



## Macquarie River Valley 2021–22: Update 1

### Objectives:



- Support feeding habitat and colonial waterbird breeding
- Maintain connectivity between the Macquarie River/Wambuul, Macquarie Marshes and Barwon River
- Support native fish breeding, recruitment and movement
- Maintain inundation of wetland vegetation

### Timing:

Winter 2021 to autumn 2022, as required

### Target areas:

Macquarie River/Wambuul to the Barwon River and the Macquarie Marshes

The iconic Macquarie Marshes has supported some of the largest colonial waterbird breeding events in Australia. The most recent major nesting events occurred in 2016–17 and previously in 2010–11.

As at December 2021, the largest colonies in the Marshes were made up of ibis (Australian white, straw-necked and glossy) and combined egrets and night herons (primarily intermediate and eastern great egrets).

There has been a long-term trend of declining waterbird populations across the Murray–Darling Basin so these large colonies are critical to sustaining and ultimately recovering waterbird populations.

The NSW Department of Planning and Environment and the University of NSW continue to monitor the size and health of the colonies, now numbering around 20 colonies, ranging between 30 and 15,000 nests in size.

### Connecting flows

Flows through the mid and lower Macquarie River have arisen from widespread rainfall, tributary flows, managed water for the environment, and Burrendong Dam flood mitigation zone releases. These have connected river, wetland and floodplain habitats and allowed movement and breeding opportunities for native fish and other aquatic animals. Important connections are also being made with the Barwon River, ideal for migratory species like golden perch.



Intermediate Egret and chicks, Macquarie Marshes, December 2021 (photo: Nicola Brookhouse, NSW EES National Parks Wildlife Service (NPWS)). Photo collected during scientific monitoring.

### Waterbirds are breeding!

The widespread rainfall over the Macquarie catchment in late 2021 has meant significant river flows and wetting of the Macquarie Marshes. The waterbirds are benefitting from these wet conditions with egrets, herons, ibis, cormorants, and darters nesting in colonies throughout the Marshes, along with a range of non-colonial species like ducks, waterhens and terns.



Checking on waterbird colonies (photo: Nicola Brookhouse, NSW EES NPWS). Colonies are not publicly accessible.

## Adapting to conditions

Environmental water managers plan for a range of scenarios and adapt plans as conditions change. Initial objectives for NSW and Commonwealth water for the environment for this water year were to support wetland vegetation recovery. Planned flows were also considered for Murray cod breeding in the Macquarie River between Wellington and the Marshes.

As widespread and frequent rainfall events continued over winter/spring 2021, only a small volume of NSW and Commonwealth water for the environment was delivered between July and November 2021. This water supported vegetation and waterbird habitat in the Macquarie Marshes and provided connection along the Macquarie River/Wambuul to the Barwon River.

Watering objectives changed in October 2021 in response to the wetter conditions. Water for the environment objectives now focus on supporting successful colonial waterbird breeding and maintaining connectivity with the Barwon River to support native fish movement and recruitment.



*A small part of an Ibis colony in the Macquarie Marshes Nov 2021 (Photo: NSW EES). Photo collected during scientific monitoring.*

## Supporting nesting waterbirds

Egrets and ibis take several months to complete their breeding cycle of nest building, incubation, and rearing young. The current colonial nesting event is likely to continue into March 2022.

Ibis are sensitive to sudden drops in water levels within their colonies and may abandon nests if this occurs. It is important that minimum flows are provided to reduce the risk of failure. Hungry parents and young birds need a secure food source, with flows needed to maintain inundation of key feeding sites. These areas provide food such as frogs, fish and insects for the parents and their chicks, and are also needed for juvenile birds after they have left their nests.

Ensuring these colonies complete breeding successfully is important for waterbird populations. Water for the environment may be delivered during summer and/or autumn 2022 to help complete colonies once flood mitigation flows from Burrendong Dam and tributaries recede. The amount of water delivered will continue to be managed adaptively by local staff, depending on catchment rainfall and other flows in the system and the needs of the colonies.



*Black winged stilts in the Macquarie Marshes (Nicola Brookhouse, NSW EES NPWS).*

## Our partners

The delivery of water for the environment is undertaken by the Commonwealth Environmental Water Office and NSW Department of Planning and Environment in consultation with the Macquarie–Cudgegong Environmental Water Advisory Group. This group includes representatives from local landholders, the irrigation industry, relevant agencies, environment groups and the Aboriginal community.

## Contacts

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*We acknowledge the Traditional Owners of the Murray-Darling Basin. We pay our respects to them and their elders past, present and emerging.*