



Department of Planning, Industry and Environment

# Gwydir Catchment

Water for the Environment: Annual Priorities 2021-22



# Water for rivers and wetlands



In 2021–22, water managers will continue to manage available water in response to the highly variable climatic nature of the Gwydir catchment.

This adaptive approach will include locally developed management principles and flow triggers to support any or all of the following:

- priority river reaches, during extended dry periods
- restoration of natural river flows to downstream rivers and wetland communities
- colonial waterbirds, should flooding trigger a return of breeding
- unplanned contingencies that require water for the environment.

The Gwydir catchment experienced a recent moderate increase in water availability. This change occurred in the later part of 2020 and continued to increase in early 2021 culminating in a major flood event across the Gwydir River floodplain during March and April.

During the 2020–21 water year, water for the environment was used to return a portion of natural flows into the Gwydir Wetlands, Mehi River, Mallowa and Carole creeks. It was also used to support a small colonial waterbird breeding event that occurred in the Gingham Watercourse.

In the 2021–22 year, water managers will respond to rainfall and natural flows and provide deliveries to water dependant assets.

Up to 5 gigalitres has been set aside to respond to unexpected or unplanned situations that require water for the environment to address an emerging risk to environmental assets.





# Weather and water forecast

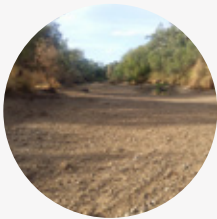


In April 2021, the Bureau of Meteorology confirmed the 2020–21 La Niña has now passed. Climate model outlooks indicate the El Niño–Southern Oscillation (ENSO<sup>1</sup>) is now neutral with no sign of either La Niña or El Niño developing at least until September 2021. Rainfall was below average and temperatures warmer than average in May and June 2021 for eastern mainland Australia, including the Gwydir catchment, and this will continue in July. However, water availability is predicted to be higher than average.

Reserves of held Commonwealth and NSW water are also likely to increase, and along with carryover, small to moderate volumes will be available for use.

Water managers have prepared watering plans that consider a range of weather and water availability scenarios. This is known as resource availability scenario planning. Moderate to wet conditions are forecast for the Gwydir catchment in 2021–22.

## 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

<sup>1</sup>ENSO: The interaction between the sea surface and atmosphere over the Pacific Ocean which results in dryer or wetter conditions (El Niño or La Niña).

# Key planned actions for 2021-22



## Waterbirds

Heavy catchment rainfall, resulting in large river flows and/or floodplain flooding, may trigger colonial waterbird breeding events in the wetland systems. In response, up to 15 gigalitres of held water for the environment may be provided to support these events.



## Native fish

If needed, there may be water deliveries for basic ecological needs in the Carole Creek, Mehi and Gwydir rivers this season. The aim is stream connectivity and support of native fish communities during extended dry periods, which may require up to 14 gigalitres.



