

The course will be limited to 30 students in order of inscription
Fees: **125€ SCARCE students**, 175 € non-SCARCE students. They include the course inscription, materials, coffee breaks and lunches.

Online registration is opened at www.idaea.csic.es/scarceconsolider until **15th January 2011**

Please, make a transfer to the following account:
Account owner: ADECIT. Associació Desenvolupament Ciència i Tecnologia
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IBAN number: ES70 2100-0655-780200202561, SWIFT code: CAIXESBB
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SCARCE-Consolider CSD-2009-00065

Advanced Course

ORGANIZERS

- Institute of Environmental Studies and Water Research (IDAEA-CSIC), Barcelona
- University of Valencia (UV), Valencia
- Catalan Institute for Water Research (ICRA) in collaboration with the University of Girona (UdG), Girona
- Institute of Marine Sciences of Andalusia (ICMAN-CSIC), Cádiz



ANALYSIS, FATE AND RISKS OF ORGANIC CONTAMINANTS IN RIVER BASINS UNDER WATER SCARCITY

For more information, please contact:

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Valencia (Spain). February 7-8, 2011

Monitoring of water bodies will increase over the coming years within Europe, in response to the needs of the Water Framework Directive (WFD), and globally due to pressure from climate change. The latter will lead to resource scarcity in some areas as well as water quality changes, and increasing demand from population and manufacturing growth. Water scarcity and environmental degradation are critical constraints on the State's economic growth, competitiveness and social and environmental sustainability. Inadequate treatment of human and industrial waste discharges as well as inappropriate waste water re-use programs lead to higher concentrations of chemicals and organic contaminants in river basin ecosystems. Therefore, there is a compelling need to understand the response of rivers to multiple stressors, from the point of view of both ecosystem structure and functioning, as the only way to forecast, adapt to and mitigate the impact of current and forthcoming environmental changes. This is the general goal of the research project "SCARCE. Assessing and predicting effects on water quantity and quality in Iberian rivers caused by global change", funded by the Spanish Ministry of Science and Innovation, and hosting this advanced course.

This 2-day advanced course is designed for graduate students, PhD students and researchers interested on understanding the inputs, fate, and subsequent exposure of aquatic systems to chemical contaminants, which is essential in determining and controlling the risks of these compounds to environmental and human health. The concepts and issues associated with environmental pollution, the detection and quantification of environmental contamination, and the possible impact of environmental pollutants on the ecosystems and biota, together with the current techniques for risk assessment will be analyzed through 40 minute lectures given by a group of experts, combined with open discussions on case studies provided by the lecturers.

COURSE INSTRUCTORS

Damià Barceló, IDAEA-CSIC, Barcelona
Cristina Blasco, Departament de Medicina Preventiva, UV, Valencia
Marinel.la Farré, IDAEA-CSIC, Barcelona
Antoni Ginebreda, IDAEA-CSIC, Barcelona
Miren López de Alda, IDAEA-CSIC, Barcelona
Alicia Navarro, IDAEA-CSIC, Barcelona
Yolanda Picó, Departament de Medicina Preventiva, UV, Valencia
Julián Blasco, Departamento Ecología y Gestión Costera, ICMAN-CSIC, Cádiz

PROGRAMME

7th of February

11.00-11:45 Introduction to water scarcity

Several decades ago water was perceived as a non-limited resource. Gradually due to increased water use, misuse of water resources, increased pollution and other natural and human induced changes, water has become scarce resource not only in arid and drought-prone areas but also in humid or subhumid zones of the globe.

11:45-14:00 Organic contaminants under water scarcity: environmental problems, regulations in US and Europe, toxic effects and environmental levels

Persistents Organic Pollutants (POPs), Endocrine Disruptors (EDCs), Perfluorinated Compounds, Pharmaceuticals, Illicit Drugs and Pesticides

15:30-19:30 River basin monitoring: the role of laboratory analysis

Overview of the advanced instrumental analysis of chemical contaminants in the environment: Sampling, Sample preparation for solid and liquid samples using off-line and on-line SPE techniques, GC-MS of POPs, LC-MS-MS, Q Trap LC-MS, LC(UPLC)-Q-TOF-MS and Orbitrap of the considered compounds. Summary and comparison of the various MS techniques used for EDCs, Pharmaceuticals, Pesticides and Perfluorinated compounds in terms of sample manipulation, sensitivity and cost of analysis.

8th of February

9:30-14:00 Occurrence and fate of organic contaminants in river basins

Discussion of the case studies: Monitoring POPs, EDCs, Pharmaceuticals, Illicit Drugs, Perfluorinated compounds and Pesticides in natural waters, sediments and soils (Ebro, Llobregat, L'Albufera, Oliva-Pego marsh), waste waters and sludges.

15:30-17:00 Ecotoxicology and risk assessment of organic contaminants

Techniques and application for environmental risk assessment. Water scarcity, the need of new data.

Environmental risk assessment (ERA) procedures based on ecotoxicological data, mostly through the estimation of the so called hazard quotients (HQ)