

## Environmental Watering Plan for the Lachlan Valley 2010/11

### Environmental water releases in 2009/10

No water accrued to any environmental water accounts during 2009/10. Due to severe water shortage the Lachlan Water Sharing Plan remained suspended for whole year. Therefore no environmental water was released from Wyangala Dam. There were also no effective opportunities for use of the small volumes of available adaptive environmental water.

### Current condition of water dependent assets

Asset <sup>1</sup>	Last watering <sup>2</sup>	Condition
Burrawang West Lagoon	2/2010 (flood flows down Yarrabandai and Goobang creeks)	Good
Yarnel Lagoon	2/2010 (managed flows)	Good
Lake Brewster Inlet wetland <sup>3</sup>	N/A	N/A
Lake Brewster outlet wetland <sup>4</sup>	N/A	N/A
Booligal Wetland	3/2010 (high flows at Torriganny weir led to flows in Merrimajeel Ck as far as Ibis Tank below the Block Bank. To a lesser extent flows also travelled down Muggabah Ck)	Moderate - good
Murrumbidgee Swamp	3/2010 (flows into central parts of swamp and flood runners from localised storm)	Critical
Lake Ita <sup>6</sup>	1990	Moderate
Great Cumbung Swamp	2005 <sup>5</sup>	Poor - Critical
Other colonial waterbird breeding sites on distributary creeks (eg. Mutherumbung; Cuba Dam)	2005	Moderate
Eagle Nest Swamp on the property "Lilydale", near Booligal	3/2010 (high flows in Torriganny Ck and Lachlan R led to at least partial inundation of all wetlands on Lilydale apart from Dog Kennel Swamp)	Moderate

<sup>1</sup> Identified in Lachlan Water Sharing Plan, RiverBank Water Use Plan or Lake Brewster Water Use Plan

<sup>2</sup> By any means – natural or managed

<sup>3</sup> Constructed as part of Lake Brewster Water Efficiency Project, awaiting initial wetting to initiate vegetation response

<sup>4</sup> Constructed as part of Lake Brewster Water Efficiency Project, awaiting initial wetting to initiate vegetation response

<sup>5</sup> Watering beyond that maintained by standard river operations

<sup>6</sup> Water cannot be delivered with current infrastructure

## Volumes of environmental water available

Account	Maximum limit (ML)	Available (ML) 1/7/10
Translucent dam	350,000	Rules-based
ECA	20,000	0
WQA	20,000	0
RiverBank AEWL <sup>1</sup>	25,575 (1,000 share units of High Security expected to be registered by September 2010 and 24,575 share units of General Security registered at July 2010)	100 ML of HS and 0 ML of GS. <i>(The 1 July 2010 AWD provides zero General Security allocation and suspends access to all General Security carry-over until conditions improve. The AWD provides for an allocation of 0.1 ML per share unit of High Security).</i>
Commonwealth Holdings	82,726 (733 share units of High Security and 81,993 share units of General Security registered at July 2010)	73 ML of HS and 0 ML of GS. <i>(The 1 July 2010 AWD provides zero General Security allocation and suspends access to all General Security carry-over until conditions improve. The AWD provides for an allocation of 0.1 ML per share unit of High Security)</i>
Lake Brewster AEWL <sup>2</sup>	12,000 (general security)	0

<sup>1</sup> Includes Parks and Wildlife Group licences

<sup>2</sup> 12,000 shares of AEW licence with general security status is established

## Likely environmental watering scenarios

- Wyangala Dam is at 9.2% capacity (112,000 ML) as at 29/07/10.
- Translucent dam releases occur from 15 May to 15 November when inflows to Wyangala Dam have exceeded 250,000 ML since 1 January, and subject to inflow triggers.
- As allocation plus carryover is less than 50% at 1 July ECA will not be available unless allocation plus carryover exceeds 75%.
- Translucent dam releases, ECA and WQA are not expected to become available while the Water Sharing Plan (WSP) is suspended. For WSP flow rules to be turned back on, it is likely that inflows to Wyangala Dam of more than 400,000 ML (over 38%) are required. Above average rainfall for 2-3 months is required for this scale of inflows.
- While the WSP remains suspended, increases to GS allocations may be made if Wyangala Dam exceeds about 24%, as occurred in 2005/06. If this occurs, there will be further allocations to AEW licences.
- Average rainfall conditions are expected for Lachlan Catchment during July - September.
- While the WSP remains suspended, the Lachlan Riverine Working Group (LRWG), State Water and Lachlan Customer Service Committee will provide advice to the Department of Environment, Climate Change and Water (DECCW) on the management of tributary flows for the environment. DECCW is a member of both the LCSC and the LRWG.

