

Prioritisation of Rehabilitation and Research for Aquatic Ecosystems

Wetlands (aquatic ecosystems) and coastal ecosystems provide many services which are valued by humans. Most wetlands have multiple values and managing wetlands effectively involves balancing these values to achieve the best outcomes economically, socially and environmentally. The Aquatic Ecosystems/Wetlands Rehabilitation and Research (AEWRR) project will use a values-based approach to develop a plan for investing in the rehabilitation, research and offsetting of impacts to aquatic ecosystems in Queensland.

Background

Not all wetlands provide the same values or services. For example, one wetland may be primarily valued as fish habitat for fisheries productivity, while other wetlands might be considered more important for their agricultural productivity, nutrient processing, bird diversity or tourism values. Most wetlands have multiple values given their location within catchments, their links with the broader marine and terrestrial environment, wetland type and size, and the range of factors (such as condition) that influence them. This makes rehabilitation and offsetting of impacts to wetlands difficult as many factors need to be considered to have confidence that an outcome is to be achieved.

One way to be more confident in achieving a desired outcome from a wetland intervention is to use a **whole-of-system catchment management approach**, with an underpinning causal framework which explicitly links the type, location and state of a wetland to a desired suite of services or values. Such a framework should provide the opportunity for ecosystems to be considered according to specific beneficiaries for the values provided by a wetland.

A whole-of-system catchment management approach balances management for the multiple benefits of wetlands. This will optimise the benefits delivered by offsets and other restoration activities over the longer term.

There are currently many tools and approaches to aquatic site management, however there have been limited opportunities to develop a structured strategic approach to rehabilitation, prioritised research and

offsetting of impacts to aquatic ecosystems. Recent opportunities have emerged through a range of projects and initiatives and these have become particularly important as we enter the United Nations (UN) Decade of Ecosystem Restoration (2021-2030).

Objectives

The general objectives of the project are to:

- Develop an approach for **prioritising investment** in the rehabilitation of aquatic ecosystems involving explicit assessment of multiple values.
- Identify **rehabilitation methods** and assess how they work with regulation and policy, including baseline condition improvement and benefit measurements to demonstrate conservation outcomes, constraints, research gaps and policy gaps.
- Identify **locations of potential sites** for delivery of aquatic rehabilitation for particular values, including offset sites for aquatic Matters of State Environmental Significance (MSES).

To achieve the objectives a **values-based framework** will be used to better understand aquatic ecosystems in terms of services and values, by identifying and understanding the underlying components and processes, and considerations such as driving forces, threats or pressures (including those exacerbated by climate change), system-service causal links and management response. The values-based approach is an integral part of the whole-of-system approach (Figure 1).

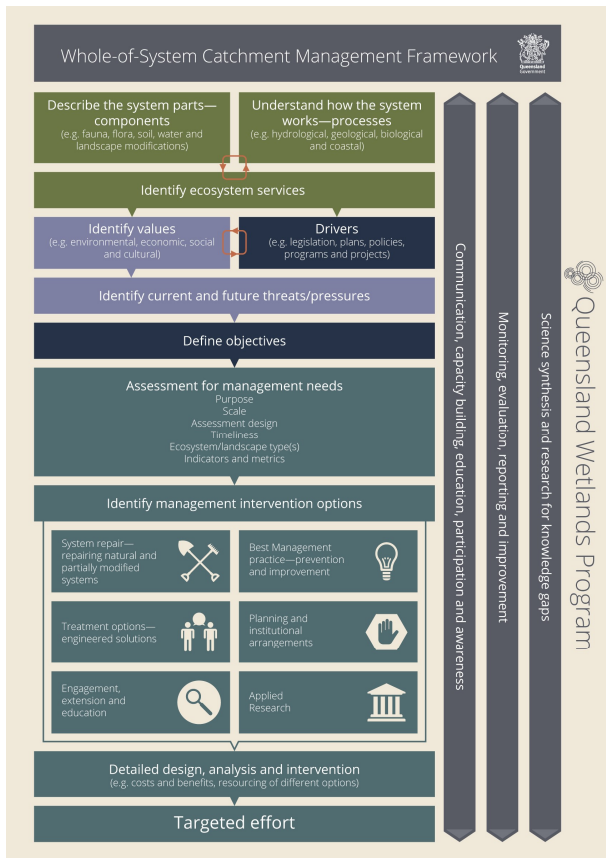


Figure 1: Whole-of-system catchment management framework (Wetlands in the Great Barrier Reef Catchments Management Strategy 2016-21).

Project activities

The activities to be undertaken include:

- Assess the different approaches to prioritisation of on-ground works for investment purposes, particularly those that consider multiple wetland values.
- Collate information related to rehabilitation, including on-ground methods, conservation outcome measures and identification of research gaps.
- Collate information related to fish, fish habitat (including marine plants), fish passage, fisheries and fishing effort including identification of research gaps.
- Identify potential sites representing high priorities for investment in on-ground works.

Project participants

This project is led by the Queensland Wetlands Program (QWP) in the Department of Environment and Science (DES), in collaboration with the DES Offset Fund Management Team (OFMT), DES Land Restoration Fund and the Department of Agriculture and Fisheries

(DAF) with financial assistance from QWP, OFMT and DAF. It is intended to inform offset funding and prioritisation of fisheries research funding, and is relevant to regional NRM body projects and other funding opportunities.

A wide range of stakeholders will be involved, including regional NRM bodies, First Nations groups, wetland site owners and landholders, research and tertiary institutions, commercial and recreational fishing groups, local government, non-government organisations and catchment groups.

A working group will establish the logic for rehabilitation and research for wetlands/aquatic ecosystem of Queensland. Technical groups will be called on as-required to progress technical issues such as the most efficient and effective evidence-based methods for undertaking on-ground rehabilitation works, or for addressing fisheries specific rehabilitation requirements. A cross-agency governance group will steer the project and the Queensland Wetlands Governance Group (QWGG) will oversee outputs.

A whole-of-system approach integrates:

- Science synthesis and research for knowledge gaps.
- Monitoring, evaluation, reporting and improvement.
- Communication, capacity building, education, participation and awareness.

In prescribed stages:

- Building understanding.
- Defining objectives.
- Determining threats/pressures and capacity/constraints.
- Options for intervention and implementation.

Get involved

Email wetlands@des.qld.gov.au to find out more. If you are involved in rehabilitation or undertaking relevant research, we would like to hear from you. Please email us to join the mailing list and to find out about future workshops and project outcomes.

The Queensland Wetlands Program, funded by the Queensland Government, supports projects and activities that result in long-term benefits to the sustainable management, wise use and protection of wetlands in Queensland. The tools developed by the Program help wetlands landholders, managers and decision makers in government and industry.

Contact wetlands@des.qld.gov.au

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