Concept Plan SP 2024-005

Kent St Weir Pool - A case study in maximizing environmental outcomes through better adaptive management

BCS Rivers and Estuaries Science

Project Core Team

X X **Supervising Scientist** Peter Novak
Data Custodian Peter Novak

Project status as of March 8, 2024, 11:23 a.m.

X X New project, pending concept plan approval

Document endorsements and approvals as of March 8, 2024, 11:23 a.m.

X X
Project Team granted
Program Leader granted
Directorate required

Kent St Weir Pool - A case study in maximizing environmental outcomes through better adaptive management

Program

BCS Rivers and Estuaries Science

Departmental Service

Service 4: Visitor Services and Public Programs Provided in the Swan and Canning Riverpark

Background

The Kent Street Weir Pool (KSWP) is one of the most significant freshwater habitats in the Perth Metropolitan area, however it has historically suffered from low fish fauna diversity and poor water quality due to eutrophication, saltwater ingress, and lack of connectivity. Additionally, in 2017 the submerged macrophyte community disappeared and has not since re-established. Interventions such as the sediment treatment Phoslock^{TM}, installation of a fishway in Kent Street Weir and, oxygenation have been employed to improve conditions. Whilst some elements of the system have demonstrated significant improvements, others have failed or raised questions around the management strategies currently in use.

Aims

This project, funded as part of the Federal Government's Urban Rivers and Catchment Program, aims to review previous management approaches and build contemporary agreement on current biodiversity values and management objectives for the KSWP in a changing climate and trial adaptive management approaches to maintain and improve biodiversity.

The project will be comprised of three parts:

- Under current management regime, conduct a baseline assessment of water quality and biodiversity values of the KSW Pool (including fish, crustacean and macro invertebrates) over 12 months.
- Review of existing water quality and biotic data in response to management approaches to inform choice of management interventions that would maximize environmental outcomes.
- Undertake experimental trials of management approaches to promote the re-establishment of the submerged macrophyte community, better water quality, and improved biodiversity and evaluate the outcome of these trials relative to the baseline conditions.

Expected outcome

The outcomes of this project primarily, will be the improvement in biodiversity and environmental condition of the Canning River KSWP. In addition, significant knowledge of biodiversity in the KSWP and its response to environmental changes will be generated, critical knowledge for the ongoing management of this vital freshwater habitat. Finally, an understanding of the management tools available and the impact they may have on water quality and biodiversity values will be achieved, allowing informed and effective management of the KSWP into the future.

Strategic context

DBCA Strategic Direction: Conserve, restore and manage plants, animals, ecosystems and landscapes using world-recognised best practice;

Science Strategic Goal: Best practice scientific evidence and advice is available to inform restoration of degraded and disturbed ecosystems;

REScience Approach: Through research and adaptive management, develop knowledge to inform guidelines and protocols for use in restoration and rehabilitation; Generate knowledge and build understandings to guide development of effective mitigation strategies for management of threats acting on aquatic and estuarine and ecosystems; Through research and monitoring, develop understanding of drivers influencing waterway biodiversity.

River Protection Strategy: Improve our understanding of the Riverpark ecosystem through research, and undertake intervention works and/or programs to improve or maintain water quality.

Regional initiative: Canning Waterways Interim Action - Better understand, protect and enhance native fauna and ecosystems (14), and Manage in-river structures (17).

Commonwealth and national priority: funding for this project is provided through the Australian Government Department of Climate Change, Energy, the Environment and Water (DCCEEW)- Urban Rivers and Catchment program (URCP), to address Commonwealth priorities by improving aquatic habitat to benefit native species, including threatened species; and improving water quality, hydrology and in-stream connectivity to benefit native species, including threatened species.

Expected collaborations

The project is led by Rivers and Estuaries Science Program and it is expected that collaborations with Rivers and Estuaries Branch in Conservation and Ecosystem Management Division will be important part of the project.

It is planned that some elements of the project will be student projects, primarily Honours or Master's. No formal collaborations have yet been established but potential student projects are currently being scoped with Murdoch University and University of Western Australia. Potential state government collaborators have also been identified and include Department of Water and Environmental Regulation, Department of Primary Industries and Regional Development.

It is intended that the Wadjuk Aboriginal Corporation be involved as a collaborator or key stakeholder in this project.

Additionally, a Technical Advisory Group will be established including representatives of the parties identified above.

Proposed period of the project

April 1, 2024 – Dec. 31, 2027

Staff time allocation

to | X | X | X | X |

Role	Year 1	Year 2	Year 3
Scientist	0.5	0.5	0.5
Technical	0.5	0.5	0.5
Volunteer			
Collaborator			

Indicative operating budget

to | X | X | X | X |

Source	Year 1	Year 2	Year 3
Consolidated Funds (DBCA)			
External Funding	56,895	140,555	112,173