- The current flows in the system below Wyangala (at 28/7/10) are expected to be sufficient to fill Brewster Weir, deliver a replenishment flow along Booberoi Creek and deliver up to an additional 6,000ML into Lake Cargelligo. Beyond these, the accepted options for August - October period are:
  - The first 500 ML of tributary flows to be used to top up weir pools.
  - The next 1,500 ML received from tributary flows to be directed into the Lake Brewster inflow wetland to facilitate the establishment of wetland plants.
  - Tributary flows between 2,000 – 19,000ML to be stored in Lake Cargelligo and then used for planned delivery of downstream flows
  - Tributary flows between 20,000 – 26,000ML to be used for stock and domestic flows to the Merrimajeel/Muggabah creeks. If additional water is available the option to continue flows to fill Murrumbidgee Swamp can be considered.
  - Tributary flows between 26,000 - 34,000 ML, to be used for stock and domestic flows to Merrowie Creek.
  - Tributary flows between 34,000 – 37,000ML to be used for stock and domestic flows to Willandra Ck to the homestead.
  - Additional tributary flows could be used for a full stock and domestic delivery to Willandra Ck, for environmental purposes in the Lachlan River, and for diversion into Lake Brewster.
  - The order of priority of the above triggers may change depending on the total volume, flow rate, location of the flow and timing. For example, tributary flows in excess of a flow rate of 600 - 1000 ML/D at Lake Cargelligo Weir can not be diverted into Lake Cargelligo and may be used for other purposes including flows to the environment.
  
- In summary:
  - High probability that Critical Water Planning conditions will remain in place
  - Low probability of translucent flows from Wyangala Dam under WSP for period to October 2010
  - Low probability of any ECA water
  - Low probability of GS allocation.
  - High security access licences have available allocation of 0.1 ML per unit share. Therefore 173 ML of High Security water is available under adaptive environmental water licences.
  - Low-moderate probability of tributary flows up to 100,000 ML
  - Any further volumes of available adaptive environmental water are likely to be less than 1,000 ML.

## Objectives for environmental water use for 2010/11

### A. Under dry conditions

173 ML of environmental water is available for discretionary use. Given the limited volume available it is likely to be used for objectives 2 or 3, as listed below in scenario B.

### B. Under average to slightly wet conditions

1. To fill and retain water in Murrumbidgee Swamp for at least 6 months.

*Reason: condition currently critical and declining. Flooding is essential to retain some of the river red gums alive and provide best chance of preventing loss of ecological character. Requires delivery of a replenishment flow (takes approximately 50 days) in*

*Merrimajeel Creek and at least an additional 1,000 ML of environmental water. Liaise with Merrimajeel Muggabah Creeks Trust.*

2. To retain the reintroduced population of the threatened purple-spotted gudgeon in Burrawang West Lagoon

*Reason: DPI Fisheries reintroduced purple-spotted gudgeons to this site in 2006, with the aim that recruitment will spread the species further in the Lachlan River. To ensure permanent habitat is maintained an approximate maximum of 150-200 ML of adaptive environmental water is likely to be required if there are no flows in Goobang or Yarrabandai Creeks and due to restricted water allocations.*

3. To maintain 20-30 hectares of wetland habitat by inundating Yarnel Lagoon during spring – early summer. Flooding is to stimulate frog breeding opportunities and to provide an opportunity for brolga breeding.

*Reason: A benchmarking ecological study highlighted the potential for this wetland to contribute to frog diversity. Follow-up surveys for frogs in 2008 and 2010 have confirmed the presence of a diverse population of frogs. A resident pair of brolgas, rare in this region of NSW and threatened at the State level, has bred previously when conditions were suitable. These conditions can now only be created by active management of water. Depending on the levels of other managed flows down the Wallaroi Ck between 100 - 300 ML of adaptive environmental water are required to flood this wetland for 4-6 months.*

### **C. Under wet to very wet conditions**

Above plus:

4. To inundate all the common reed-beds and significant areas of fringing river red gum woodland in the Great Cumbung Swamp.

