

A5: Assessment of pollutant risks and the need for management interventions at environmentally sensitive sites across the region

Objective(s)

Determine the risk of pollution to environmentally sensitive sites within the Port Phillip and Westernport region, including Melbourne Water's Sites of Biodiversity Significance (SoBS) and Ramsar sites of international significance. Where pollution is a major threat to these sites, to identify the major sources of contamination to inform management priorities.

Why this research is important

Melbourne Water manages over 40 sites that are designated Sites of Biodiversity Significance (SoBS), as well as Ramsar sites of international significance such as Edithvale-Seaford Wetlands, Port Phillip (Western Shoreline, including the Western Treatment Plant) and Western Port. Management plans for SoBS are included in Melbourne Water's asset management system and five-yearly assessments of condition are conducted to guide protection. The potential threat of contaminants to values within these sites, however, has not been assessed for some of these sites. This project will assist Melbourne Water to identify sites where pollution is a major threat to environmental values and where applicable, identify major sources of contaminants to focus management efforts.

Contribution to Melbourne Water research priorities

Key Research Area: Other aquatic biodiversity: Understanding areas of high biodiversity significance (e.g., Melbourne Water's Sites of Biodiversity Significance, Ramsar) and appropriate management responses to manage key threats to environmental values.

Achievements to date

This project is a continuation from A3P project B2.6, building on the same process, using the initial desktop risk assessments at all sites, which informed the order of systematic site assessment prioritization (Long *et al.*, 2019, 2020, 2022, 2023, 2024a and b), to better understand potential contamination. Sediment, water and passive samplers were used to measure a variety

of contaminants. If results indicated contamination, a follow up investigation to identify the source and/or the risk of the contaminants to values occurred. Previous research on background levels of aluminium in waterways across the region, including several SoBS, is being prepared for publication. Presented at SETAC EU (Vienna) May 2025.

Approach for Year 3

- Eastern Treatment Plant- Initial site survey and groundwater monitoring at the Golden Triangle and Doughnut wetlands
- Western Treatment Plant- Further investigation to determine the risk of metals and other contaminants to birds and frogs
- Aluminium Research- continue to build our database about its toxicity to local species

Key outputs for Year 3

- Pollution data from ETP, WTP and aluminium studies.
- Revised risk assessment for all Melbourne Water SoBS and the final project report for inclusion in management plans
- Progress aluminium background levels manuscript

Expected benefits

- A greater understanding of the risks of pollution to SoBS and other sites of environmental significance
- Inform updates to relevant MW plans e.g. SoBS management plans, WTP Risk Management and Monitoring Plan, Ramsar plans
- Potential revision of aluminium guideline values for waterways across Greater Melbourne

For more information, contact Sara Long, sara.long@rmit.edu.au.



A collaborative research partnership delivering practical management solutions to reduce pollution in our waterways