Barcelona, Spain  
<sup>2</sup> Catalan Institute for Water Research, Girona, Spain
  
- 6.- Occurrence of phosphodiesterase type V inhibitors and their metabolites in WWTP  
**Jaume Aceña<sup>1</sup>, Bianca Ferreira da Silva<sup>1,2</sup>, Victoria Osorio<sup>1</sup>, Antonio A. Mozeto<sup>2</sup>, Sandra Perez<sup>1</sup>, Damia Barcelo<sup>1,3</sup>**  
<sup>1</sup> Institute of Environmental Assessment and Water Research, Barcelona, Spain  
<sup>2</sup> Laboratório de Biogeoquímica Ambiental, UFSCar, São Carlos, Brasil  
<sup>3</sup> Catalan Institute for Water Research, Girona, Spain
  
- 7.- Analysis of perfluorinated compounds in tap water of Spanish cities by liquid chromatography-mass spectrometry  
**Marta Llorca<sup>1</sup>, Marinella Farré<sup>1</sup>, Yolanda Picó<sup>2</sup> and Damià Barceló<sup>1,3</sup>**  
<sup>1</sup> Institute of Environmental Assessment and Water Research, Barcelona, Spain  
<sup>2</sup> University of Valencia, Valencia, Spain  
<sup>3</sup> Catalan Institute for Water Research, Girona, Spain
  
- 8.- Relation between the presence of pharmaceuticals and the hydrological parameters of the Llobregat river  
**Victoria Osorio<sup>1</sup>, Oriol Algaba<sup>2</sup>, Sandra Pérez<sup>1</sup>, Antoni Ginebreda<sup>1</sup> and Damià Barceló<sup>1,3</sup>**  
<sup>1</sup> Institute of Environmental Assessment and Water Research, Barcelona, Spain  
<sup>2</sup> Technical University of Barcelona, Barcelona, Spain  
<sup>3</sup> Catalan Institute for Water Research, Girona, Spain
  
- 9.- Simulation of the water balance of the NE Iberian Peninsula  
**Pere Quintana Seguí<sup>1</sup>, Marco Turco<sup>2</sup> and Maria del Carmen Llassat<sup>2</sup>**  
<sup>1</sup> Observatori de l'Ebre, Roquetes, Spain  
<sup>2</sup> University of Barcelona, Barcelona, Spain
  
- 10.- Understanding variability and thresholds for the management of ecosystem services  
**Honey-Rosés, J.**  
Catalan Institute for Water Research, Girona, Spain  
Urban and Regional Planning, University of Illinois, Urbana Champaign, Champaign, IL, USA
  
- 11.- Determination of pesticides in sediments: comparison of extraction procedures  
**Ana Masia, Pablo Vázquez-Roig, Cristina Blasco and Yolanda Pico**  
University of Valencia, Valencia, Spain



