



**HOUSE OF REPRESENTATIVES  
STANDING COMMITTEE ON REGIONAL  
AUSTRALIA  
INQUIRY INTO THE IMPACT OF THE  
MURRAY-DARLING BASIN PLAN IN  
REGIONAL AUSTRALIA**

**A submission by the Darling River Action Group Incorporated  
(DRAG)  
December 2010**

including Appendices:

1. Submission to Darling River Water Savings Project
2. Submission to MDBA

Chairman: Mark Hutton:

Secretary: Brian (Barney) Stevens:

## **Direct and Indirect Impact of the Proposed Basin Plan on Regional Communities**

Any additional flow in the Darling River will have a marked **positive** effect on the City of Broken Hill and the towns of Wilcannia and Menindee. The Guide to the Basin Plan proposes an increase in the end of system flow for the Barwon (upper) Darling from the present miserable 53% of natural, up to 60-62% of natural flow. It also proposes an increase from the current disastrous 43% of natural, to 53-55% of natural flow for the lower Darling end of flow. These figures are for their 3000-4000 gegalitres scenarios. The figure for their 7600 gegalitres scenario are 80% of natural flow.

Increased flow in the Darling would have the following positive effects on Broken Hill, Wilcannia and Menindee:

1. Greater security of water supply for town use, for mining and for local irrigators.
2. Better water quality – this would benefit not only the town water supplies, but also irrigators, reducing the salt levels being applied to the plants.
3. Tourism. The Darling River and Menindee Lakes are major tourist destinations, but only when they contain water.
4. Attracting and retaining employees, health professionals etc. Many other mining towns are fly in-fly out, but Broken Hill has a long history of workers living locally. This owes quite a lot to the recreational opportunities offered by the river and lakes. Without those features the area might be just another dustbowl location like so many in Western Australia. Many Broken Hill people spent their youthful weekends and holidays at the lakes and the river.
5. Morale and the crime rate. It is very noticeable in the river towns that the crime rate diminishes when the river is up. People who otherwise may have little to do can fish, swim, boat etc. The Barkintji people who largely populate the river towns are the river people, and half of the flows have been taken away from them.

### **Options for Water-Saving Measures – Menindee Lakes**

Much has been said about Menindee Lakes, including a concerted campaign by irrigators to depict the lakes as water-wasters, just evaporation pans. There are two reasons for this campaign:

1. To deflect criticism from the real reason for poor flows in the Darling River, and that is the huge extractions for cotton irrigation on the Darling and its tributaries.
2. If water can be saved by making engineering changes to Menindee Lakes or changing management practices, upstream irrigators imagine that they can use more water, since less will be needed at Menindee. The Chairman of your committee, Mr Tony Windsor is

a classic example of this, with his proposal to enlarge the Chaffey Dam, based on water savings at Menindee. If the Chaffey Dam is enlarged it will mean less flow all the way down the Namoi River and the upper Darling, exacerbating the present disastrous state of the river. Any water savings from Menindee Lakes should go to environmental use downstream. Mr Windsor needs to declare a personal interest when this matter is discussed.

Remarkably Menindee Lakes is hardly mentioned in the Guide to the Basin Plan. We wonder how the MDBA could have a plan for the basin that excludes Menindee Lakes.

### **Menindee Proposals by DRAG**

The Darling River Action Group presented a submission to the inquiries into Menindee Lakes by Maunsell and Associates and by SKM (see Appendix 1). We recommended the following engineering changes to the lakes, changes that we considered environmentally acceptable and acceptable to the local communities.

- 1. Build a low-level regulator between Lakes Menindee and Cawndilla at Morton Boolka.
- 2. Investigate the need for a small regulator at the lower end of Cawndilla Creek (downstream from Morton Boolka), in order to fill Eurobilli Lake, for environmental and cultural purposes.
- 3. Replace the Menindee Lake outlet regulator with a regulator with a capacity of 10 Gigalitres per day.
- 4. Construct a short (~100m) channel between the Menindee Lake regulator and the Darling River, to carry the excess water that cannot be handled by Menindee Creek. The new channel would be at a high level, and would need a footbridge for access to a culturally sensitive area.
- 5. Deepen the part of Menindee Creek that is within Lake Menindee, in order to access the residual pool.
- 6. Build a low-level regulator between Lakes Wetherell and Tandure, with the aim of holding water for later release to the Anabranche.
- 7. DRAG opposed the construction of a channel from Lake Cawndilla through Kinchega National Park to the Darling River, and opposed the construction of a huge bank to bisect Lake Menindee.

