



Lower Balonne Quarterly Snapshot – September 2024

The Lower Balonne Area encompasses the Lower Balonne Floodplain, supports the largest number of wetlands of any catchment in the Murray–Darling Basin (MDB), and makes up two-thirds of the Condamine–Balonne Valley, one of the largest catchments in the MDB.

The Lower Balonne covers two million hectares across Queensland and NSW and is home to the Culgoa, Balonne, Condamine and Narran rivers and adjacent floodplains and wetlands. It includes the internationally significant and Ramsar-listed Narran Lakes (Dharriwaa).

The lands of the Lower Balonne have been important to Aboriginal People for thousands of years with their history, culture and livelihoods closely intertwined with its river systems.

The Lower Balonne provides habitat for a diverse range of plants, including endangered vegetation communities, and habitat for waterbirds, native fish and many vulnerable and endangered species.

At Narran Lakes these include nationally and internationally threatened wetland-dependent species such as the Australasian bittern, Murray cod and Winged peppercress.

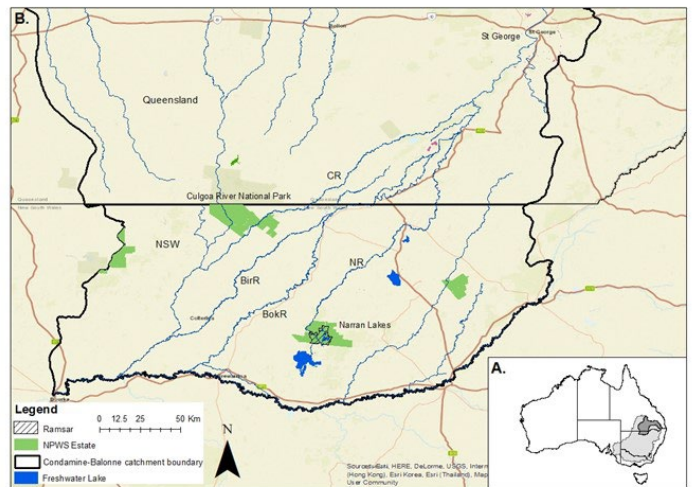
Narran Lakes supports at least 65 waterbird species, including 14 listed under international migratory agreements. The lakes are a waterbird breeding site for Ibis, Egrets, Royal spoonbills and Pelicans.

Permanent waterholes in the Lower Balonne’s main and distributary channels provide critical fish habitat during low or cease-to-flow periods. Many species persist in these areas until larger flows allow them to recolonise the system.

The Lower Balonne Area is an important addition to the Flow-MER program in 2024.

The Commonwealth Environmental Water Holder (CEWH) manages a suite of unregulated and overland flow licences in the Lower Balonne. These licences provide access to river

and overland flows when certain conditions are met. The CEWH can also implement Event-Based Mechanisms under certain conditions to protect additional water in the Lower Balonne.



A. Location of the Condamine-Balonne catchment (dark grey) within the MDB (light grey). B. The Lower Balonne Area south of St George, CR –Culgoa River, BirR–Birrie River, BokR–Bokhara River, NR–Narran River, showing Narran Lakes and Ramsar area.

University of New South Wales

The University of New South Wales (UNSW) Centre for Ecosystem Science has been engaged by the CEWH to conduct Flow-MER activities in the Lower Balonne Area from July 2024 to June 2029.

The Lower Balonne Area Flow-MER project team is led by UNSW’s Dr Kate Brandis, who works with researchers and other specialists to undertake the work. These specialists include representatives from the NSW Department of Primary, Industries and Regional Development; NSW Department of Climate Change, Energy, the Environment and Water; NSW National Parks and Wildlife Service and local Aboriginal people.

Top image: Narran Lakes during an Australian Pelican breeding event, March 2023.



The Flow-MER Program team acknowledges the Aboriginal communities of the Murray–Darling Basin and pays respect to Elders past and present. We acknowledge Aboriginal People as the Traditional Owners of the land, water and sky Country across the Basin and value the expertise, wisdom and enduring connections that have informed their care for Country over millennia. We recognise the intrinsic connection of Aboriginal People to Country, and we value the enduring cultural, social, environmental, spiritual, and economic connection to the rivers, wetlands, and floodplains of the Basin. Artist: Rebecca Salcole

Flow-MER Themes



Native vegetation

Our native vegetation studies aim to understand how environmental water contributes to maintaining, improving or influencing woodlands, lignum shrublands and non-woody wetland vegetation; and the resilience of vegetation to fire.

Study methods include field surveys and remote sensing. Belt transects will be used to investigate vegetation responses along shorter gradients including riparian transects for key channels and water bodies.

Key 2024–2025 activities will be selecting field sites and mapping vegetation across the study area.



Native fish

Our native fish studies aim to understand how water for the environment contributes to population structure, abundance, diversity, recruitment and condition.

Sampling will be conducted annually at sites with water in late summer/autumn.

Twenty sampling sites have been selected from below Beardmore Dam in Queensland through into NSW above the confluence with the Barwon River. It includes sites on the Narran, Culgoa, Bokhara and Birrie rivers.

Boat and backpack electrofishing, un-baited traps and fyke nets will be used to undertake the work.

In addition, fish sampling will be undertaken in 2024–2025 to understand which fish species use Narran Lakes.



Waterbirds

Our waterbird studies aim to understand how water for the environment contributes to the abundance and species diversity, breeding occurrence, habitat provision and support, and breeding success for large breeding events.

The team will undertake four repeat sets of ground-based field surveys at 10 sites annually plus annual spring aerial and ground surveys. We will also utilise acoustic recorders and continuously monitor water depth and inundation.

This first year will focus on the field surveys, and the deployment of depth loggers and acoustic recorders.



Dharriwaa (Narran Lakes), January 2023.



River flows and connectivity

Our river flow and connectivity studies aim to understand how the river and wetlands work together under a range of flow scenarios with different water inputs including flow regimes, hydrological connectivity, and biotic indicators (e.g. waterbirds and flood-dependent vegetation).

The team will utilise a range of data sources, satellite imagery, river gauges and depth loggers.

Our 2024–2025 activities will focus on the establishment of a data archive, computing environment, and workflow for satellite imagery, inundation models, gauge and logger data.



Cultural outcomes

The Dharriwaa Elders Group and Narran Lakes Nature Reserve Joint Management Committee are the cultural advisors for the Lower Balonne region. They will support relationship-building between Aboriginal People with connection to Country and UNSW staff which will be our focus for 2024–2025. Cultural advisors will work with Aboriginal People with connection to Country to:

- Facilitate knowledge sharing between Aboriginal People, and between Aboriginal People and UNSW staff
- Identify opportunities and activities to support the values and aspirations of Aboriginal People
- Facilitate opportunities for Aboriginal People to be involved in the design and implementation of Flow-MER projects and activities.

In working together, UNSW will support the protection of Indigenous Cultural and Intellectual Property (ICIP) and Indigenous Data Sovereignty rights as appropriate for the Aboriginal People we work with.

More information

Visit www.flow-mer.org.au or contact the UNSW's Flow-MER Communications Officer, Jane Howard on jane.howard@unsw.edu.au



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