Connectivity

- No specific actions are planned. No connectivity between the Barwon River and Lower Macquarie River is expected without significant Marshes inflows or flows along the unregulated Castlereagh River or upper Marthaguy Creek.
- Some assets within the catchment will be connected with low regulated operational flows, particularly between Burrendong Dam and Warren.
- With mid-catchment rainfall and dam inflows, the priority is to replenish drought refuges. Should drought balances be restored, there may be opportunities for some flows that connect wider parts of the catchment.

How we make decisions

DPIE–EES is supporting the health and resilience of rivers and wetlands by delivering water for the environment where and when it is needed.

We use the best available science, management expertise and experience to manage water across the landscape.

This statement of annual priorities identifies the waterways and wetlands that are likely to receive water under predicted weather conditions.

As rainfall is hard to predict, our decision-making process considers:

- expected availability of water in the coming year
- conditions of the previous year
- current health of the flow-dependent plants and animals.

Environmental water advisory groups provide feedback and advice to DPIE–EES on the management of water for the environment. This group will provide further advice on watering priorities if additional water is made available during 2019-20

What is water for the environment?

Water for the environment is a share of the water in dams and rivers that is set aside to support the long-term health of local rivers, creeks and wetlands. Healthy rivers carry water to homes, farms, schools and businesses. In the Macquarie-Castlereagh catchment, rivers and wetlands are important cultural and spiritual sites for the Wiradjuri and Ngemba-Wailwan people.

About the Macquarie catchment

The Macquarie-Castlereagh catchment covers more than 75,000 square kilometres in the state's central west. It extends from the Blue Mountains to the Barwon River Plains, with major tributaries including the Cudgegong, Talbragar and Bell rivers. The valley is home to the iconic Macquarie Marshes – one of the largest semi-permanent wetland systems and colonial waterbird breeding sites in inland Australia.

Expected environmental water volumes available at 1 July 2019

Source	Maximum volume available [1]	Volume expected at 1 July under current conditions[2] [3]
Planned environmental water		
Environmental water allowance	160 gigalitres	0 gigalitres
Water licensed to NSW		
General security	48.4 gigalitres	0 gigalitres
Supplementary	1.4 gigalitres	0 gigalitres
Water licensed to the Commonwealth		
General security	126.2 gigalitres	0 gigalitres
Supplementary	8.3 gigalitres	0 gigalitres

Note:

[1] gigalitre = 1000 megalitres = 1 billion litres, 2.5 megalitres = 1 Olympic swimming pool

[2] This is an indicative summary of expected volumes to be available. For further detail and information on available volumes, please contact the region via DPIE–EES enquiries on 1300 361 967

[3] Volumes held in carryover accounts at 1 July 2019 will be subject to quarantining into the 'drought account' and no availability is predicted unless significant rainfall and dam inflows occur.

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Email: info@environment.nsw.gov.au; Website: www.environment.nsw.gov.au.

Cover photo: Kids exploring the Macquarie Marshes. Photo Emma Wilson/DPIE.

Page 2 infographic: J Humphries/DPIE.

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NSW GOVERNMENT

NSW DEPARTMENT OF PLANNING, INDUSTRY AND ENVIRONMENT

Macquarie-Castlereagh catchment

Annual Environmental Watering Priorities 2019–20

environment.nsw.gov.au

Water for rivers and wetlands

In 2019–20, water managers will work to maintain drought refuges and core aquatic ecosystem values in the Macquarie-Castlereagh catchment.

Ongoing dry conditions are likely to result in low or no access to carryover balances. In this situation, the three-year watering strategy for the Macquarie Marshes, developed in early 2017, cannot be continued. Instead, efforts will focus on maintaining drought refuge pools within streams in the lower parts of the Macquarie catchment.

If successful, these refuges will allow native fish species to survive under the extreme drought conditions. Refuge pools will also support small numbers of waterbirds and riparian vegetation in some areas.

Weather and water forecast

Rainfall in the catchment is well below levels documented during the worst drought on record. When combined with warmer-than-average temperatures, the condition of rivers and wetlands is set to decline further from their current levels.

Current weather predictions are for ongoing warm and dry conditions. The water level in Burrendong Dam is expected to drop below 5 per cent at the start of the water year. Burrendong Dam has been drawn below 10 per cent on five similar occasions (June 1995, Jan 1998, Apr 2003, May 2004 and Jan 2007). Any water remaining will be used to service essential human needs.

Advice from WaterNSW and Department of Planning, Industry and Environment (DPIE)–Water indicates that:

- all remaining carryover balances at 1 July 2019 move into the 'drought' account, suspending access. This includes remaining general security licences and Environmental Water Allowance in the Macquarie
- the Macquarie Catchment will shift toward drought management under the DPIE–Water Extreme Events Policy
- any inflows into Burrendong Dam will be used to firstly ease the current under-resourcing of basic river operations and town water supplies. Further inflows may result in restoration of drought account balances, with significant inflows required before any further allocations are made.

Water managers have prepared watering plans that take into consideration a range of weather and water availability scenarios. This is known as Resource Availability Scenario planning. Very dry conditions are forecast for the Macquarie-Castlereagh catchment in 2019–20.