Subsequently SKM reported on the options for Menindee Lakes, and found that the most useful options were very similar to those proposed by DRAG. One difference is that SKM proposed constructing straight channels to drain the residual pools in Lakes Menindee and Pamamaroo. They specifically ruled out the options of a channel through Kinchega National Park, and a bank to bisect Lake Menindee, on the grounds that these would have far greater cost than benefit.

### **The Kinchega Channel**

Despite the SKM findings that a channel through Kinchega National Park is not economically warranted, there are still advocates for that channel, including Mr Stan Dineen, a member of the Steering Committee, and Mr Peter Black formerly a Member of the NSW Legislative Assembly. By insisting on this channel, these advocates played a large part in preventing any progress on engineering changes to the lakes. While committees and consultants spent years considering this uneconomic socially, environmentally and politically unacceptable proposal, there was no work carried out on the no-brainers that needed to be done.

### **Alternatives to the Kinchega Channel**

Lake Cawndilla was dry between 2003 and mid 2010, so the Kinchega Channel would have been irrelevant. If a regulator is built between Lakes Menindee and Cawndilla, then Cawndilla will fill less frequently than it has in the past, i.e. less need for an outlet channel. Nevertheless there are still times when it will fill and it will be desirable to drain much of that water out at some time. As Lake menindee is being drained, the upper levels of Lake Cawndilla water flow back into Lake Menindee. With a larger outlet on Lake Menindee the rate of this back-flow would increase, reducing the storage time in Cawndilla and therefore reducing evaporation.

There is an outlet from Lake Cawndilla at the southern end. At present this feeds into Tandou and into the Anabranche. It connects with the man-made Penelco channel that takes water from the Darling River to Tandou. This channel could be re-graded to allow water to flow in either direction.

### **SKM Proposals for Menindee Lakes**

SKM presented a list of options for Menindee Lakes. Option 1 was to never fill Lakes Menindee and Cawndilla. This was considered by them to be environmentally unacceptable, and we believe will not be considered seriously. Right now the whole Menindee Lakes system is being used for flood mitigation, a purpose it served when it was in its natural state.

Option 2 of SKM was to only fill Lakes Menindee and Cawndilla occasionally, and to go ahead with about \$100 million worth of engineering works, fairly similar to those proposed by DRAG. Subsequently the Federal and NSW Governments signed an MoU whereby the NSW Government would receive \$300 million for works on rivers in NSW. Presumably this money came from the \$400 million that was set aside for works on Menindee Lakes. From this we interpret that Option 2 or some variation is now planned to occur. (There would be no point in doing the engineering works on Lakes Menindee and Cawndilla if Option 1 was adopted.). The proposed engineering works were estimated by SKM to save a average of 36 gigalitres per year.

### **Saving 200 Gigalitres per year from Menindee Lakes?????**

Various water authorities and irrigators groups have claimed that an average of 200 gigalitres per year can be saved from Menindee Lakes, by changing management regimes and by carrying out engineering works. We believe these figures are fantasies. Just look at the last 10 years.

#### “Normal” Years

Years 2000-2002 were fairly “normal” and some savings could have been made by not filling Lakes Menindee and Cawndilla, or by doing engineering works. However, if Lakes Menindee and Cawndilla had been by-passed by 2000 and 2001 flows, there would not have been any reserve of water for South Australia in drought year 2002.

If the outlet on Lake Menindee had been enlarged to 10 gigalitres per day, the 2003 disaster for Broken Hill’s water supply could have been averted and considerable water saved in the upper lakes.

#### Drought Years

From 2002 to early 2010 Lakes Menindee and Cawndilla were empty, so there were no savings to be made either by changing management practices or by re-engineering these two lakes. They were empty initially as the result of the “Cotton Drought” that resulted from the over-allocation of water upstream for flood irrigating cotton. Later the real drought was the cause.

#### Flood Years

In 2010 a moderate flow was shepherded past Lakes Menindee and Cawndilla, then later massive flows filled the lakes. The water taken from those massive flows was not needed downstream or upstream, the lakes acting as flood mitigators. The water remaining in Menindee Lakes after the floods cease, will stay there until it is needed downstream. Some of that water will evaporate. But water that is not needed is not a loss.

In conclusion, there is no water to save in Lakes Menindee and Cawndilla in drought years, and in flood years there is no reason to save the water. This means that potential savings will only occur in years of moderate flows. When calculating “average” evaporation savings, the great flood years need to be taken out of the equation. The great flood years are the ones that fill the lakes to the maximum surface area and result in the maximum evaporation. Without them the average drops dramatically. **The average savings would not be anything like 200 gigalitres per year.**

#### **The Aquifer Proposal**

At the present time there is a Memorandum of Understanding between the NSW Government and the Federal Government on proposed structural changes to the

Menindee Lakes System. These changes are supposed to make savings of 200 gegalitres by reducing evaporation. Which basically means decommissioning two of the largest lakes (Menindee Lake and or Cawndilla Lake). Most of these changes are dependent on finding an alternative water source for Broken Hill's Supply such as a suitable aquifer. Testing of an aquifer downstream from Menindee is almost complete. The cost of infrastructure and ongoing expenses to the end users is yet to be determined but we believe it will be extremely expensive. It is very likely that the water will have to be treated before it enters the aquifer, and will have to undergo reverse osmosis treatment when it comes out. That will cost tens of millions of dollars each year it is used. On top of that there is the problem of disposal of the reject salty brine that comes out of the reverse osmosis plant – increased salt concentrations being the last thing the Murray-Darling basin needs.

