

A7: Managing the impacts of toxicants in urban stormwater and wastewater treatment plant discharges on the health of estuaries and bays

Objective(s)

To understand the water quality in estuaries and bays across the region to support HWS target setting, performance objectives and prioritisation of management actions.

Why this research is important

HWS performance objectives are needed for toxicants in estuaries and bays to better inform risk-based management and protect biodiversity, amenity, and recreational values. Information on the occurrence and impacts of toxicants in estuaries and bays, in particular, has been identified as a research priority.

This project will improve our understanding of what toxicants pose an ecological threat to the health of estuaries and bays and help establish clear goals for future catchment management activities.

Contribution to Melbourne Water research priorities

The project will contribute to the HWS Key Research Area: Developing improved monitoring, assessment and reporting methods to understand environmental conditions and values of wetlands and estuaries

Approach

To understand what toxicants pose a risk to the health of estuaries and bays, Year One of the project will consolidate existing data and collect new data to determine whether toxicants across the region occur at levels likely to impact estuarine and bay flora and fauna. The results of the knowledge synthesis will be used to inform priorities for data collection in subsequent stages of the project (i.e., Year Two and beyond). This may include:

- Undertaking ecotoxicological studies to determine whether observed toxicants concentrations can impact key environmental values.
- Collecting baseline data which will contribute towards environmental water quality performance target settings for bays and estuaries in the HWS 2028 renewal.

Key outputs

The key output expected from Year One is a knowledge synthesis of toxicants and toxicant impacts in estuary and bays. Outputs anticipated in future years of the project include estuary and bay toxicant and toxicology data.

Expected benefits

- Consolidation of existing knowledge about the levels and ecological risks posed by toxicants in bays and estuaries across the region.
- Identification of data gaps and other knowledge gaps required to underpin robust condition scores, management targets or Performance Objectives in the next HWS.
- Inform PPB and WP EMP and HWS condition metrics, targets and Performance Objectives.
- Supporting information for risk assessments regarding estuary and bay management e.g., estuary opening and dredging.

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