

Using hydrochemistry, tracers and isotopes to analyze hydrogeological dynamics and eutrophication processes in coastal lagoons

Anna Menció (1), Josep Mas-Pla (1,2), and Xavier D. Quintana (3)

(1) Grup de Geologia Ambiental i Aplicada (GAiA), Department of Environmental Sciences, University of Girona, 17071 Girona, Spain, e-mail: anna.mencio@udg.edu, (2) Catalan Institute for Water Research (ICRA), 17241 Quart, Spain, e-mail: jmas@icra.cat, (3) Institute of Aquatic Ecology, University of Girona, 170 71 Girona, Spain, e-mail: xavier.quintana@udg.edu

Wetlands and coastal lagoons in Mediterranean areas have recently been the focus of an increasing interest due to the degradation of their ecological status in terms of declining biodiversity, alteration of ecological functioning and limitation of the ecosystem services they provide. Accordingly, the Horizon 2020 Programme of the European Union has set, as one of its priorities, to prevent a further degradation of these ecosystems and to recover their ecological functioning. The aim of this project is to analyze the hydrogeological dynamics in the Pletera coastal lagoons (NE, Spain) as a basis to propose guidelines for their sustainable management. Thus, monthly hydrochemical (with major ions, nutrients and tracers) and isotopic ($\delta^{18}\text{O}_{\text{H}_2\text{O}}$ and δD) campaigns have been conducted, from November 2014 to October 2015, to determine the hydrogeological dynamics of the Pletera lagoons. In addition, in some of the sampling campaigns $\delta^{34}\text{S}_{\text{SO}_4}$, $\delta^{18}\text{O}_{\text{SO}_4}$, $\delta^{15}\text{N}_{\text{NO}_3}$ and $\delta^{18}\text{O}_{\text{NO}_3}$ have also been analyzed to determine the origin of eutrophication problems observed in these lagoons, mainly caused by nitrogen compounds.

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