Resource availability scenario

Very dry

Main aim: Protect

- Avoid critical loss
- Maintain key refuges
- Avoid catastrophic events

Dry

Main aim: Maintain

- Maintain river functioning
- Maintain key functions of high priority wetlands

Moderate

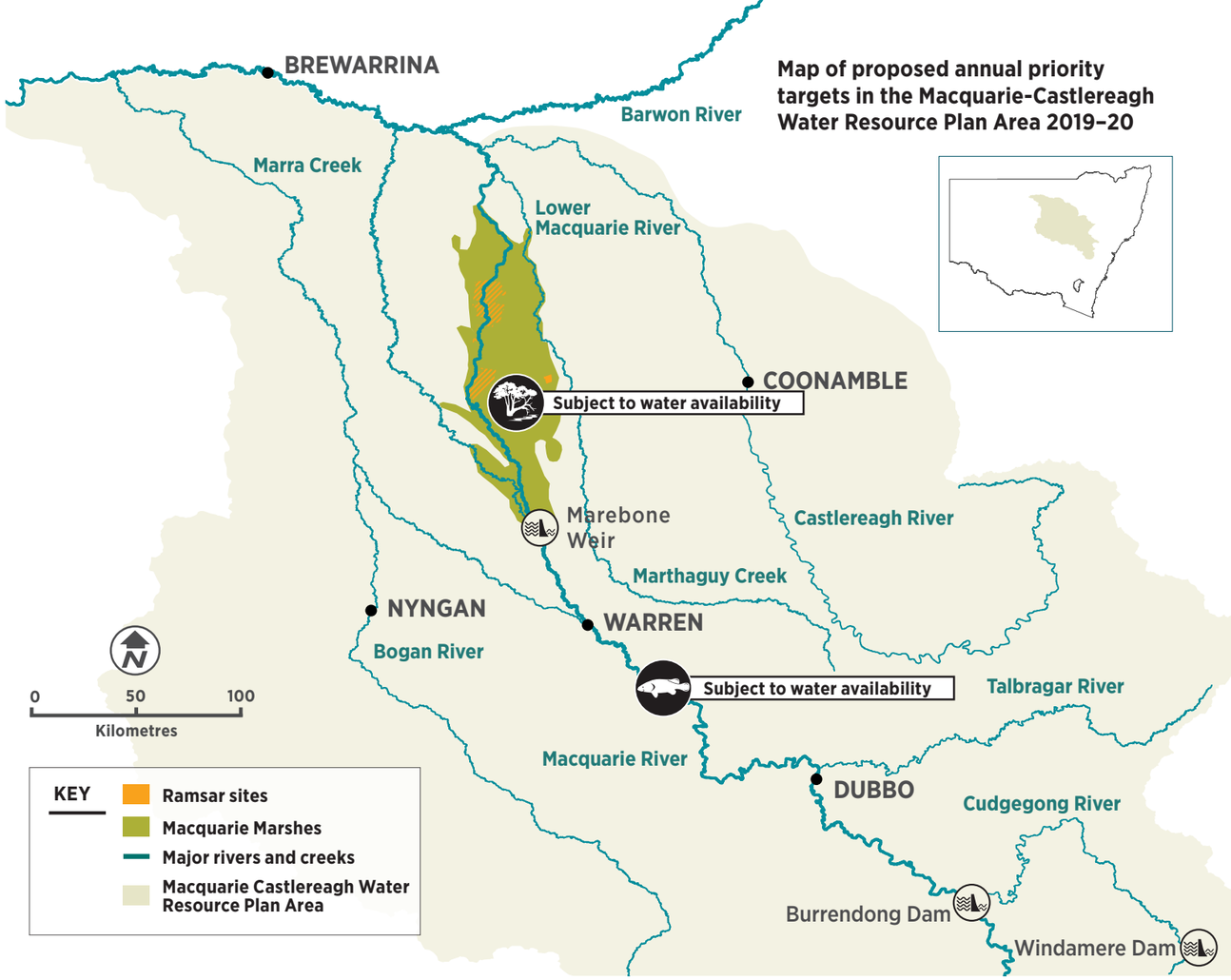
Main aim: Recover

- Improve ecological health and resilience
- Improve opportunities for plants and animals to breed, move and thrive

Wet to very wet

Main aim: Enhance

- Restore key floodplain and wetland linkages
- Enhance opportunities for plants and animals to breed, move and thrive



Map of proposed annual priority targets in the Macquarie-Castlereagh Water Resource Plan Area 2019–20

Key planned actions for 2018–19

Waterbirds

- No specific actions are planned. We expect to see a reduction in the diversity and abundance of waterbirds as they leave the catchment to find alternative habitat.
- Refuge pools will support some minor waterbird foraging and breeding opportunities.
- With mid-catchment rainfall and dam inflows, possible smaller-scale inundation of the Macquarie Marshes may be possible either through natural flows or use of carryover held in the drought account should it be made available.

Native fish

- The primary focus will be to provide flows to support core native fish refuges along the regulated mid-Macquarie River.
- Without access to water for the environment, DPIE–Energy, Environment and Science (EES) will advise DPIE–Water on the use of regulated operational flows to support native fish.
- With mid-catchment rainfall and dam inflows, DPIE–EES will seek to replenish drought refuges. Should drought balances be restored, there may be opportunities for flows that benefit in-channel fish guilds.

Vegetation

- If water held in the drought account is made available, a delivery (up to 110 gigalitres) would support and prevent irretrievable loss or damage to 4000-9000 hectares of reed beds, water couch meadows, mixed marsh areas and river red gum forests in the southern and northern Macquarie Marshes.
- Some riparian vegetation will be supported where regulated flows are present.
- These small flows may have some limited recharge effects on the declining shallow groundwater systems to help sustain vegetation communities.