



# Limnología 2020

**XX Congress of the Iberian Association  
of Limnology (AIL-2020)**

**III Iberoamerican Congress  
of Limnology (CIL-2020)**

ONLINE CONGRESS  
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**26-29 October**

**Murcia (Spain)**



## **XX Congress of the Iberian Association of Limnology (AIL-2020)**

### **III Iberoamerican Congress of Limnology (CIL-2020)**

# Limnology in a changing world

Between 26<sup>nd</sup> and 29<sup>th</sup> of October 2020 and honouring the theme of the congress, "Limnology in a changing world", we will celebrate in a virtual form from Murcia (Southeast of Spain) the XX Congress of the Iberian Association of Limnology (AIL-2020). We highlight that the congress is the result of a fruitful coordination between the Iberian Association of Limnology (AIL) and the Iberoamerican Associations of Limnology. Thus, this congress is will be also the III Iberoamerican Congress of Limnology (CIL-2020). This event will provide a valuable opportunity, although in a virtual way, for the exchange of knowledge and experiences among Iberian and Ibero-American limnologists.

One of the main aims of this meeting is to discuss the new scientific knowledge that will be useful to improve the management and conservation of inland aquatic ecosystems (from lakes to deltas and estuaries, through rivers and wetlands). This information will be discussed under a global change scenario and considering new models of man-nature cooperation. Under the slogan "Limnology in a changing world", the congress aims to discuss key issues to manage these ecosystems that despite being of high importance for humans, are subjected to increasing human pressures and impacts.

The Iberian Southeast is one of the most arid regions in Europe. Inland aquatic ecosystems in this area acquire a great importance for their uniqueness at European scale. Arid environments offer a wide variety of aquatic ecosystems, hosting an extraordinary biodiversity. The functioning of such ecosystems is determined by extreme biophysical conditions, especially at the terrestrial-aquatic interface. Despite its conservation value, the aquatic ecosystems of this region are highly threatened by the high degree of anthropic alteration and global change.

We invite you to participate in this unique event to share experiences, to coordinate works and advance in the knowledge of aquatic ecology, thus contributing to a more sustainable inland aquatic ecosystem management. In this sense, we feel that the involvement of water managers and interested technicians and consultants is essential as a bridge between scientific knowledge and society. For this reason, our invitation is extended to this collective.

The Congress logo is an original idea from Antonio José García Cano.

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## Wind directionality and strength affects wetland invertebrate metacommunities in Patagonia

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Wind has the potential to shape metacommunities by affecting organism dispersal strength and directionality. Here we evaluate the relative importance of wind in the assembly of wetland invertebrate metacommunities of active (i.e. flying adults) and passive (e.g. through birds) dispersers in Patagonia. This region experiences some of the strongest winds on Earth, with persistence of westerly winds. The study included invertebrate samples collected from 82 pristine wetlands across the Argentinian Patagonia. For each wetland we measured water quality, morphology and plant cover. These variables were used to calculate an environmental distance between sites (i.e. how each pair of sites was in terms of local habitat conditions). Then, we built two metric of landscape resistance to dispersal between sites: topographic (i.e. least cost path between sites taking into account topographic barriers) and wind (i.e. least cost path between sites taking into account wind speed). We built distance-decay relationships of macroinvertebrate community similarity for each distance. Wind had a much stronger effect than environmental conditions and topography on the metacommunity organization of passive dispersers. On the contrary, wind had a weak effect on the organization of active dispersers' metacommunities when compared with topography and environmental conditions. Our results suggest that metacommunity studies should account for the effects on external dispersal agents, with e.g. wind being a major determinant of community organization.

## Implementation of a metacommunity approach for river biomonitoring under water scarcity

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Rapid shifts in biotic communities due to environmental variability challenge the detection of anthropogenic impacts by current biomonitoring programs.

Metacommunity ecology has the potential to inform such programs, because it combines dispersal processes with niche-based approaches and recognizes variability in community composition. Using intermittent rivers – prevalent and highly dynamic ecosystems that sometimes dry – we develop a conceptual model to illustrate how dispersal limitation and flow intermittence influence the performance of biological indices. We produce a methodological framework integrating physical- and organismal-based dispersal measurements into predictive modeling, to inform development of dynamic ecological quality assessments. We provide a case study of application using macroinvertebrate IRES metacommunities. Such metacommunity-based approaches could be extended to other ecosystems, and are required to underpin our capacity to monitor and protect ecosystems threatened under future environmental changes.