



*House Standing Committee on  
Regional Australia*

**Inquiry into the impact of  
the Murray-Darling Basin  
Plan in Regional Australia**

**EAA Submission**

EASTERN AUSTRALIA AGRICULTURE

**Inquiry Submission**

December 2010

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## 1. Executive Summary

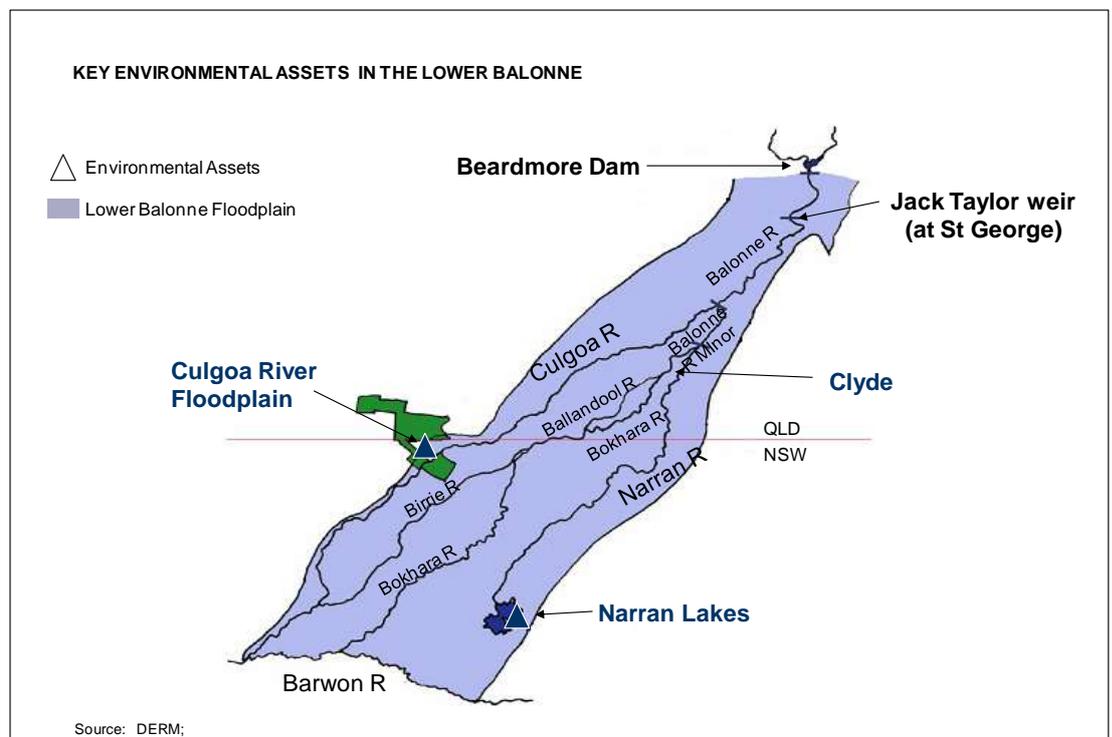
- This summary provides an overview of the submission by Eastern Australia Agriculture (EAA) to the House Standing Committee of Regional Australia on the *“Inquiry into the impact of the Murray-Darling Basin Plan in Regional Australia”*
- EAA owns water entitlements at two properties in the lower Balonne area of the Condamine-Balonne region
  - The Kia-Ora property is the larger of the two and is situated approximately 7km south of St. George, Queensland, along the Balonne River
  - The Clyde property is located 10km south-west of Dirranbandi, Queensland, at the intersection of the Balonne and Narran Rivers. Clyde has two Narran River harvesting licences and an overland flow licence.
  - Together in the 2010/2011 season these properties are producing around 11,000 Ha of cotton. In 2008, EAA sold 10,433 ML of temporary water from its Clyde property to the Murray-Darling Basin Commission (MDBC), which was let go to deliver water to Narran lakes to facilitate a breeding event already under way.
- EAA has to date made multiple applications to offer entitlements under the *Restoring the Balance to the Murray-Darling Basin* program, involving unsupplemented water entitlements at Clyde
- This document outlines our submission to the Inquiry
  - Narran Lakes and the Culgoa floodplain are the very clear and distinct environmental assets in the Condamine Balonne. Narran Lakes is highest priority.
  - Water licences on the rivers directly feeding the environmental assets are far more effective at delivering the water to those assets than licences further upstream or on other tributaries
  - EAA’s Narran River harvesting licences are in a prime position to influence flows at Narran Lakes
  - Use of these licences can solve the environmental problem with least effect on the local economy
  - Consideration should also be given to use of the storages already on Clyde to achieve a more effective result

