



Australian Government

Commonwealth Environmental Water Office

Macquarie River Valley 2018–19 Water Use

Surviving the drought: delivery of water for the environment



Macquarie River (CEWO)

In 2018–19 the Macquarie River Valley was experiencing severe drought conditions, with inflows to Burrendong Dam being the lowest on record over 22 months to May 2019.

Water for the environment was delivered in 2018–19 to build resilience in the Macquarie Marshes, and to help native fish, waterbirds and frogs survive the drought. This was based on planning undertaken by the Commonwealth Environmental Water Office and NSW Department of Planning, Industry and Environment, with advice from the Macquarie Cudgegong Environmental Flows Reference Group.

Expected outcomes



Inundate core areas of wetland vegetation, including mixed marsh, water couch and river red gum.



Water important breeding and foraging habitat for waterbirds.



Provide increased movement, feeding and spawning opportunities for native fish, and increase fish survival.



Increase connectivity between the Macquarie River, Marshes and Barwon River, and maintain refuge habitat.

How was water for the environment used in 2018–19?

A total of 126,477 ML of NSW and Commonwealth environmental water was delivered to the mid-Macquarie River and Macquarie Marshes in winter-spring 2018.

The first part of the flow (9,070 ML) was designed to pre-wet the Northern and Southern Marshes in winter, to increase delivery efficiency and maximise the inundation extent.

The remainder of the water (117,407 ML) was delivered in spring, and was designed to inundate wetland vegetation in the Northern, Southern and Eastern Marshes, provide habitat for waterbirds, and support the movement and possible spawning of native fish.

A further 1,100 ML was delivered to two refuge habitat sites in autumn 2019 to maintain refuge habitat and support native fish survival: the Lower Nyngan Weir Pool on the Bogan River (300 ML), Methalibah Reserve on Ewenmar Creek (800 ML).

The volume of water for the environment delivered was within the temporary restriction of 70 per cent of carryover allocations put in place by the NSW Department of Industry in August 2018.



Ewenmar Creek refuge habitat site (NSW DPIE)

What was the response to water for the environment?

Wetland inundation and vegetation

Water for the environment inundated approximately 15,014 hectares in the Northern, Southern and Eastern Marshes, including wetland plants that need water every 1–2 years, such as water couch, reedbeds, mixed marsh and river red gum.

The areas watered benefited from the delivery, by supporting the growth and condition of plants, and completion of plant life cycles. This helps build resilience so those areas can respond better when conditions improve again.

Waterbirds

A total of 42 species of waterbirds were recorded by NSW DPIE during spring surveys, including nationally endangered Australasian bittern, sharp-tailed sandpiper and Latham's snipe, which are both listed on international migratory bird agreements, and brolga, which are listed as vulnerable in NSW. Water for the environment provided feeding and refuge habitat, including for large flocks of ducks.

Frogs

Six frog species were identified by NSW DPIE during surveys in the Macquarie Marshes, with recruitment recorded at eight survey sites. Frog activity was in response to the delivery of water for the environment, with limited rainfall and other flows in the system.



Marsh frog tadpole (NSW DPIE)

Connectivity

Water for the environment reached the Barwon River on 22 October 2018, providing approximately 2,677 ML of water to the Barwon. There were no flows in the Barwon River at the time, and water for the environment from the Macquarie helped to reconnect and top up the 175 known refuge pools

between the Macquarie junction and Brewarrina Weir. This also helped to improve water quality and the condition of native fish.



Pelicans at Monkeygar Swamp (CEWO)

Refuge habitat

In the ongoing drought, water for the environment was used successfully to maintain refuge habitat and prevent native fish kills at sites on the Bogan River and Ewenmar Creek. This included supporting the survival of a known population of the endangered olive perchlet in the Bogan River.

Our partners

Delivery of water for the environment in the Macquarie River Valley is planned and managed by the Commonwealth Environmental Water Holder and the NSW Department of Planning, Industry and Environment.

The Macquarie Cudgegong Environmental Flow Reference Group, which includes community members from local interest groups and government, provides important local advice.

Local Engagement Officers

The Commonwealth Environmental Water Office has two Local Engagement Officers based regionally in the northern Murray–Darling Basin, who can be contacted for further information:

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