The reason given for this drive for an aquifer by the NSW and Federal Governments is to drought proof and give Broken Hill a reliable source of water. However, Broken Hill has had a reliable source of water since 1960 when a pipeline was constructed from the Darling River to the City and only since the massive expansion of cotton farms in the upper Darling and its tributaries has there been a problem with supply.

The real reason behind this push is a very strong irrigation lobby and gullible Federal and State Governments. The result would be to hold less water in the Menindee Lakes so that more water can be used upstream for irrigation. A perfect example of this is the deal done by Independent MP Tony Windsor with the Federal Government two days before the last election for an expansion of the Chaffey Dam from 62,000 megalitres to 100,000 megalitres. This water is for irrigators in the Tamworth area and for the city of Tamworth. These plans are dependant on the proposed water savings being achieved on the Menindee Lakes System. Unfortunately there has been virtually no consultation with the citizens of Menindee and Broken Hill over this issue and as usual the people it concerns the most have had the least input.

This will impact on already insufficient flows into the lower Darling River

### **Effects of Basin Plan Proposals for Extra Flows in the Darling**

The Guide to the Basin Plan proposes very modest cutbacks in water extraction for the tributaries of the Darling, mostly 14-18%. This should produce slightly higher flows to Menindee Lakes. Those higher flows will either by-pass the lakes or be held. If held, they would have the effect of potential increase in total evaporation, so engineering works might have a better return in water saved.

### **Climate Change Effects**

The effects of climate change are uncertain. If climate change leads to drying, it could very rapidly cancel any benefits from the MDBA cutbacks, leave the Menindee Lakes drier more often and cancel any benefits from engineering works.

## **Options for Water-Saving Measures - Balancing Darling River and Murray River Flows**

The water from the Murray and Darling Rivers joins at Wentworth, then the combined flow heads across the border into South Australia. There is a volume and quality of water that legally must cross into South Australia. The water has to come from the Murray or the Darling. Every gigalitre that comes from the Darling is a gigalitre that does not have to come from the Murray River. In general the crops grown on the Murray-Murrumbidgee system are more valuable per litre of water than those grown on the Darling system. In addition, the storages that feed the Murray are deeper and more efficient than the storages that feed the Darling. It makes more sense to use the Darling River water first.

But the Darling River is down to 43% of natural flows where it joins the Murray. The massive extraction of water from the Darling and its tributaries for wasteful flood irrigation of cotton is depriving Murray-Murrumbidgee irrigators of water.

The MDBA have failed to take into account the relative value of water used in the various valleys. In doing that they have failed to optimise the social and economic outcomes of their plan. Quite clearly, more Darling River water flowing to South Australia, rather than murray River water is a better economic outcome for the same environmental gain. **The Basin Plan should be proposing far higher cutbacks on extractions from the Darling and its tributaries.**

**APPENDIX 1**

**DARLING RIVER WATER SAVINGS  
PROJECT**

**REDUCING EVAPORATION FROM MENINDEE  
LAKES IN AN ENVIRONMENTALLY FRIENDLY  
MANNER ACCEPTABLE TO LOCAL  
COMMUNITIES**

**A submission by the Darling River Action Group Incorporated  
May 2008**

Secretary: Brian (Barney) Stevens:



## Summary

Federal and State governments appear determined to make engineering changes to the Menindee Lakes Scheme in order to create evaporation savings. The Darling River Action Group maintains that the problem of lack of water in the Darling River system is not due to evaporation from the Menindee Lakes Scheme, but due to over-extraction of water for irrigation.

However, if changes are to be made, DRAG suggests that the following proposals would be the least environmentally damaging, will have widespread community support, and are economically responsible. The proposals are very similar to Option 2 in the Maunsell Report. The proposals are as follows:

- Build a low-level regulator between Lakes Menindee and Cawndilla at Morton Boolka.
- Investigate the need for a small regulator at the lower end of Cawndilla Creek (downstream from Morton Boolka), in order to fill Eurobilli Lake, for environmental and cultural purposes.
- Replace the Menindee Lake outlet regulator with a regulator with a capacity of 10 Gegalitres per day.
- Construct a short (~100m) channel between the Menindee Lake regulator and the Darling River, to carry the excess water that cannot be handled by Menindee Creek. The new channel would be at a high level, and would need a footbridge for access to a culturally sensitive area.
- Deepen the part of Menindee Creek that is within Lake Menindee, in order to access the residual pool.
- Build a low-level regulator between Lakes Wetherell and Tandure, with the aim of holding water for later release to the Anabranche.

