Concept Plan SP 2024-004

Ecological values of river pools and evaluation of interventions to improve in-stream habitat

BCS Rivers and Estuaries Science

Project Core Team

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Project status as of March 8, 2024, 11:22 a.m.

X X New project, pending concept plan approval

Document endorsements and approvals as of March 8, 2024, 11:22 a.m.

X X
Project Team granted
Program Leader granted
Directorate required

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Program

BCS Rivers and Estuaries Science

Departmental Service

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

Background

[variant=australian]Community and government have identified concerns around the extent to which sediment has accumulated in the Canning, Southern and Wungong rivers, filling riverine pools and reducing water quality and habitat availability. Mitigation strategies, including formation of a sediment taskforce, together with stronger policy and education around soil loss from development sites, are intended to reduce sedimentation of the river, but does not address the legacy of historical inputs nor continuing inputs from the broader landscape. There is widespread NRM community support for sediment intervention and removal of sediment from riverine pools, but there remains limited information on the appropriateness or effectiveness of these approaches or understanding of logistical constraints.

Aims

The project aims to:

1. **Document values and condition of a selection of riverine pools in the Canning, Southern and Wungong rivers**

A desktop assessment and preliminary survey will identify river reaches of interest, from which ten river pools will be selected for a 12-month evaluation study of their biodiversity values and biophysical condition, including water and sediment quality.

1. **Undertake feasibility assessment for sediment intervention**

A review of intervention approaches and technologies will identify appropriate methods to improve biodiversity, in-stream habitat and water quality. The logistical feasibility of methods will be assessed to determine the preferred intervention approach and site selection criteria;

1. **Conduct a pilot trial of a sediment intervention approach**

From the feasibility assessment and pool study, an appropriate site and intervention approach will be selected, a works plan developed and environmental approvals obtained before intervention activities are implemented. The effectiveness of the intervention will be evaluated by comparing the ecological and biophysical conditions post-works to the baseline data collected in the values and condition assessment (aim 1).

Expected outcome

- Improved biodiversity and water quality knowledge of river pools;
- Improved understanding of intervention methods and technologies available;
- Improved understanding of the effectiveness of sediment intervention to improve ecological and biophysical conditions of riverine pools;
- Guideline for community and local government on approaches to and constraints in undertaking sediment removal as a river restoration approach.

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;

River Protection Strategy: Undertake intervention works and/or programs to improve or maintain water quality.

Regional initiative: Canning Waterways Interim Action- Prevent or reduce sediment entering the waterways and restore river reaches / pools;

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 will be delivered jointly between the Rivers and Estuaries Science branch of Biodiversity and Conservation Science Division, and Rivers and Estuaries Branch of Ecosystem Management Division.

DPIRD Freshwater Biosecurity unit's work aligns with this project and collaboration will be captured under an MoU being developed. Other opportunities for collaboration are being scoped with Murdoch University which will potentially build on previous collaborative projects.

The project intersects with the National Environmental Science Program, Resilient Landscapes' project focussed on enhancing the resilience of urban rivers by informing the regional restoration of the Canning River. This UWA led project will provide important baseline information at a landscape level of environmental, social and cultural values.

Proposed period of the project

Jan. 1, 2024 – June 30, 2028

Staff time allocation

to | X | X | X | X |

Role	Year 1	Year 2	Year 3
EOSCL1 RES	0.5	1	0.5
EOSCL2 RES	0.5	0.5	0.5
EOSCL1 RES	0	0.5	0.5
EOSCL2 RES	0.2	0.2	0.2

Indicative operating budget

to | X | X | X | X |

Source	Year 1	Year 2	Year 3
Consolidated Funds (DBCA)	10,000	10,000	
External Funding	78,580	371,665	611,372