- 12.-** Application of a Spatially Referenced Regression Model for the Estimation of Nutrient Sources Related to Land Uses in the Llobregat Basin  
**R. Aguilera<sup>1</sup>, R. Marcé<sup>1, 2</sup> and S. Sabater<sup>1, 3</sup>**  
<sup>1</sup> Catalan Institute for Water Research (ICRA), Girona, Spain  
<sup>2</sup> Fluvial Dynamics and Hydrological Engineering (FLUMEN), University of Barcelona, Barcelona, Spain  
<sup>3</sup> Institute of Aquatic Ecology, University of Girona, Girona, Spain
- 13.-** Response of community structure to sustained drought in Mediterranean rivers  
**Dani Boix<sup>1</sup>, Emili García-Berthou<sup>1</sup>, Stéphanie Gascón<sup>1</sup>, Lluís Benejam<sup>1</sup>, Elisabet Tornés<sup>1, 2</sup>, Jordi Sala<sup>1</sup>, Josep Benito<sup>1</sup>, Antoni Munné<sup>3</sup>, Carolina Solà<sup>3</sup> and Sergi Sabater<sup>1, 2</sup>**  
<sup>1</sup>Institute of Aquatic Ecology, University of Girona, Girona, Spain  
<sup>2</sup>Catalan Institute for Water Research (ICRA), Girona, Spain  
<sup>3</sup>Catalan Water Agency (ACA), Provença 204-208, 08036 Barcelona, Spain
- 14.-** Multiclass determination of UV absorbing chemicals in sediments along the Ebro River basin  
**Pablo Gago<sup>1</sup>, Silvia Díaz-Cruz<sup>1</sup> and Damià Barceló<sup>1, 2</sup>**  
<sup>1</sup> Institute of Environmental Assessment and Water Research, Barcelona, Spain  
<sup>2</sup> Catalan Institute for Water Research, Girona, Spain
- 15.-** Polar pesticides in the Llobregat River (NE, Spain): Occurrence and risk assessment  
**Marianne Köck-Schulmeyer<sup>1</sup>, Victoria Osorio<sup>1</sup>, Sandra Pérez<sup>1</sup>, Ramón López-Roldán<sup>2</sup>, Susana González<sup>2</sup>, Jose Luis Cortina<sup>2</sup>, Miren López de Alda<sup>1</sup>, Antoni Ginebreda<sup>1</sup> and Damià Barceló<sup>1, 3</sup>**  
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<sup>2</sup> CETaqua, Water Technology Center, Barcelona, Spain  
<sup>3</sup> Catalan Institute for Water Research, Girona, Spain
- 16.-** Exploring hydrological inter/intra annual variability in a Mediterranean mountains area. A way to evaluate potential effects of climate change on water resources with observed data?  
**Jérôme Latron, Pilar Llorens, Pablo Garcia-Estringana and Francesc Gallart**  
Institute of Environmental Assessment and Water Research, Barcelona, Spain
- 17.-** Assessing the effect of 'global-change-type droughts' on evapotranspiration and water balance in a Mediterranean headwater catchment  
**P. Llorens<sup>1</sup>, R. Poyatos<sup>2</sup>, J. Latron<sup>1</sup>, J. Delgado<sup>1</sup>, I. Oliveras<sup>3</sup>, P. García-Estringana<sup>1</sup> and F. Gallart<sup>1</sup>**  
<sup>1</sup> Institute of Environmental Assessment and Water Research (IDAEA), CSIC, Barcelona, Spain  
<sup>2</sup> CREAM, Universitat Autònoma de Barcelona, Barcelona, Spain  
<sup>3</sup> School of Geography and the Environment, University of Oxford, Oxford, UK