The above changes would only achieve community acceptance if it is guaranteed in law that the evaporation savings are to flow downstream from the Menindee Lakes, and are not allocated to upstream irrigators. Any allocations upstream would result in even less flow in the Darling River.

## Position of the Darling River Action Group

The Darling River Action Group (DRAG) opposes proposals involving major damage to environmental, cultural, or recreational assets. Such proposals include the proposed channel from Lake Cawndilla through the Kinchega National Park, and the proposed levee across Lake Menindee. DRAG also wants the water supply for Broken Hill and Menindee to continue to come out of the upper lakes. We would also like to see all of the lakes full, but that might not happen.

## **Background**

Under current rules the lakes are in NSW control until the stored water exceeds 640 GL. Then the MDBC takes over, and the water belongs 50:50 to NSW and Victoria. If the South Australians ask for water, it will be released from Menindee Lakes rather than from the dams on the Murray. That is because water in Menindee Lakes evaporates much more quickly than water in the big dams down south. Also the Murray water grows more profitable crops.

When the volume of water stored in the lakes drops below 480 GL, control reverts to NSW.

When the MDBC makes a release, they will release 9 or 10 GL per day, to minimise losses as the water flows to South Australia. Presently Lake Menindee can only release 4 GL per day and Lake Cawndilla can only release 2 GL per day. That means water has to be released from the upper lakes.

By the time the total volume reduces to 480 GL, most of the remaining water is left in residual pools in Lakes Menindee, Cawndilla, and Pamamaroo, out of reach for water supplies and evaporating at a high rate, due the large surface area.

### **Climate Change and Irrigation Extractions – Reduced Flow**

A lot of the talk about Menindee Lakes is based on the past, when the lakes were filled most of the time. Irrigators talk about evaporation losses of 400 GL per year at Menindee. All of this is out of date. The extractions have increased enormously upstream, and the climate is changing. Since 2002 Lakes Menindee and Cawndilla have been empty, and the other lakes have had variable levels. During this period there would not have been more than 50 GL per year evaporation from Menindee Lakes.

All of the six options proposed by Maunsell involve changes to Lake Menindee and/or Lake Cawndilla. These changes will only have benefits when there is water in those two lakes. And how often will that be? On recent experience this may only be about once in 10 years. This year there were big floods up north, but Lakes Menindee and Cawndilla are still dry. Most of the Queensland floodwaters did not cross the border.

Governments should examine all of the proposed options, and ask whether evaporation savings only once in ten years, warrant the proposed expenditures.

### **Evaporation Savings per Flow**

The amount of evaporation savings per year depends on how often there is a flow, and that is unknown. So here we consider savings per flow rather than savings per year. The proposal will not make much difference to small flows that only fill Lakes Wetherell and Pamamaroo. But none of Maunsell's options make much difference to such flows.

With our proposal, any water that flows into Lake Menindee, up to the level of the new regulator near Morten Boolka, can be recovered. (Although there might still be a small residual pool.) Two situations are considered, a medium flow and a very large flow. Medium flows are likely, but very large flows are considered unlikely until upstream over-extraction is overcome:

*1. A medium flow*, enough to fill Lakes Wetherell and Pamamaroo and flow into Lake Menindee, but not enough to flow into Lake Cawndilla.

When Lakes Pamamaroo and Wetherell are full, and water flows into Lake Menindee, the MDBC takes control. With the new Lake Menindee outlet, they can release water from Lake Menindee only, then take water off the floodplain in Lake Wetherell (something that is being done now for environmental purposes), and if necessary out of Lake Tandure. When the lakes return to NSW control there will still be a lot of water in Lake Pamamaroo, reduced only by evaporation.

The evaporation savings are equal to the volume of the present residual pool in Lake Menindee (about 100-150 GL), plus the water that would have spilled into Lake Cawndilla up to the level of the Cawndilla residual pool (up to about 100 GL). There will be a small increase in evaporation from Lake Pamamaroo, because it is not being drawn down. There will be a small reduction in evaporation in Lake Menindee, because it is drawn down more quickly than before. The overall effect is that the water that is currently left in three residual pools will in future be kept in Lake Pamamaroo, where it is accessible and will maintain better quality.

