



Floating wetlands at a sewage treatment plant in South East Queensland

# Floating Wetlands Pilot Study

Westernport Water has joined forces with scientists to explore how floating wetlands can be used in the wastewater treatment process.

## About the project

Westernport Water is embarking on an innovative two-year study to assess the effectiveness of wetland plants in removing nutrients and reducing greenhouse gas emissions from treated wastewater.

The study is the first of its kind to measure the performance of a floating wetland on both water quality and greenhouse gas emissions and aims to provide evidence to support and encourage more nature-based solutions in the water sector.

A floating wetland system filled with 1,800 native plants has been installed in a wastewater lagoon at Cowes Wastewater Treatment Plant. Together with scientists from Deakin University and CSIRO, Westernport Water will monitor the plants over the next 18-months to determine how effective they are at absorbing nutrients, which is expected to reduce emissions and contaminants from the water.

The researchers' findings will be shared with the broader water sector and the local community throughout the project, with workshops and a community open day planned.

The Floating Wetland Project is a joint initiative between Westernport Water, Deakin University, Clarity Aquatic, Covey Associates and CSIRO with funding from the Victorian Government, Intelligent Water Networks and Yarra Valley Water.

## What are floating wetlands?

Floating wetlands use wetland plant species that are suspended on the water column with roots submersed in the water. The plants take up nutrients and contaminants from the water and hold these in their plant material.

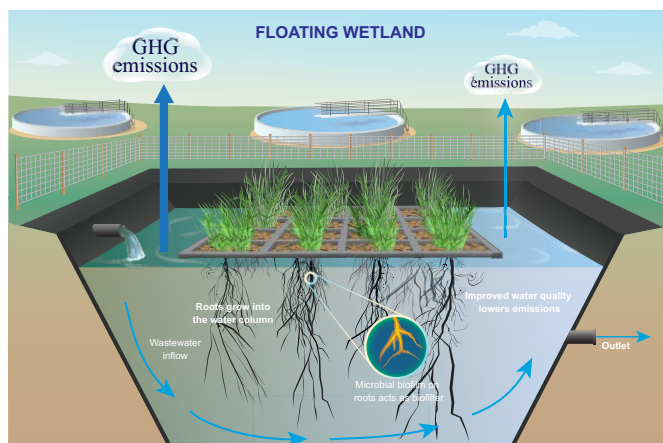


Image credit: Lukas Schuster, Deakin University

Every six months the nutrient-filled plants are harvested, allowing for new growth so the cycle can continue. The harvested plants have the potential to be re-used, composted or turned into biochar.



Native plants ready to be installed in the floating wetland system at Cowes Wastewater Treatment Plant.

## Expected benefits of the project

### Improved water quality

Adding an additional and all-natural filtration step into the wastewater treatment process will improve the quality of water discharged into the ocean, keeping our natural environment healthier and reducing the risk of nutrient pollution.

Customers using recycled water to irrigate land, or in new housing developments for gardening, will also benefit from higher quality recycled water.

### Reducing greenhouse gas emissions

The Cowes Wastewater Treatment plant site currently emits on average an estimated 2,260 tonnes of CO<sub>2</sub>-e per year, from a combination of CO<sub>2</sub>, methane gas and nitrous oxide generated by biological processes during wastewater treatment.

The use of wetland plants, combined with other initiatives onsite, will support our target to be carbon neutral by 2035.

### Other benefits:

- Increased biodiversity – wetlands vegetation provides habitat and food for birds and wildlife.
- Enhanced water security – making the best use of recycled water for multiple purposes.
- Cost-savings - less power consumption through the use of a sustainable nature-based system.
- Provides data to inform future projects, such as the large-scale restorative wetland system planned for King Road Wastewater Treatment Plant.

In addition, wetlands are some of the most degraded and important systems on the planet and are culturally significant to Aboriginal and Torres Strait Islander people. Westernport Water is exploring opportunities for the involvement of First Nations people in this wetland project.



## Timeframe

**November 2022 –April 2023**

Planning and benchmarking

**May 2023**

Floating Wetlands installed at Cowes Wastewater Treatment Plant

**May 2024**

Site visit for agricultural and local community sharing findings to date

**July 2024**

Final research released from Deakin University – Blue Carbon Lab, regarding emissions

**July 2025**

Learnings to be shared with the industry to inform future nature-based projects

## FURTHER INFORMATION

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