

# Principles of Prioritisation for the Rehabilitation of Queensland Rivers and other Aquatic Ecosystems

The rehabilitation of rivers and other aquatic ecosystems is undertaken for a wide range of reasons including conserving biodiversity, protecting infrastructure, improving ecosystem functionality, improving water quality and to rehabilitate or restore ecosystem services and values.

Efficient and effective rehabilitation of Queensland rivers requires integrated guidance for decision makers, funding bodies, and those carrying out on-ground works. The prioritisation of rehabilitation activities is required at multiple stages in a rehabilitation process. Using key prioritisation principles in each of the steps of a whole-of-system, values-based approach will enhance effectiveness of management interventions, funding decisions and policy implementation.

## Background

Significant investment in the management and rehabilitation of Queensland's rivers occurs each year and is continuing to grow. This funding includes government investment in catchment rehabilitation and water quality programs, industry initiatives and market-based tools. Presently, a range of prioritisation approaches are used throughout Queensland but a transparent approach is required to guide consistent prioritisation of actions to optimise environmental, social, cultural and economic outcomes across a range of spatial scales.

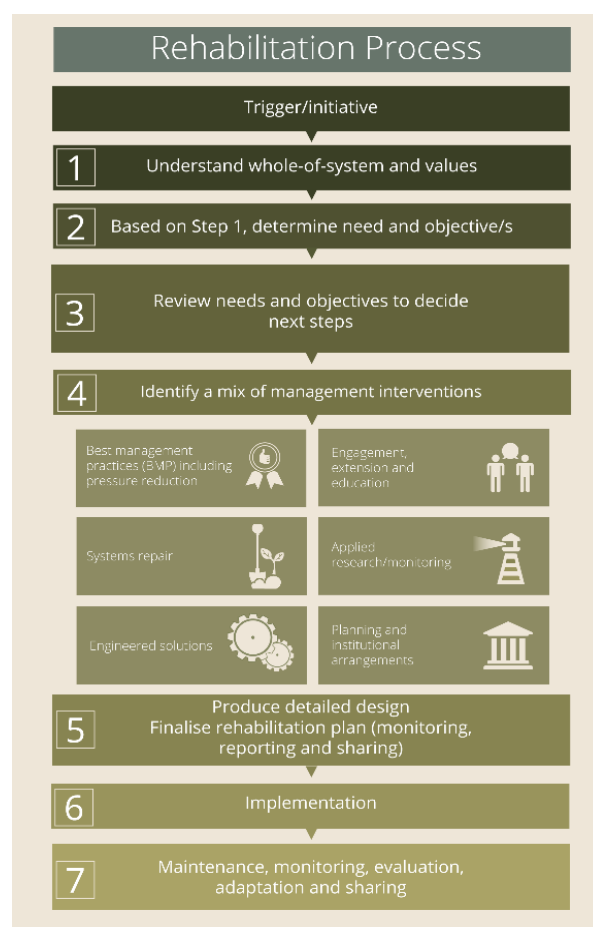
## Purpose

This project aims to integrate prioritisation into management and rehabilitation decision making for Queensland rivers and other aquatic ecosystems. By reviewing how prioritisation applies to each step of the rehabilitation process, advice can be provided on selecting the appropriate tool for the job, or identifying where new tools may be needed.

This project forms part of a suite of decision support tools developed by the Queensland River Management Program in collaboration with the Queensland Wetlands Program. It will integrate with the Aquatic Ecosystem Rehabilitation Process ([AERP](#), Figure 1) and the Queensland River Rehabilitation Management Guideline.

These decision support tools are underpinned by the [Whole-of-System, Values-Based Framework](#) (the

Framework). The Framework provides a decision making and planning framework that considers the biophysical components and processes of a system, and how these combine to deliver intrinsic values and ecosystem services. This approach facilitates transparent, scientifically robust and uniform management, decision-making and research.



**Figure 1:** The Aquatic Ecosystem Rehabilitation Process (WetlandInfo website, 2022).

The objectives of this project are to:

- review existing prioritisation tools available to managers.
- develop Principles of Prioritisation to guide a more consistent approach to river management and on-ground rehabilitation programs.
- provide an approach to prioritisation of river management and rehabilitation that integrates into multiple stages of the AERP.

## What will be delivered?

This project will develop overarching Principles of Prioritisation that will be applicable across a range of needs and objectives. The principles will be based on a comprehensive review and synthesis of existing prioritisation tools and literature for aquatic ecosystem management and rehabilitation.

Following review and development of the Principles of Prioritisation, an assessment will be made on how the principles align with each step of the [AERP](#), which at present does not explicitly address the issues of prioritisation.

The project will also review available prioritisation tools and document these in the [Wetland/Info Assessment Toolbox](#).

Project outputs will include:

- Global review and synthesis of prioritisation literature and tools with application to Queensland.
- Summary information of the Principles of Prioritisation, suitable for standalone factsheet.
- Integration of Principles of Prioritisation into the Aquatic Ecosystem Rehabilitation Process and Queensland River Rehabilitation Management Guideline, guidance on the use of existing prioritisation tools, and identification of gaps that need to be filled to aid prioritisation across the Process stages.
- Update of the [Wetland/Info Assessment Toolbox](#) with Queensland-based prioritisation tools.

Outcomes of the project will be made available on the [Wetland/Info website](#), and will be communicated to stakeholders and practitioners.

Potential end-users will include managers and decision-makers at all levels, from government departments, through to Natural Resource Management groups, local government and industry.

## Who is involved?

This project is led by the Queensland River Management Program, Department of Environment, Science and Innovation (DESI), in collaboration with the Queensland Wetlands Program and James Cook University's TropWATER.

The project is funded by the Australian Government Reef Trust and the Office of the Great Barrier Reef and World Heritage (Queensland Government), with additional funding from the Queensland Government Land Restoration Fund.

This project is being delivered by the Queensland River Management Program (QRMP) and the Queensland Wetlands Program, Department of Environment, Science and Innovation (DESI).

The QRMP is enabling adaptive integration and coordination of research and development, decision support, communication and knowledge transfer. Its objective is to enhance the impact and efficiency of river management policies, programs and responses to extreme events, long-term trends (e.g., climate change) and other impacts.

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