*2. A very large flow*, enough to fill all of the lakes. The MDBC takes control. They can release water from both Lakes Menindee and Cawndilla. If water is called for by South Australia, release from Lake Menindee will be fast. Release from Lake Cawndilla will initially be fast, as it flows out of its 2 GL per day outlet regulator, and also flows back into Lake Menindee. Then it will be very slow when the level falls below the Morten Boolka regulator. Eventually there will be a residual pool in Lake Cawndilla, as at present. There is a danger that the MDBC will empty Lake Menindee, and then take water from Lakes Wetherell and Pamamaroo to supplement the flow from Lake Cawndilla. If that happens, some of the NSW 480 GL reserve will unfortunately be in the Cawndilla residual pool. But this is still better than the present situation where the NSW 480GL can be mostly in residual pools in both Lakes Cawndilla and Menindee.

### **Effects on Lake Cawndilla**

Lake Cawndilla will not fill as often. But with the current up-river extractions and climate change, it may never fill anyway. Otherwise, Lake Cawndilla is left as it is. The outlet regulator on Lake Cawndilla only handles 2 GL per day, and that is all the channels to the Darling and to the Anabran can handle. This outlet can be used by the MDBC when Lake Cawndilla is full.

If Lake Cawndilla fills, its water can be used as it is at present. There will be a residual pool, and that can just stay there for the flora and fauna until it evaporates. It has an environmental function, so is not wasted.

### **Delivering Water to the Anabranh and Tandou**

With the new pipeline to the Anabranh properties, there is still an acknowledged responsibility to run environmental flows down the Anabranh from time to time. No environmental flow has occurred since 2003. There are two ways those flows can occur: either from Lake Cawndilla, or from overflow from the Darling River between Willotia and Karoola properties. Overflow into the Anabranh only occurs when the Darling is flowing at greater than 10 GL per day. Realistically, to get any decent flow in the Anabranh, the Darling needs to be flowing at about 12 GL per day, for some time.

If Lake Cawndilla fills, there is no problem. When it does not, the best chance for the Anabranh is to piggyback on an MDBC flow down the Darling. The MDBC would be able to release 10 GL per day from the proposed new outlet in Lake Menindee, and at the same time take 2 GL per day off the Lake Wetherell floodplain, or out of Lake Tandure, or if necessary out of Lake Pamamaroo. That extra 2 GL would flow down the Anabranh. It is recommended that water in Lake Tandure be set aside for the Anabranh, but only while the lakes are under MDBC control (the water can only reach the Anabranh under conditions where the MDBC is in control).

The Tandou irrigation operation at Lake Tandou can either take its water from Lake Cawndilla, pump it from the Darling, or capture it from the Darling during high flows.

### **Effects on Sunset Strip**

As has been well-publicised, the owners of houses at Sunset Strip have been extremely disadvantaged by the lack of water in Lake Menindee since 2002. Under DRAG's proposal Lake Menindee will hold water more often than it does under current arrangements. It will also be emptied more quickly. But occasional water is better than virtually no water.

A side benefit to the people of Sunset Strip is that Lake Pamamaroo and Copi Hollow will be full more often, and available for recreational activities. Those lakes are only a small distance from Sunset Strip.

A viable proposal might be to relocate Sunset Strip to the edge of Lake Pamamaroo.