## 2. Water entitlements on the rivers feeding environmental assets are most effective

### 2.A. Narran Lakes and the Culgoa floodplain are the very clear and distinct environmental assets in the Condamine Balonne

Narran Lakes and Culgoa River Floodplain are the highest priority environmental assets of the Condamine Balonne (Figure 1). As a Ramsar site, the Narran Lakes is highest priority.

Figure 1

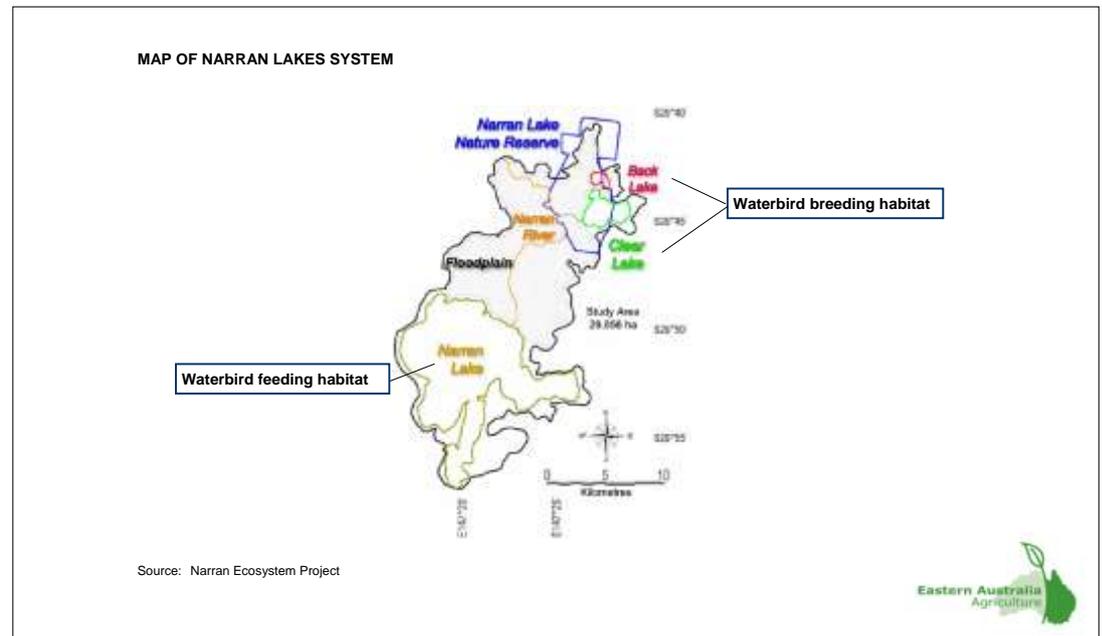


The Narran Lakes Nature Reserve is situated approximately 75 kms north-west of Walgett and the wetlands cover an area of ~30,000 ha. The wetlands are a series of interconnecting terminal lakes of the Narran River.

Narran Lakes is a significant site as its wetlands remain in a relatively natural condition, and are representative of the large terminal drainage wetlands which occur in semi-arid NSW. Narran Lakes is a major breeding site for many waterbird, fish and flora, including a number of internationally important migratory bird species and threatened native flora and bird species. Back and Clear lakes form the breeding habitat of many native waterbirds, while Narran Lakes plays the role of a feeding habitat (Figure 2).

The greatest concern to Narran Lakes is the impact of continued and increasing levels of water extraction from the Condamine-Balonne river system. Extraction capacity now seems to be able to impact on the full range of flows, including completely utilising the small flows that occur relatively frequently. The small flows are critical for maintaining waterbird breeding habitat, particularly the Lignum and River Red Gum communities.