*Reason: The terminal Great Cumbung Swamp requires a minimum of 25,000 ML before any measurable ecological benefit occurs. Volumes in the order of 50,000 ML are required to inundate some river red gum woodland. River red gums are currently severely stressed or dead.*

5. To maintain and allow to complete any colonial waterbird breeding event initiated by replenishment or environmental flows.

*Reason: Ibis (1,000s) and spoonbills (100s) bred in wetlands of Meroo Creek during 2005/06 in response to delivery of a replenishment flow. Such unexpected breeding responses may become more frequent. The ECA was established under the WSP for this purpose. However, there will be no ECA water available until Wyangala nears full capacity.*

### **D. Other opportunities**

Negotiations are underway with other landholders for supply of adaptive environmental water to various wetlands in the Lower Lachlan. These are well advanced for lagoons on Lilydale near Booligal. If the arrangements are finalised and small volumes of water (<200 ML) become available, these lagoons will be supplied with water to deliver wetland habitat maintenance flows and to stimulate waterbird breeding opportunities.

*Reason: these small wetlands are strategically located such that they are readily watered, require small volumes and will act to provide seed sources (plants and animals) for wetlands further downstream on the main Lachlan River, Merrimajeel and Muggabah Creeks.*

## Risks and mitigating strategies

Risk	Rating	Response
Unpredictable weather – turns drier than expected	High (likely & major)	Review asset condition and future priorities for watering. Flows in mid Lachlan Creeks may be stopped and watering to Yarnel Lagoon and Burrawang West may not be possible
Unpredictable weather – turns wetter than expected	Medium (unlikely & major)	Additional wetting options possible – continually assess volumes available
Flow management is uncoordinated	Medium (possible & moderate)	LRWG has been established and regular communication is maintained with State Water and CSC Develop Implementation Manual for the delivery and accounting of ECA and WQA
Water use and works approvals not linked to AEW licences	High (possible & major)	Confirm status with DECCW licensing; seek discretionary one-off approval if necessary
Estimated flow target volumes are substantially wrong	Medium (unlikely & moderate)	Monitor flow delivery daily and seek adjustments; revise targets for future attempts
Unforeseen physical impediments to flow delivery	Medium (rare & major)	Early communication with creek Trusts and State Water; alert licencing if illegal obstructions identified
Water use plan not amended in time to take advantage of other opportunities	Medium (possible & moderate)	Seek urgent approval from appropriate agency
Insufficient water available to complete colonial waterbird breeding, if initiated	High (unlikely & severe)	Reserve 2,000 ML in storage; purchase GS allocation

## Monitoring, reporting and revising

**Monitoring** as per RiverBank monitoring plan for adaptive environmental water, and IMEF program for key wetland sites.

### Reporting to

- Director, Water for the Environment, DECCW: monthly updates on conditions (climate, available environmental water) and weekly updates during flow delivery events.
- LRWG will be provided with monthly updates on conditions and weekly updates during flow delivery events.
- Lachlan CMA, via the LRWG, will receive monthly updates on conditions and weekly updates during flow delivery events.
- Lachlan Customer Services Committee – regular updates at meetings.
- Broader community – updates in E-water Newsletter.

<http://www.environment.nsw.gov.au/environmentalwater/newsletters.htm>

This plan is to be **revised** when conditions dictate. Triggers for revision will be sustained catchment or localised rainfall that produces significant flows into storages or in tributaries. If Wyangala remains below 20%, no revisions are expected. Above 20%, monthly revisions may occur. Good communication with State Water and local community representatives will help clarify the timing and scale of revision.

Primary responsibility for identifying and reporting opportunities for revisions to this plan rests with DECCW Senior Wetlands and Rivers Conservation Officer, South Branch.

---

Prepared by: Paul Packard

Position: Senior Wetlands and Rivers Conservation Officer, South Branch, DECCW

Consultation: LRWG

Date:

Approved by: **Derek Rutherford**

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Position: **Director, Water for the Environment**

**Department of Environment, Climate Change and Water**