### **Costs**

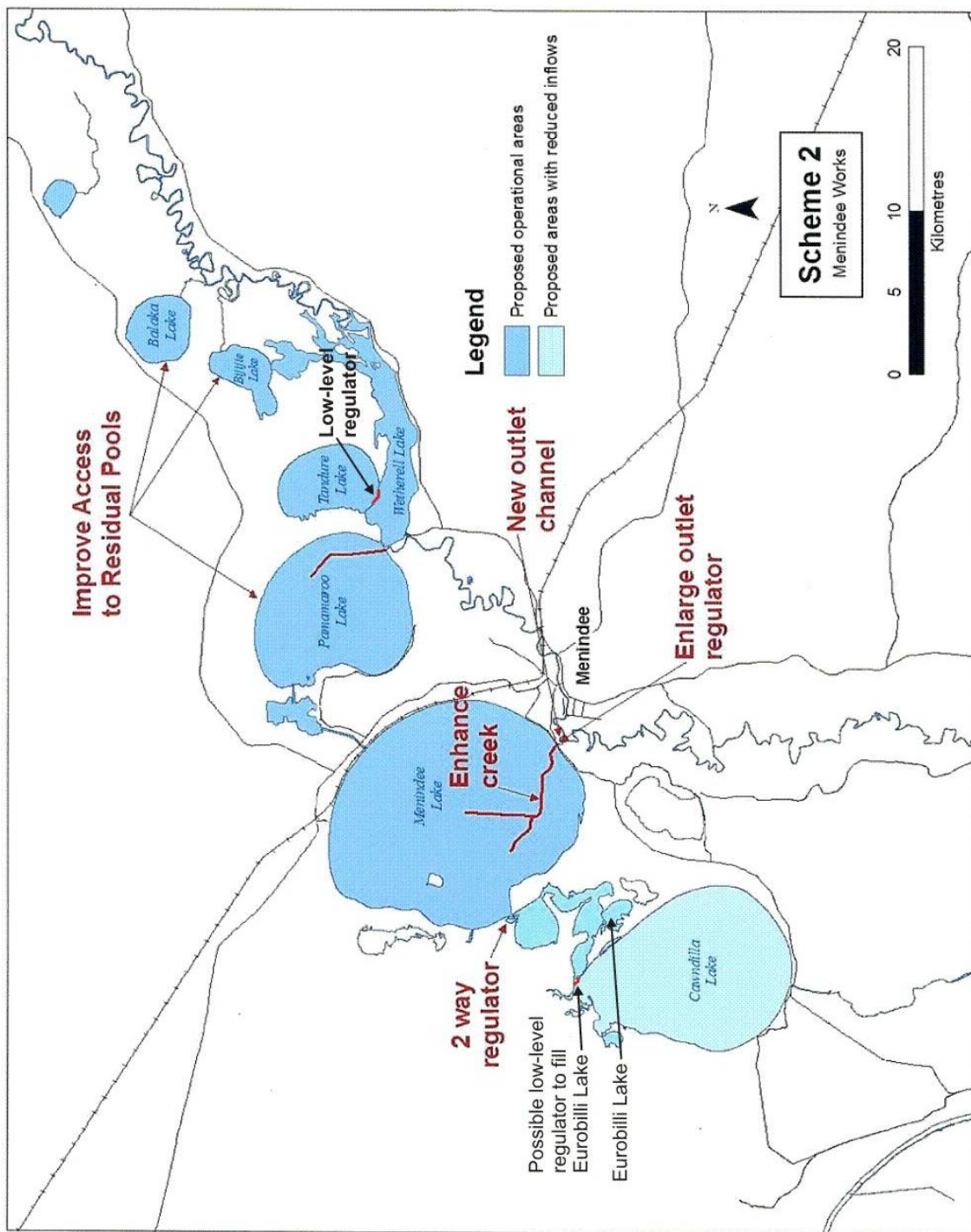
The costs of the structures and earthworks in this proposal are relatively low (see the Maunsell report for estimates), especially compared with the proposals to build levees across Lake Menindee. Such a levee, 140m wide at the base and 10m high, would probably cost ~\$100 million plus \$1 million annual maintenance.

## **Benefits**

- Major evaporation savings, 100-250 GL per medium to large flow.
- Increased water security for Broken Hill
- A mechanism to get water down the Anabranch
- No expensive, expensive-to-maintain, unsightly levee across Lake Menindee
- No huge channel across Kinchega National Park.
- Improvement in outlook for Sunset Strip

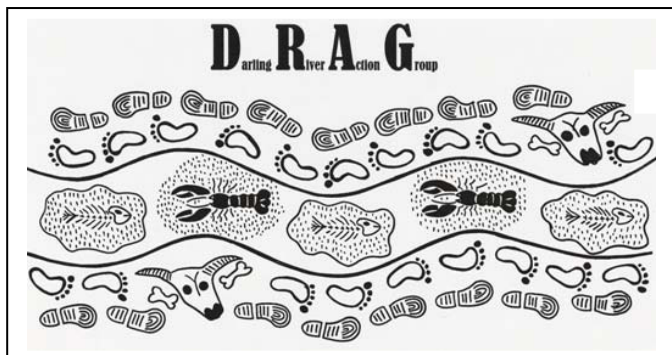
## **Who Gets The Evaporation Savings?**

No re-engineering of the Menindee Lakes should take place until it is guaranteed by law that the evaporation savings will flow down river. If any of these evaporation savings are given to upstream irrigators, it will mean decreased flows in the Darling River, an unacceptable situation.



**Darling River Action Group proposals for Menindee Lakes  
(very similar to Maunsell Option 2)**

## Appendix 2



**Darling River Action Group**

### **DARLING RIVER ACTION GROUP**

#### **SUBMISSION TO MURRAY DARLING BASIN AUTHORITY**

#### **COMMENT ON GUIDE TO THE BASIN PLAN**

##### **Background**

The Darling River Action Group Incorporated is a non-government, citizens group that commenced in 2004 after the disastrous water event of 2003 that nearly left Broken Hill without water. That event occurred when all of the Menindee Lakes were drained simultaneously to provide water for South Australia, which was due to low water levels in the Murray River and lower lakes. Under the rules the lakes return to NSW control when the volume drops to 480 gigalitres. However, in this case there was much less than 480 gigalitres and most of it was in residual pools out of reach for water supply purposes. The problem was caused by a surveying error in Lake Wetherell, where the volume was 40% wrong. The outcome was saline water, rich in chlorinated organics being delivered to households in Broken Hill. The water was undrinkable, corroded air coolers, hot water systems and appliances and killed gardens. By the time the next flow arrived at Lake Wetherell, Broken Hill was within 3 weeks of running out of water and evacuating the city.

