

Floating islands implementation in marine and freshwater environments

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Introduction

Floating wetland islands (FWIs) are man-made systems designed to mimic natural processes in wetlands. However, plants in these kind of systems are grown in hydroponic mode and not in a substrate (Figure 1). Floating wetland islands are considered nature-based solutions that can be applied in different water bodies, such as lakes and rivers, in order to deliver a wide range of ecosystem services. They are recognized to promote local biodiversity, aesthetic integration and clean and improve water quality through phytoremediation processes (Calheiros et al. 2020). This technology offers an attractive alternative to other conventional remediation processes due to its relatively low cost and environmentally friendly implementation. In FWIs, plants are established on a floating mat while their roots are extended into the water, acting as biological filters. Nutrients and potentially toxic elements are absorbed from the wastewater by the plants through their roots, while the organic matter is degraded by microorganisms forming biofilms on the roots and the mat surface (Shahid et al. 2018).

Aims

- to design a new floating platform using adequate materials to be applied in marine and freshwater environments
- to compare the new platform with a commercial cork-based system established in terms of water quality and macrofauna biodiversity in both environments

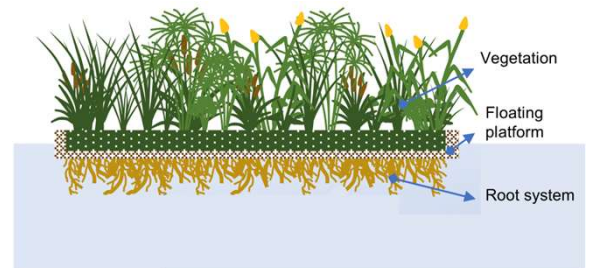
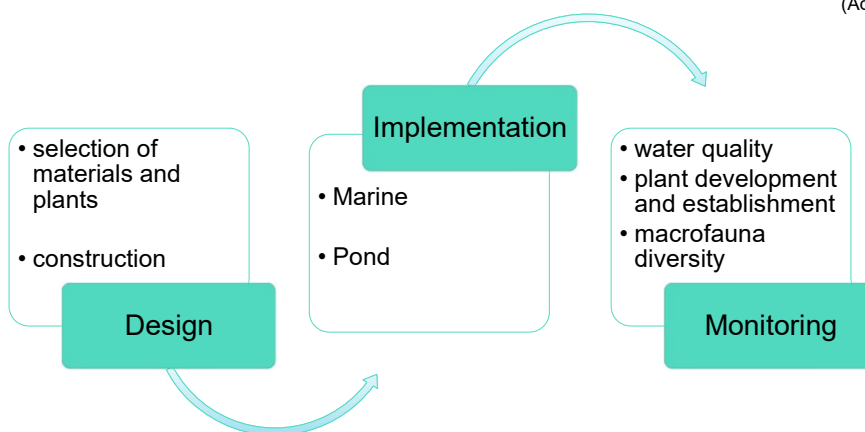


Figure 1: Floating wetland islands scheme (Adapted from Calheiros et al 2020b)



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