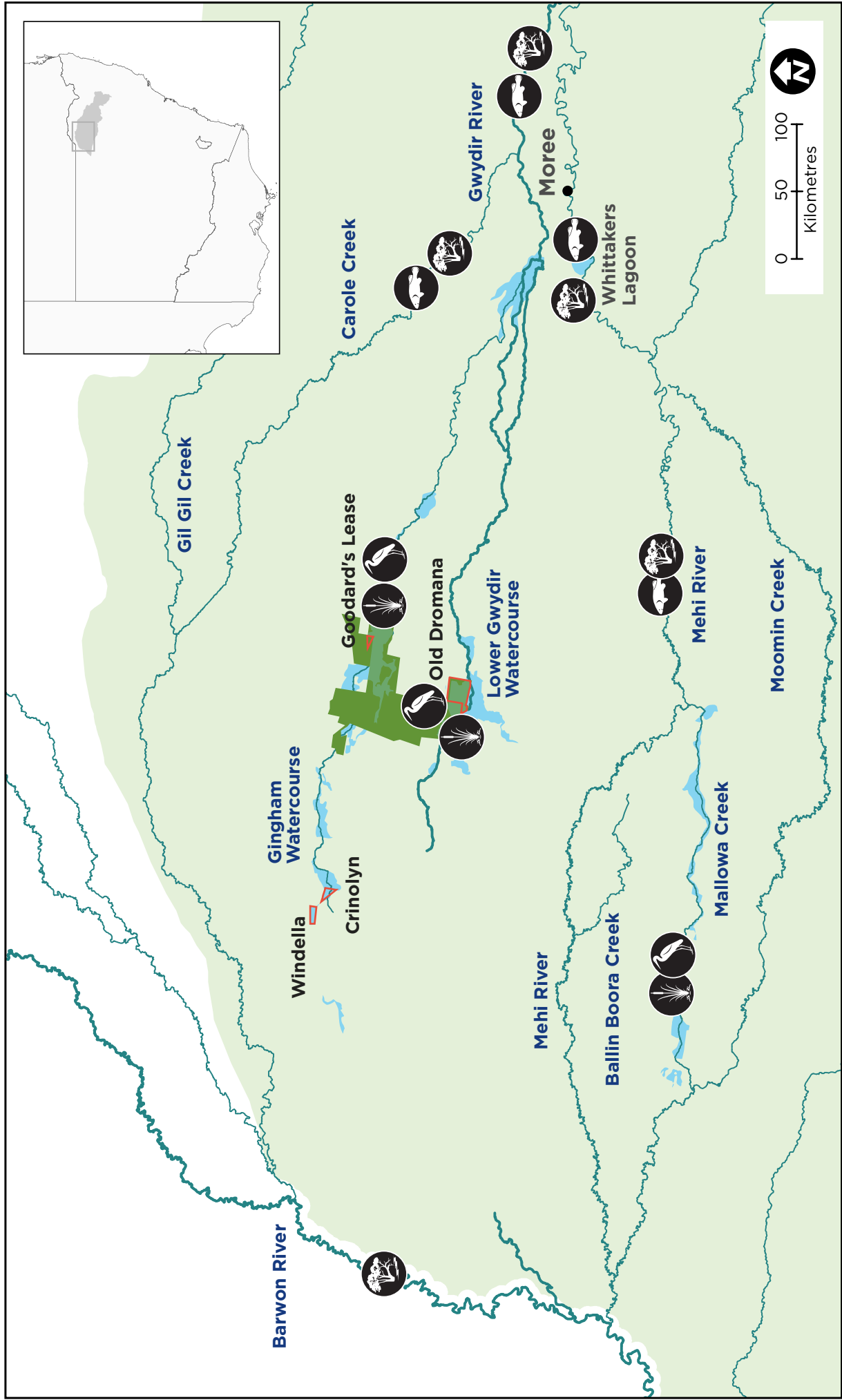
## Vegetation

Substantial natural rainfall and river flows would be required to initiate a small delivery of held water into either the Gwydir Wetlands system, Mehi River, and Mallowa and Carole creeks this season. Environmental allowances or licensed water may be used. However, on their own, these volumes are unlikely to be beneficial, and up to 40 gigalitres may be used.



## Connectivity

If needed, water deliveries for basic ecological needs in the Carole Creek, Mehi and Gwydir rivers may occur this season. The aim is stream connectivity and support of native fish communities during extended dry periods, which may require up to 14 gigalitres.



**Figure 1** Map of proposed annual priority targets in the Gwydir Water Resource Plan area 2021-22.

# How we make decisions



Department of Planning, Industry and Environment (the Department) supports the health and resilience of our rivers and wetlands by delivering water for the environment where and when it is most 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.

Our decision-making process considers:

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

Community-based environmental water advisory groups provide feedback and advice to the Department on the management of water for the environment.

The NSW Government works with the Commonwealth Environmental Water Holder to manage water in the catchment.



## 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 Gwydir catchment, rivers and wetlands are important cultural and spiritual sites for Aboriginal people, as well as the broader community.

# About the catchment



The Gwydir catchment covers 25,596 square kilometres. The eastern upland creeks mainly flow into the Gwydir River upstream of Copeton Dam. Downstream, on the western floodplain, the main Gwydir River splits into its main distributaries – the Mehi River (south), Carole Creek (north), Lower Gwydir and Gingham Channels (west/central).

The Big Leather (Lower Gwydir) watercourse supports the State’s largest stand of marsh club rush. The Gingham Watercourse contains important colonial waterbird breeding habitats. The Gwydir wetlands are home to four wetland parcels listed under the Gwydir Ramsar landholder agreement. The Gwydir catchment supports important Aboriginal cultural heritage values for the Kamilaroi/ Gomeroi people.

**Table 1** Expected environmental water volumes available at 1 July 2021.

Source	Maximum volume available (gigalitres – GL)	Volume expected 1 July under current conditions (gigalitres – GL)
<b>Planned environment water</b>		
Environmental water allowance	90 GL	42.2 GL
<b>Water licenced to NSW</b>		
General security	17 GL	17.09 GL
Supplementary	3 GL	Event-dependent
High security	1.2 GL	1.2 GL
<b>Water licenced to the Commonwealth</b>		
General security	89.5 GL	69.8 GL
High security	4.5 GL	4.5 GL
Supplementary	20.4 GL	Event-dependent

**Note:** This is an indicative summary of expected volumes to be available. For further detail and information on available volumes, please contact the region via Department enquiries on 1300 361 967. 1 gigalitre = 1000 megalitres; 2.5 megalitre = 1 Olympic swimming pool

Environment, Energy and Science Group,  
Department of Planning, Industry and Environment,  
Locked Bag 5022, Parramatta NSW 2124.  
Phone: 1300 361 967 (environment information and publications requests);  
Email: [info@environment.nsw.gov.au](mailto:info@environment.nsw.gov.au);  
Website: [www.environment.nsw.gov.au](http://www.environment.nsw.gov.au)  
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Cover photo: Jessica Heath and Wayne Kuo (DPIE) birdwatching from the Birdhide at Bunnor Waterbird Lagoon on Gwydir Wetlands State Conservation Area (David Preston/DPIE); Page 2: Boyanga Waterhole, Gwydir Wetlands (Jennifer Spencer/DPIE); Royal Spoonbill Upper Gingham Wetlands Gwydir Wetlands Moree bird breeding season RAMSAR Environmental Water (Daryl Albertson/DPIE); Page 3: Gwydir Wetlands Ramsar site (Daryl Albertson/DPIE); Page 7: Black winged stilt Gwydir Wetlands (Daryl Albertson/DPIE); Page 8: Waterbird Lagoon and Bunnor Birdhide (Johann Brueggemann)