**Figure 2**



**2.B. The MDBA has recently extended the Culgoa floodplain asset to include all the Lower Balonne – a very broad brush approach**

More recently, the MDBA has extended out from the Culgoa floodplain to categorise the environmental asset as the Lower Balonne floodplain. This lacks focus – effectively classifying the whole of the agricultural area below St George down to the Barwon river – as an environmental asset (Figure 3).

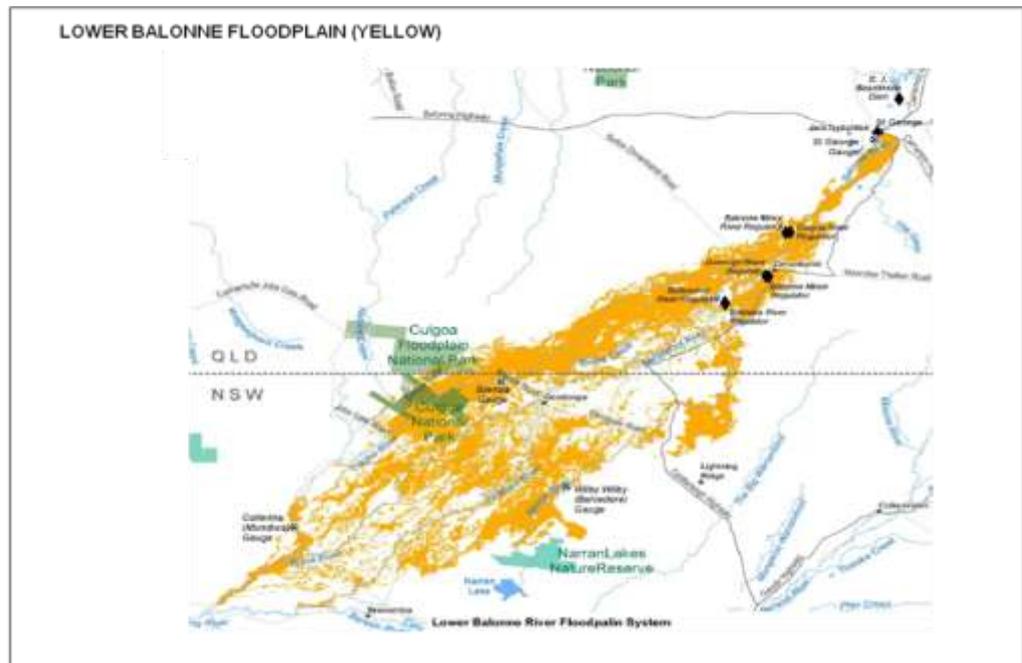
It must be questioned whether such a broad brush categorisation achieves the appropriate trade off between providing water for key environmental assets and retaining water for the local economy

1. The database of Australia’s Nationally Important Wetlands lists only 2 wetlands in the area
  - a. The Culgoa River Floodplain (shown in Figure 1)
  - b. Balonne River Floodplain. This is defined as “an area of wetlands in the order of several hundred hectares spread out over a larger floodplain. It

includes Lake Munya, Parachute Lagoon, Birch Lagoon, Mooramanna Lake, and the swamp at Brookdale". Both Lake Munya and Parachute Lagoon are on EAA's property just south of St George

2. A large amount of the scientific work to classify the environmental importance of the area has been done at the Culgoa River Floodplain – not the more extended area
3. A large amount of the extended floodplain area is agricultural land used for grazing.