- 18.- Using reach flow status frequency analysis for assisting the determination of the ecological quality in temporary streams.  
**Gallart, F.<sup>1</sup>, Prat, N.<sup>2</sup>, Brito, D.<sup>3</sup>, García-Roger, E.<sup>2</sup>, De Girolamo, A.M.<sup>4</sup>, González-Barberá, G.<sup>5</sup>, Latron, J.<sup>1</sup>, Llorens, P.<sup>1</sup>, Lo Porto, A.<sup>4</sup>, Neves, R.<sup>3</sup>, Tzoraki, O.<sup>6</sup>, Querner, E.P.<sup>7</sup>, Quiñonero, JM.<sup>5</sup>, Rieradevall, M.<sup>2</sup>, Tournoud, M.G.<sup>8</sup>, Nikolaidis, N.P.<sup>6</sup>**  
<sup>1</sup> IDAEA, CSIC, Barcelona, Spain  
<sup>2</sup> FEM, D. Ecologia, UB, Barcelona, Spain  
<sup>3</sup> IMAR, Coimbra, Portugal  
<sup>4</sup> IRSA, CNR, Bari, Italy  
<sup>5</sup> CEBAS, CSIC, Murcia, Spain  
<sup>6</sup> EED, TUC, Chania, Greece  
<sup>7</sup> Alterra, Wageningen, Netherlands  
<sup>8</sup> Université Montpellier, Montpellier, France
- 19.- Illicit drugs in protected areas: levels and distribution in surface waters of the pego-oliva marsh (valencia, spain)  
**P. Vazquez-Roig<sup>1</sup>, C. Blasco<sup>1</sup>, V. Andreu<sup>2</sup>, Y. Picó<sup>1</sup>**  
<sup>1</sup> Facultat de Farmàcia, Universitat de València, Burjassot, València, Spain  
<sup>2</sup> Centro de Investigaciones sobre Desertificación-CIDE (CSIC, Univ. Valencia). Albal, Spain
- 20.- Flood reconstruction from historical information to improve the extreme flood frequency analysis in the Ebro River  
**Balash, J.C., Sánchez-Herrero, A. & Ruiz-Bellet, J.L.**  
Department of Environment and Soil Sciences, University of Lleida, Spain
- 21.- Influence of naturally high fine sediment loads on benthic invertebrate community in a pyrenean river.  
**Buendía, C.<sup>1,2</sup>, Gibbins, C.N.<sup>1</sup>, Vericat, D.<sup>3,4</sup>, López-Tarazón, J.A.<sup>2</sup> Batalla, R.J.<sup>2,3</sup>**  
<sup>1</sup> University of Aberdeen, Aberdeen, UK  
<sup>2</sup> University of Lleida, Lleida, Spain  
<sup>3</sup> Forest Technology Centre of Catalonia, Solsona, Spain  
<sup>4</sup> Aberystwyth University, Ceredigion, UK
- 22.- Designing flushing flows to remove the excess of macrophytes. The example of the lower Ebro River  
**Gonzalo, Laura E. <sup>1</sup>, Vericat, Damià<sup>2,3</sup>, Batalla, Ramon J. <sup>1,2</sup>**  
<sup>1</sup> University of Lleida, Lleida, Spain  
<sup>2</sup> Forest Technology Centre of Catalonia, Solsona, Spain  
<sup>3</sup> Aberystwyth University, Wales, UK
- 23.- Optimization and validation of a PLE-based method for the HPLC-QqLiT-MS analysis of fullerenes in particulate samples  
**Josep À. Sanchís<sup>1</sup>, Marinella Farré<sup>1</sup>, Damià Barceló<sup>1, 2</sup>**  
<sup>1</sup> Institute of Environmental Assessment and Water Research (IDAEA), Barcelona, Spain  
<sup>2</sup> Catalan Institute of Water Research (ICRA), Girona, Spain
- 24.- Sources, Occurrence and Environmental risk assessment of pharmaceuticals in the Ebro river basin  
**Meritxell Gros<sup>1</sup>, Mira Petrovic<sup>2,3</sup>, Antoni Ginebreda<sup>3</sup>, Damià Barceló<sup>1,3</sup>**  
<sup>1</sup> Catalan Institute for Water Research (ICRA), Girona (Spain)  
<sup>2</sup> Catalan Institution for Research and Advanced Studies (ICREA), Barcelona, Spain  
<sup>3</sup> Institute of Environmental Assessment and Water Studies (IDAEA-CSIC), Barcelona, Spain



- 25.-** A conceptual model to assess the ecological risk in river basin. Application to the Ebro river  
**William Ocampo-Duque<sup>1,2</sup>, Ronnie Juraske<sup>3</sup>, Vikas Kumar<sup>1</sup>, Marti Nadal<sup>4</sup>, José L. Domingo<sup>4</sup> And Marta Schuhmacher<sup>1</sup>**  
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- 26.-** Reconstructing the Santa Tecla flash-flood in the Sió River (Ebro River, NE Spain)  
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- 27.-** Monitoring the effect of tides in the distribution of polar organic contaminants in the East River (NY)  
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- 28.-** Removal of veterinary pharmaceuticals with RO/NF membranes  
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- 29.-** Antibiotic-resistance patterns in aquatic bacterial communities  
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Catalan Institute for Water Research (ICRA), 17003 Girona, Spain
- 30.-** Lessons learnt from past Flash Floods and Debris Flow events to propose future strategies on risk management  
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