COASTAL PRIORITIES CASE STUDY

Flaggy Rock Creek Fishway Remediation

Project Overview

Flaggy Rock Creek Fishway was selected as a priority site for remediation in 2022 as part of Reef Catchments' Coastal Priorities Project. The site was initially identified through the updated 2022 Fish Barrier Prioritisation Report which identified 9,738 potential barriers to fish movement. This report identified the locations of the barriers, ranked them, prioritising those with the worst impact on fish communities as the highest priority for remediation. The importance of the site for remediation was then confirmed through a 'Walking the Landscape' process conducted with Koinjamal Traditional Owners. They confirmed that there had been a noticeable decline in fish species over the last ten years.







Importance of Waterway Connectivity

Aquatic fauna can depend on access to different ranges of habitats (e.g. freshwater & saltwater) for food & shelter, to avoid predators, and to seek out mates to breed and reproduce. Referred to as biopassage, this is the process where fish and other water-based species move naturally around their environment. Biopassage is paramount to the survival of many native species in Queensland. This includes species such as barramundi, jungle perch, long-finned eel, tarpon, mangrove jack, turtles, and sea mullet, which are significantly affected if they are unable to access breeding and feeding habitats.

What are Fish Barriers?

Barriers to fish passage include both anthropogenic and environmental obstructions that prevent, delay or impede the free movement of fish. Environmental barriers include weed chokes, low dissolved oxygen and water temperature barriers, whereas anthropogenic barriers encompass dams, weirs, causeways, culverts, earthen bunds and floodgates. Barriers impact fish communities in many ways, with large structures (e.g. dams) forming complete blockages, whereas small or medium structures (e.g. causeways, weirs), present partial or temporary barriers, restricting passage during particular flow conditions. Unfortunately, barriers to fish passage are widespread in the highly urbanised coastal catchments throughout Australia.









Flaggy Rock Creek Fishway

Flaggy Rock Creek, located south of Carmila, has a total of 161 recorded barriers in this waterway, in a catchment area of 190km2. The Flaggy Rock Creek fishway was ranked as a highpriority barrier in the region (Rank #2). The rock and concrete channel at the bottom of the fishway washed away in the 2010/2011 floods, which caused the bed to scour below the outlet and the tailwater level (waters immediately downstream of fishway) to drop, thus creating a physical fish barrier.



Image: Barrier at fishway entrance

This project sought to repair the Flaggy Rock Creek fishway by filling the scour erosion up to the natural bed and bank-level which reinstates the tailwater level, as well as reinstate the rock/ concrete channel at the fishway entrance acting to protect against future scour erosion.

"Water flows are important to Country as it maintains the health and reproduction of our fish species."

Samarla Deshong, Koinmerburra Aboriginal Corporation Cultural Heritage Officer



Images: Fishway entrance 'before' (left) and 'after' (right) remediation







Traditional Owner Engagement

Flaggy Rock Creek falls within the boundaries of the Koinmerburra peoples Country, which includes Pine Mountain (Normanby Range) across to Styx River, north along the coast to Cape Palmerston and west to the Clarke Connor Range. After publication of the Fish Barrier Prioritisation Report, Reef Catchments, along with many other stakeholders, met with Koinmerburra Traditional Owners in a 'Walking the Landscape workshop' for Clairview. At this meeting, the Flaggy Rock Creek fish barrier was identified as a key issue for Traditional Owners. The Traditional Owners shared that they have noticed a clear decline in fish species over the last 10 years and would be supportive of efforts to resolve the situation.

Two Koinmerburra Aboriginal Corporation Cultural Heritage Officers joined the Reef Catchments, Catchment Solutions and Sarina Mini Excavators project team for the first two days of on-site work to observe the diggings for cultural artefacts and perform a site assessment evaluation. During this time, three culturally significant artefacts were identified and relocated to a safe area. On the third day of on-site work, Koinmerburra Aboriginal Corporation granted clearance of the Flaggy Rock Creek fishway.



Image: Koinmerburra Aboriginal Corporation Cultural Heritage Officers with Trent Power, Catchment Solutions at Flaggy Rock Creek "The fish ladder project was a great learning experience. I learnt about Cultural Heritage from the elders; and about the construction, function and purpose of the fish ladder from Trent and the Reef Catchments staff."

Leighton Bickey, Koinmerburra Aboriginal Corporation







Useful Resources

- Catchment Solutions. (2021). Fish Barrier Prioritisation Mackay Whitsunday Region, Mackay, Queensland, (https://reefcatchments.com.au/files/2020/06/MW_FishBarrierPrioritisation_2 021_Report_FINAL_R1.2-3.pdf)
- Catchment Solutions. (2015). Mackay Whitsunday Fish Barrier Prioritisation 2015, Mackay Queensland, (http://www.catchmentsolutions.com.au/files/2015/08/Mackay-Whitsunday-Fish-Barrier-Prioritisation-Report-2015.pdf)
- Department of Environment and Science. (2021). Aquatic Fauna Passage (biopassage), (https://wetlandinfo.des.qld.gov.au/wetlands/management/fish-passage/)

Reef Catchments thank you for your support.

Catchment Solutions





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