

Macquarie-Cudgong Environmental Flows Reference Group

Meeting Summary, 5 & 6 May 2021, Lazy River Estate Dubbo

Attendees: Ian Rogan (Chair), Sri Sritharan, Jo Ocock, Robert McLellan, Garry Hall, Mel Gray (Day 2), Nerida Sloane, Peter Thomas (MDBA observer), Paul Keyte (Exec officer, notes), Tim Hosking (SWARCO), Kieran Fitzpatrick

Apologies: Debbie Love, Julie Lovell, Rod Price, Bev Smiles, Richard Woodlock, Bill Johnson, David Duncan, Rob Smith.

1. KEY WATERING OUTCOMES 2020-2021

- Approximately 148GL of environmental water was delivered this water year to date, from all accounts (Translucent and Active EWA, General Security HEW, Supplementary HEW) along with 200GL gauged flows from other water sources at Marebone including tributary flows, 500ML/d below translucent EWA triggers (total 34GL) and regulated base flows.
- Annual total flow volumes compared to those since 1980: non-managed total annual flow at Marebone Weir represents close to a 'median' (50th percentile) year. The use of the environmental water pushed the total volume close to the 'average' total annual volume at Marebone since 1980.
- Having opened up the Translucent EWA trigger window at the start of water year, the triggering of Translucent EWA has been greater than anticipated (50GL).
- Inundation data indicates extended duration of the inner 9,000ha of the Macquarie Marshes ('Blue Zone') and some shorter inundation of most of the 'Pink zone' (inner 19,000ha).
- End of system flows from the Macquarie-Castlereagh measured 38GL at Miltara, and 105GL at the Barwon River confluence including Castlereagh and Marthaguy Creek flows.
- Fish monitoring, funded by CEWO, confirmed native fish breeding (primarily Murray cod) in October 2020. This was focussed more towards the start of October. Some young Golden Perch were found – these are being tested for their geographic origin.
- A small translucent release was made into the Cudgong River in accordance with the WSP.

2. 2020-21 WATERING STRATEGY DEVELOPMENT

Proposed 3-year Objectives: 2020-2023

- **Continued drought recovery** of flow-based ecosystems associated with the Mid and Lower Macquarie River and the Macquarie Marshes wetland system, specifically:
 - Growth and seed-set in the Macquarie Marshes inner 9,000ha 'Blue zone'. This includes areas of reedbeds, water couch, mixed marsh and inner River Red gum forests. These assets provide key habitat for waterbirds, flow-dependent frogs, other fauna like Red-bellied black snakes and wetland-reliant non-waterbirds.
 - Recruiting to Macquarie River native fish populations – 'flow generalists' and 'in-stream specialist' species like Murray cod, catfish and small-bodied native species.
- **Support viable colonial waterbird breeding events** should they occur
- Take opportunities to **connect the Mid-Macquarie River to the Barwon River** where possible to promote the movement of flow-specialist native fish into our catchment (e.g. Golden perch)

Proposed Objectives for Year 2 of 3 (2021-2022)

- Improve 'event-readiness' of the Marshes system for colonial bird breeding events, to maximise outcomes should conditions continue to improve, and if widespread colonial breeding was initiated.
 - Maintain the current extent of water couch and mixed marsh (key foraging areas) in 'good' condition
 - Support and improve numbers of small-bodied native fish (a key food source)
 - Support vegetation condition and structure at colony sites able to be targeted with environmental water holdings (e.g. Monkeygar reedbed, Bora RRG forests) so nesting substrate is present
- Support flow events that assist the recruitment of native fish into the local population. This will target flow generalists and in-channel specialist species, and includes:
 - Support an in-channel native fish spawning event in Spring 2021 and
 - Assist those native fish spawned in Spring 2020 to survive to adulthood.

3. PLAN FOR 'YEAR 2' – 2021-2022 WATER YEAR

It is proposed to **use up to 150GL from all water sources in 2021-2022** to achieve 'Year 2' objectives, with a **minimum carryover of approximately 50GL to year 3 (2022-2023)**.

It was recommended the planned event should have three main components (see graph below):

- 1) An **August-Sept pulse** to Marebone, to secure inundation extent in the Southern and Northern Macquarie Marshes in cooler (more efficient) months
- 2) **Relatively stable flow during October** for native fish spawning in the Mid-Macquarie River – 'topping up' daily flows to meet the flow target of **800-1000ML/d at Dubbo**.
- 3) **A pulse and long recession in November 2021** to support the newly hatched fish larvae and extend inundation duration within the Macquarie Marshes 'Blue Zone' for vegetation seed-set and recruitment of flow-dependent frog species.

Under this proposal, flow connectivity to the Barwon River (up to approx. 150-200ML/d) would likely be achieved in Sept and October 2021 via the Macquarie Marshes and Lower Macquarie River.

4. MONITORING IN 2021-2022

- A list of proposed monitoring actions was presented by DPIE EES.
- DPI-F working to secure monitoring relating to spawning and recruitment of fish.

5. COMMUNICATIONS IN 2021-2022

- A range of media and communication activities will be undertaken by EES, CEWO.
- Engagement for EWAG recruitment will commence soon. EES ready and able to present to any interested groups if that would potentially assist in attracting EWAG applications.

6. CUDGEGONG EWA

- When the new WSP is enacted, a new 11.4GL General Security EWA to come under EES responsibility with an initial 'payback' volume then ability to accrue balance with new AWDs
- Will need to set new EWAG arrangements in place to support this new decision-making role.

7. UPDATE ON VARIOUS WATER-RELATED PROJECTS

- Macquarie Re-regulating Weir proposal – work is ongoing by WaterNSW
- Northern Basin Toolkit projects – Oxley break No3 bed raising structure, investigation into works on Mumblebone breaks – funding announced, project admin underway
- Southern MMNR ‘Breakaway’ structures – National Parks firming up plans here
- Burrendong Thermal curtain – offline, WaterNSW considering options.

NEXT MEETING: 2-day event including one day field tour. 7 + 8 September – Warren or Marshes