Many Broken Hill people grew up with the Darling River, the Anabranch and the Menindee Lakes as a major part of their lives, and have witnessed the consistent and continued degradation of these water assets as cotton irrigation expanded upstream and diverted huge amounts of water out of all of the tributaries.

We have become more vigilant and much more vocal as a result of these failures of government. We have attracted members from many places in addition to Broken Hill, people who like us can see the disaster that has befallen the Darling River.

### **The Guide and its Prognosis for the Darling River**

The Darling River Action Group supported the establishment of the Murray Darling Basin Authority and looked forward to the development of the Basin Plan. We were very disappointed to see the miserable forecasts for the Barwon-Darling under Scenarios 1 to 3 in the Guide.

At present the end of system flow for the Barwon-Darling is 53% of natural flows, and for the Lower Darling 43%. That lines up with 41% for the Murray. Obviously one of the reasons that the Murray flow is so low is that the Darling is not feeding enough into it.

Under Scenarios 1-3 the end of system flow in the Barwon-Darling will only be 60-62% of natural flows, and the Lower Darling 53-55%. How can you even think that these are adequate results? We believe 75 to 80% of natural flow to be the minimum at the lower end of the Darling River

### **Importance of the Darling River**

The Guide virtually dismisses the Darling River as being insignificant because it only provides 17% of the flow in the lower Murray, on average. The point was made at the Mildura public meeting that the use of “average” for the Darling River is very misleading. In some years the Darling provides no water for the lower Murray, while in others it may provide a large percentage of the flow.

An example was this year when a slug of water about 130 gegalitres in volume was shepherded past Menindee Lakes, down the Darling and into South Australia. This occurred before the big rains in the Murray, when South Australia was in dire straits. The South Australians noticed the change in colour of the water and noticed the rise in level of the Murray River. That Darling River water helped to stave off the development of acid sulphate soils in South Australia until the Murray flows came through.

By dismissing the importance of the Darling and leaving it in its poor state, you are cutting off the one major alternative source of water for South Australia.

### **Murray River Water versus Darling River Water**

A certain amount of water has to go to South Australia each year. The NSW and Victorian water authorities know that Murray River water is more valuable than Darling River water because of the crops that are grown in each system. They also know that Murray River water can be stored for longer periods because of the more efficient dams on the Murray. Therefore when there is a choice between sending Murray River water



or Darling River water to South Australia, they will send Darling River water and keep the Murray River water for higher value crops.

But lately it has become more difficult to find Darling River water, because it is being diverted out of all of the tributaries to be wasted on flood irrigating cotton. Flood irrigation of cotton in the Darling Basin directly reduces more valuable crops in the Murray-Murrumbidgee system.

### Where Has the Darling River Water Gone?

It is interesting to look at the proportions of original water contributions to the Darling, and the current end of system flow percentages. These are shown in Table 1 below. It is obvious from these figures that the worst losses to the Darling River have come from extractions on the Condamine-Balonne, the Border Rivers and the Gwydir. Yet these three systems are the ones the MDBA is proposing to leave in the worst condition. These three river systems should be targeted for the greatest amount of water saving. Why is the Gwydir River to be left in such a poor state?

**Table 1:** Pre-development contributions to the Darling River, Current and Projected end of system flow figures.

<b>River</b>	<b>Original Average Contribution to the Darling</b>	<b>Current End of System Flow</b>	<b>End of System Flow under 4000 GL Scenario</b>
Warrego	Variable, Low	84%	84%
Condamine-Balonne	15.1%	42%	61%
Border Rivers	20.9%	64%	73%
Gwydir	12%	40%	55%
Namoi	23.1%	79%	86%
Macquarie-Castlereagh-	21.6%	76%	84%

### Effectiveness of Purchase of Water from Darling River Tributaries

Some tributaries of the Darling River deliver water to the Darling more efficiently than others, so if all other things are equal it is tempting to purchase water from the tributaries that deliver water more efficiently.

