

## Phosphorus retention in an Hg-contaminated salt marsh: implications on ecosystem services

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Salt marshes are complex ecotones, located between land and coastal water environments, classified as sensitive habitat under the European Habitats Directive. Salt marshes have the ability to auto-remediate systems acting as natural sinks for nutrients and pollutants, which constitutes a service provided by these ecosystems.

The Ria de Aveiro is a coastal lagoon located on the northwest coast of Portugal (40°38'N, 8°44'W). In this system, Laranjo Basin is a shallow area with 2 km<sup>2</sup> where the salt marsh is historically contaminated with Hg.

Mercury (Hg) is included in the list of high priority environmental pollutants, being recognised for its deleterious effects on ecosystem functions and services. In this study we hypothesise that the presence of Hg in the sediment will affect the retention of bioavailable phosphorus by salt marshes rhizosediment.

Phosphorus (P) is a key nutrient for plants and microorganisms, being involved in several biological and environmental processes. The analysis of total P, by

itself, does not provide information on the P content in its different forms in the environment, particularly the bioavailable P. The objective of this study is to evaluate the retention of P in the rhizosediment in its various forms, i.e., P-oxides of Fe and Al (bioavailable P), P-Ca (not bioavailable P), P-total (total P), P-org (organic P), P-inorg (inorganic P), in two salt marshes areas colonised by *Bolbochenous maritimus* and *Juncus maritimus*, with higher and lower Hg-contaminated sediment.

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