Figure 3



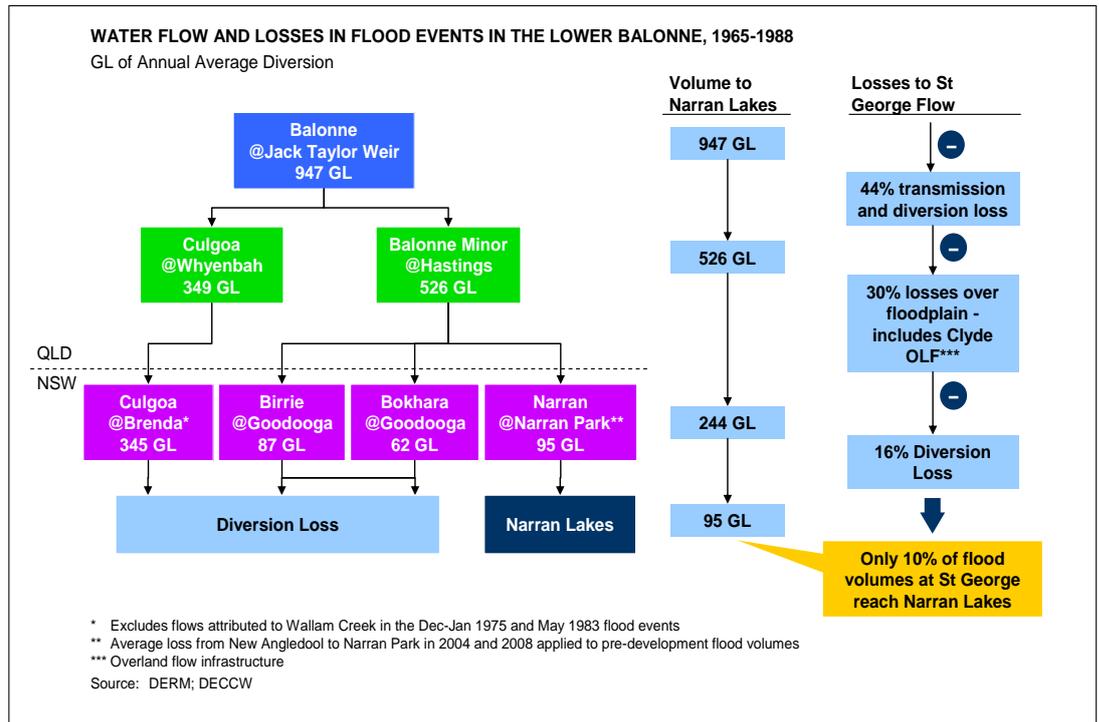
### 2.C. Water licences on the rivers directly feeding the environmental assets are far more effective at delivering water to those assets than licences further upstream or on other distributaries

Historical flow volumes at gauging stations throughout the Lower Balonne have been analysed to understand river flows and losses during flood events. A total of 11 flood events were identified in the pre-development period of 1965-1988, at approximately 1 flood every 2 years.

Flow data at downstream gauging stations indicate that only 46% of flood volumes passing St George reached high-value environmental assets – namely the Narran Lakes and the Culgoa River Floodplain.

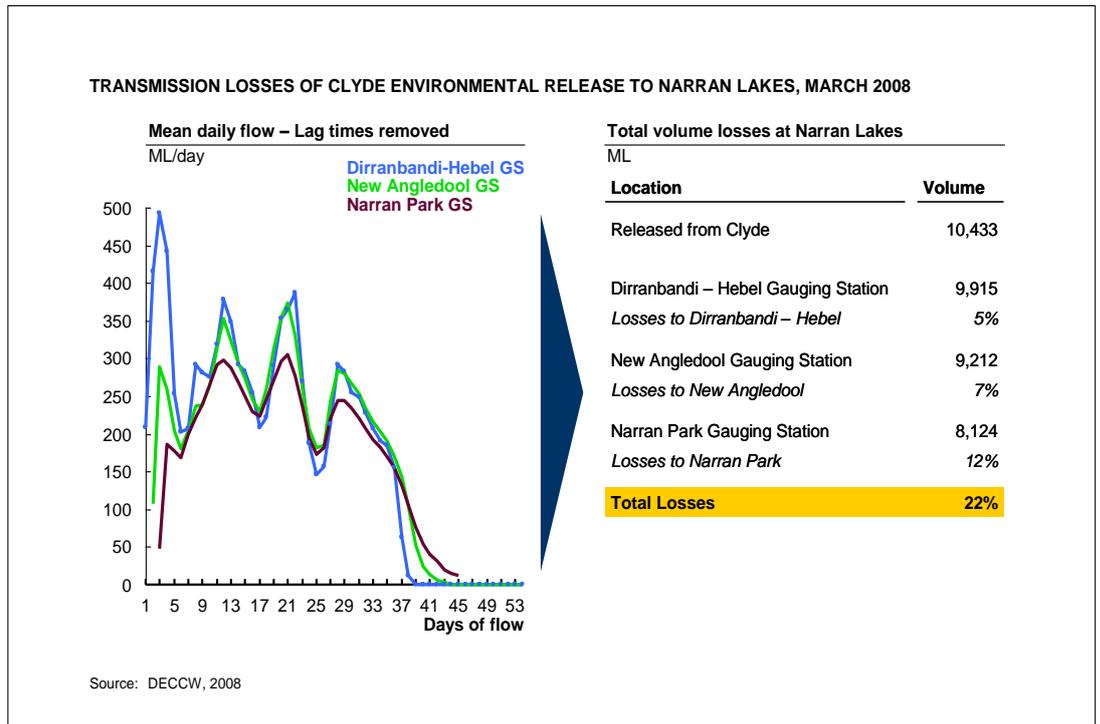
Of these assets, Narran Lakes, of higher environmental significance, receives on average only 10% of flood volumes at St George (Figure 4).

