Lachlan River Watering Event:
Mimic seasonal variability and respond to natural triggers (tributary inflows)
Community Update #5.
19 December 2018

This in the fifth update for the Lachlan River Watering event for 2018-2019. ***Water is being delivered to the Lachlan River below Wyangala Dam in response to recent system inflows (runoff) triggered by rainfall.*** *The event will assist to build on the inflows to mimic seasonal variability that is a natural occurrence in the Lachlan River and connecting wetlands including the Great Cumbung Swamp.*

The Lachlan River is receiving inflows from rainfall in the catchment both above and below Wyangala Dam. The inflows below the dam will be protected from extraction for the entire the length of the river. To further assist in restoring natural variability of flows, water for the environment, some water is also being released from the dam to reflect the contribution from natural inflows occurring above the dam.

Aims of this watering event: This watering event aims to protect natural system inflows from regulation to mimic seasonal flow variability and allow food (carbon) produced in the upper catchment to pass through the dam, the Lachlan River and into the Great Cumbung Swamp. Protecting natural flow events helps to increase the availability of food for animals that live in the river, promote wetland plant growth and provide habitat for water dependant native animals.

Specific objectives:

Fish: Promote movement, reproduction and dispersal of native fish species. Monitoring suggests that some native fish species tend to move more during natural flows than during releases from dams.

Research indicates natural run-off and associated odours can cue fish movement and provide specific food sources for young fish such as terrestrial insects that get washed into the river. Linking environmental flows to natural rainfall events is expected to assist with fish dispersal.

Vegetation: Support recruitment and growth of wetland plant communities in the Great Cumbung Swamp, such as the Common Reed Beds. Flows are also expected to refresh aquatic plants, such as red milfoil and water primrose in Booberoi Creek and help to recharge riparian water tables and inundate root zones for riparian trees (e.g. river red gum and river cooba).

Waterbirds: Inundate important foraging and refuge habitat for waterbird populations after successful breeding during the 2016 flooding. The timing of inundation will provide food for migratory shorebirds to accumulate the required energy reserves to travel the long distances back to their breeding grounds.

Frogs: Provide refuge habitat for flow-dependant frog species, particularly those that live in riparian and creek habitat. Support summer breeding species in the lower catchment.

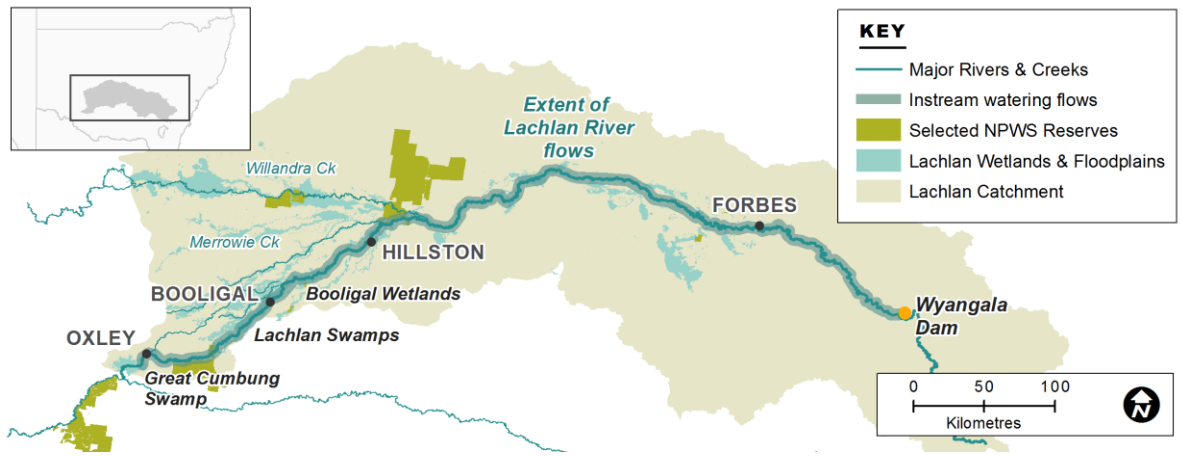

Figure 1 Map of the event area.

Sources of water: All water for the environment used in this event will be debited against the Wyangala Environmental Water Allowance (WEWA) as the Brewster EWA is not currently available. The Water Sharing Plan (WSP) for the Lachlan regulated river water source 2016 provides for 10,000 megalitres each to be credited to the WEWA & BEWA annually, depending on the total volume of water in the water allocation accounts of regulated river (general security) access licences (needs to be greater than 50% of the total volume of regulated river (general security) access licence share components) and water being physically available in storage.

There is currently no expectation that any EWA will be available next year unless there are significant inflows and available water determinations (AWDs).

Water delivery details: Rainfall in the upper Lachlan Catchment from 13 to 15 December 2018 was sufficient to generate inflows which led to water discharging into the major tributaries which flow into Wyangala Dam. The Abercrombie River and Lachlan River at Reid's Flat above the dam; and Hovell's Creek and Belubula River below.

On 14 December WaterNSW was requested to quarantine the inflows below Wyangala Dam for the environment. It was anticipated that the peak flow at Forbes would be approximately 2,500 megalitres (ML) per day including approximately 500–700 ML/day of operational flows.

Below the dam tributary flows are being supplemented with Wyangala Dam releases from Monday 17 December 2018 to replicate a portion of the natural inflows equivalent to those above the dam.

Flows will remain within channel until reaching the Great Cumbung Swamp in early to mid-February 2019. Flows are expected to inundate low-lying wetlands adjacent to main river channel.

Delivery dates: Tributary flows downstream of Wyangala began to register on Lachlan River gauges by Friday 14 December 2018 and peaked at Forbes on Monday 17 December 2018. Wyangala Dam releases began 17 December (~500 ML/day) and will continue for 6 days. The entire flow event is expected at Cotton's Weir (Forbes) from 17 December to around the 27–29 December 2018.

Expected total volumes of EWA used: Accounting can only be reconciled post-event because of the tributary inflow component. However, it is expected that up to 8, 000 ML of the 10, 000 ML Wyangala EWA will be used in total for this event.

Monitoring for this Event:

- Fish species movement in response to the flow will be monitored in Booberoi Creek and the Lachlan River in January 2019. Further fish monitoring will take place early 2019.
- Continuous dissolved oxygen data will be recorded at sites between Forbes and Corrong, including Booberoi Creek. The results will provide an indication of the contribution this event makes to stream metabolic processes (i.e. the provision of energy to the food chain).
- WaterNSW routinely monitor water quality in the mid to lower Lachlan, including within the Lake Brewster system.

Update on monitoring for previous 'Prevent water levels dropping rapidly during nesting period' event: Preliminary field and laboratory observations from the Commonwealth Environmental Water Office (CEWO) Long Term Intervention Monitoring (LTIM) Project team indicate that small bodied native fish, such as Australian smelt and flat-headed gudgeon, were the most numerous species recorded between October–December 2018 during larval fish sampling trips. Larval Murray cod were captured in October and November in the lower-Lachlan reach (Willanthery and Hillston), and in November to early December in the mid-Lachlan reach (below Forbes to Willanthery). Formal identification, measurement and relative abundance estimates will be undertaken in January and February 2019 and made available on the Lachlan LTIM website with all other quarterly progress reports and annual monitoring and evaluation reports [http://www.environment.gov.au/water/cewo/catchment/lachlan/monitoring].

Further Information:

Links:http://www.environment.nsw.gov.au/topics/water/water-for-the-environment/about-water-for-the-environment

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