

XIX Congress of the Iberian Association of Limnology
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Guest Editors

M. Graça, M. J. Feio, V. Ferreira, J. M. Neto, S. Seena and A. M. Gonçalves



UNIVERSIDADE DE
COIMBRA



PREFACE

Inland waters and XXI century challenges: from scientific knowledge to environmental management

Inland freshwaters represent only a minor fraction of total water on our planet; however, they comprise a large variety of systems, including lakes, lagoons, groundwaters, streams and rivers. Inland waters also support a strikingly and disproportionately high level of the world's biodiversity. The misuse of water resources is an ongoing process, with large rivers that run dry (e.g., Colorado, Indus, Yellow) and dubious hydrological plans threatening biodiversity and marginalized human societies (e.g. inner Niger Delta). Inland aquatic ecosystems provide numerous services to humans, including clean water for consumption, irrigation and hydropower, food, cultural and spiritual values. However, water abstraction, climatic change, pollution, damaging of riparian vegetation, damming and species invasion result in the decrease of water quantity, quality and biodiversity and consequently in potential services of inland waters. These pressures challenge human societies to understand freshwater ecosystems better and to implement proper management.

Against this background and under the theme "Inland waters and XXI century challenges: from scientific knowledge to environmental management", the Iberian Association of Limnology (AIL) hosted its XIX congress in Coimbra, from the 24th to the 29th June 2018, organized by MARE – Marine and Environmental Sciences Center, the University of Coimbra and PROAQUA – Associação para a Promoção do Conhecimento em Ecologia Aquática. A total of 338 participants came from 22 countries, specifically from Spain (144), Portugal (97), Brazil (52), other European and South American countries, USA, Israel, Russia and Australia (45).

There were seven plenary sessions by invited speakers. Margaret Palmer (Ramón Margalef conference) discussed on the "Restoration, watershed context, and biogeochemical processes: from streams to wetlands". Beatriz Modenutti communicated about the "Aquatic deserts and the success of mixotrophic ciliates". Cedo Maksimovic addressed the "Advanced planning and management of urban lakes and ponds as a part of Integrated BGS - Blue Green Solution". Miguel Cañedo expressed concern over "Emerging questions in freshwater salinization". Catherine Pringle elucidated on the "Climate-driven changes in hydrologic connectivity and emergent ecological effects in Neotropical streams: long-term studies in Costa Rica and Puerto Rico". Michael Danger gave a talk on "Ecological stoichiometry in detritus-based headwater streams: current knowledge and perspectives". Alexandre Miró, the winner of the best doctoral thesis in Limnology attributed by the AIL, delivered a presentation on "Fish as local stressors of Pyrenean high mountain lakes: arrival process and impact on amphibians and other organisms". Finally, Ruben del Campo, representing the Young AIL consortium, presented the project AGRHYDRON, which examined the combined effect of seasonal hydrological fluctuations and agriculture on nutrient concentration and dissolved organic matter (DOM) quantity and composition.

In the span of a week, 15 regular sessions dealt with ecotoxicology biomarkers and multiple stressors, biomonitoring and environmental management, trophic interactions, ecosystem functioning and

services, biodiversity and biogeography, aquatic invertebrates, fish ecology, primary producers, microbial ecology, nature-based solution, lakes, reservoirs and marshlands, brackish waters and estuaries, global changes, and conservation and restoration.

Additionally, there were 11 special sessions on molecular tools, microplastics, wild fire effects, urban pollution, river management, carbon cycle, community ecology, temporary waters, headwaters, eco hydraulics and fish, and a tribute session Julia Toja. Among all the initiatives that took place during the congress, deserves special mention the inauguration of the exhibition “Women in limnology”, which honors pioneer women researchers in the field of Limnology and provides insights on the current gender situation and trends in limnology.

This special number of *Limnetica* includes 20 papers presented to the congress. The organizers acknowledge the support provided by MARE, Faculdade de Ciências e Tecnologia da Universidade de Coimbra, Museu da Ciência da Universidade de Coimbra, Imprensa da Universidade de Coimbra, Núcleo de Estudantes de Biologia da Associação Académica de Coimbra, Câmara Municipal de Coimbra, Praxis, UNICAM, and Filsat. We thank all participants and the Scientific Committee for their contribution to the congress.

The Invited Editors,

**Manuel Graça, Maria João Feio, Verónica Ferreira,
João M. Neto, Sahadevan Seena and Ana Marta Gonçalves**