Figure 4



In contrast, environmental flows released from Clyde experience much higher water efficiency. In March 2008, the Murray Darling Basin Commission purchased temporary water from Clyde to facilitate waterbird breeding at Narran Lakes. EAA released 10,433 ML from its Clyde storages, of which 8,124 ML reached Narran Lakes (Figure 5). Transmission losses from Clyde to Narran Lakes were comparatively minimal, with overall 78% of flows reaching Narran Lakes. The majority of water lost was in the first couple of days of release, when the initially released water was “re-filling” dried out areas of the downstream river system. Following that, over 90% of released water got to the environmental asset.

Figure 5



### 3. EAA has key licences to solve for the Narran Lakes leaving as much water as possible to be utilised for the regional economy

#### 3.A. EAA’s Narran River harvesting licences in prime position to influence flows at Narran Lakes

The Clyde property’s river licences entitle harvest of water from the Narran River. There are four other properties with river harvesting licences on the Queensland section of the Narran River. Minimal water extraction takes place from the Narran River within NSW, as there has been an embargo on additional extraction since 1984. Clyde’s licences have a nominal volume (average annual water harvesting capacity) of 11,745 ML and represent around 45% of the entitlements on the Narran River (Figure 6)

Figure 6

Narran River licence holders		
ML		
Licence holder	Nominal volume	% of total
HC & RL Crothers	2,540	9.8%
<b>EAA</b>	<b>11,745</b>	<b>45.4%</b>
McIntyre Cotton	1,550	6.0%
DT, PE, DM & LK Crothers	4,185	16.2%
Pechelba	5,865	22.7%
<b>Total</b>	<b>25,885</b>	

#### 3.B. Use of these licences can solve the environmental problem with least effect on the local economy

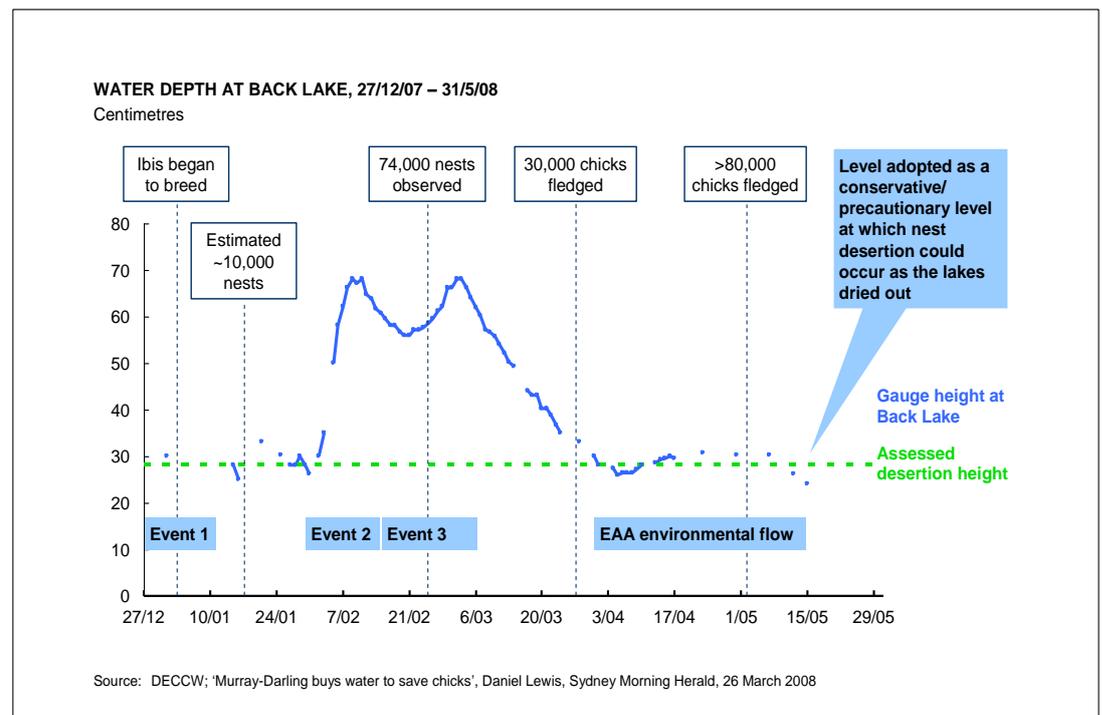
As described above, EAA’s licenses on the Narran River, are far more effective at delivering water to the key environmental asset compared to upstream licences at St George. EAA believes that use of the licences close to the key environmental assets, can solve the environmental problem, taking the least amount of existing water entitlements from productive use in the local economy. The guide to the Murray Darling Basin plan states that over 200 GL (of annual average harvesting) need to be returned to the river in the Condamine Balonne. EAA believes the environmental result can be achieved with less than half of that.

