

Floating Wetland Islands as a water treatment technology

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INTRODUCTION & AIM

Floating Wetland Islands (FWIs) are innovative, nature-based solutions that aim to improve water quality and restore ecological functions in various aquatic environments, such as lakes, ponds, rivers, and reservoirs. FWIs are man-made floating platforms planted with aquatic vegetation that mimic natural wetlands, providing significant ecological benefits. In recent years, these systems have gained widespread recognition due to their effectiveness, cost-efficiency, and relatively low maintenance requirements. This study focuses on the implementation and performance of a FWI established in a freshwater pond using a polyculture of aquatic plants, including *Iris germanica*, *Acorus gramineus*, *Caltha palustris*, and *Typha latifolia*. These species were chosen for their robust ability to tolerate variable water conditions and their efficacy in nutrient uptake. The FWI was constructed on a cork agglomerate platform, a material that allows for long-term durability and plant growth. Installed in 2018, this FWI has been under continuous monitoring to assess its ecological impact. Parameters such as local biodiversity improvement, water quality metrics and the platform's long-term buoyancy and structural integrity have been tracked.

FWI IMPLEMENTATION AND MONITORING



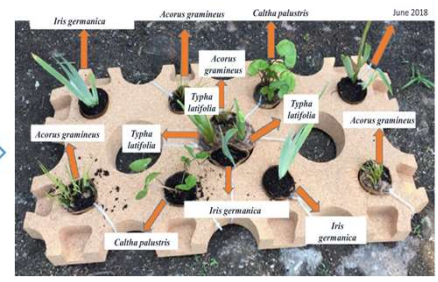
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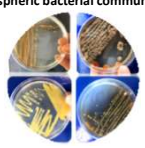
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Rhizospheric bacterial communities



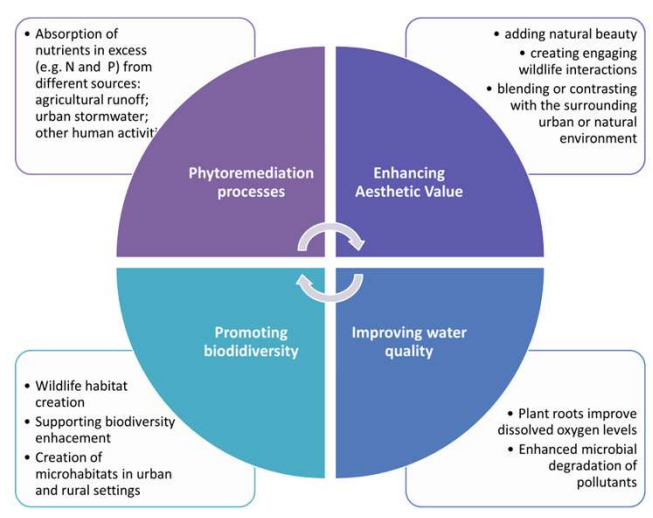
Macroinvertebrates communities



Water analysis



FWI's Ecosystem services



Preliminary results indicate high diversity of organisms associate to FWI, suggesting that the FWI provides essential habitat functions while improving water quality. Long-term monitoring will continue to provide insights into the durability of the cork-based platform and its capacity to support plant growth over extended periods, as well as the cumulative ecological benefits of the system.

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