### 3.C. Consideration should be given to use of the storages already on Clyde to achieve a more effective result

There has been significant investment at Clyde to develop on farm storages used to hold the water harvested from the river licences. EAA believes that use of these storages can achieve a more effective result in delivery of water to the environmental assets – *by permitting delivery of water to the environmental asset at the most effective time.*

In January 2008, the flood event filled Narran Lake’s breeding environment to over 28cm in depth (Figure 7). The waterbird population proceeded to nest, with an estimated 10,000 nests counted in mid-January. As such, this level was deemed to be the conservative/precautionary level at which nest desertion could occur. Two subsequent major events continued to further flood the breeding environment, leading to a total of 74,000 nests observed at the end of February.

Figure 7



By late March however, water levels had fallen back to the precautionary level, with only 30,000 chicks fledged. In March, EAA’s timely water release maintained water levels at Narran Lakes at the precautionary level for a further six weeks, by which time an additional 50,000 chicks had fledged. The significant impact of our water was widely acknowledged by the environmental community.

By maintaining water levels at or above the precautionary level, the 8,154ML which reached the Narran Lakes was able to extend the breeding season by 38 days, implying an average rate of evaporation/seepage of 215 ML/day (Figure 8).

If this water had not been captured and allowed to flow naturally, it would have arrived at the same time as Events 2 and 3, which experienced a much higher average evaporation rate of 497 ML/day, due to the increased surface area at higher volumes of water in Narran Lakes. At this higher rate of evaporation, EAA's environmental flow would have sustained the breeding environment for only 16 days, suggesting that in this instance, the ability to time the arrival of environmental flows to coincide with low water levels (and consequently lower evaporation losses) effectively doubled its improvement to breeding season duration.

Figure 8

**COMPARISON OF DAILY EVAPORATION LOSSES AT NARRAN LAKES – 2008 FLOOD EVENT**

	Area Covered			Total (ha)	Daily evaporation loss** (ML/day)	Days env. flow maintains critical level at Back Lake***
	Northern Lake*	Narran Lake	Narran Floodplains			
Area when full (ha)	1,950	12,290	13,570			
<b>Scenario</b>						
High flood event	100%	100%	100%	27,810	2,225	4
Medium flood event	100%	100%	0%	14,240	1,139	7
Low flood event	50%	50%	0%	7,120	570	14
5m deep storage				200	16	510
<b>2008 Events 2 and 3</b>					<b>497</b>	<b>16</b>
<b>2008 EAA environmental flow</b>					<b>215</b>	<b>38</b>

2008 EAA env. flow was twice as effective when captured and released at lower water levels – effect would be magnified in higher flood events

\* Includes Back Lake, Clear Lake and Long Arm  
 \*\* 8mm/day Summer evaporation rate applied to surface area in High, Medium, Low flood events and 5m deep storage scenarios  
 \*\*\* Number of days EAA environmental flow (8,154ML @Narran Park GS) would maintain water height at critical level for breeding (>0.3m)  
 Source: DECCW, 2008; Narran Ecosystem Project