The Sinclair Knight Merz Darling River Water Saving Project Part B final report lists the efficiencies of the various tributaries (page 170, table 8-1), reproduced below. These efficiencies relate to how much of the water purchased or saved will make it to the end of the valley, to Bourke or to Menindee. For example if 10 gegalitres is purchased on the Namoi, about 10 gegalitres will reach the end of the Namoi and 7.6 gegalitres will make it to Menindee. In comparison if 10 gegalitres are purchased on the Gwydir, only 4.8 gegalitres will reach the end of the Gwydir and 3.3 gegalitres will reach Menindee.

**Table 2:** Efficiencies of purchases from each valley.

<b>Valley</b>	<b>Efficiency at End of Valley</b>	<b>Efficiency at Bourke</b>	<b>Efficiency at Menindee</b>
Border Rivers	0.92	0.77	0.62
Gwydir	0.48	0.41	0.33
Namoi	1.00	0.92	0.76
Macquarie	0.48	0.43	0.35
Castlereagh	0.68	0.61	0.50
Barwon-Darling Bourke	0.84	1.00	0.84
Barwon-Darling Menindee	1.00	0.84*	0.54*

\* These figures are nonsense – one relates to water purchased at Menindee and flowing uphill to Bourke, and the other is just rubbish.

Unfortunately the SKM report did not include the efficiencies of purchases from the Condamine-Balonne system. But Rob Freeman at the Mildura public meeting stated that if Cubbie Station was purchased and the water allowed to flow, only one third of it would reach the Darling.

These water efficiency figures cannot be taken as accurate under all circumstances. The efficiency of delivery to Menindee will depend on whether the water is released during dry times or is riding on the back of existing flows in wet channels.

DRAG would like to see Cubbie Station taken out of the system, or used as temporary storage to increase the size of flows into the Darling. Cubbie's storage capacity is 450 gigalitres. One third of that is 150 gigalitres, an enormous boost to the Darling River if Cubbie's full storages were to be released.

It is worth noting that in Queensland the water licence relates to the storage volume, not to an annual extraction volume. This means that if there are two flows in a particular year, the storage can be filled in the first flow, some or all of it used, and the storage can be filled again in the second flow.

### **Climate Change and the Warrego and Darling Rivers**

Despite this year's massive rains, climate change is having real effects on Australia and on the Murray-Darling Basin. One obvious effect is the continuing drought in Western Australia, where the rain system has moved southwards off the continent as predicted in climate change modelling.

In the Murray Darling Basin there has been a noticeable trend in recent years for more rain to occur in the northern parts of the basin and less in the south. (2010 is very

different, but we have yet to see if that is a one-off event.) In particular western Queensland has seen heavy falls and flooding. For years the Warrego River had very little flow, and what there was, was held back by Toorale's dams. In the last 3 years there have been quite large flows in the Warrego, and in one of those years there was very little flow in the other rivers of the Murray Darling. The MDBA should pay attention to the possibility that the Warrego could be an important water source and consider buybacks of irrigation licences from that river.

The movement of rainfall from southern to northern basin makes the Darling River more important in terms of delivering water to the lower Murray. This highlights the case for reducing extractions from the Darling and its tributaries. There should be a weighing up of the environmental benefits of water flowing down the Darling and social and economic benefits of water use in South Australia versus flood irrigation of cotton fields in the northern basin.

### **Menindee Lakes**

The Menindee Lakes are situated almost at the bottom of the Darling River system. This rich and diverse ecosystem has been suffering from insufficient flows for the last 10 to 15 years and was almost completely dry from 2002 to 2010. These low flows were mainly due to over extractions in the upper Darling and its tributaries.

Explorer Major Thomas Mitchell formerly named the lakes Laidley's Ponds in 1831. Except for Lake Wetherell, the Menindee Lakes are all naturally occurring lakes rimmed by large stands of river red gums, and filled from overflow of the Darling River. During times of high flow they acted as nature's flood mitigator by absorbing large volumes of water and gradually returning it to the lower Darling and Murray Rivers.

All water stored in these lakes, except for residual pools, is returned to the lower Darling and Murray River system, and eventually through to South Australia and the Coorong. This is unlike up-river irrigation farms where water taken from the river system is never returned

Lake Wetherell, the only man-made lake in the system, is a series of bends of the Darling River channel and shallow overflow lakebeds. The resulting masses of reed beds and snags developed over the last 50 years have turned the lake into an ideal wetland for a recorded 185 species of birds, many of which are endangered. Lake Wetherell is also, along with the residual pools left in the other lakes when the water levels drop, a hatchery and nursery for our native fish, frogs, yabbies and other aquatic species. It partly compensates for the destruction of other Darling system wetlands such as the Macquarie Marshes, Gwydir Wetlands and Narran Lake.

Recreation and tourism on the lakes also plays a vital part in the wellbeing and economy of the towns situated on and around the Menindee Lakes system, including the City of Broken Hill.

Some politicians and irrigator groups have over the past few years singled out the Menindee Lakes as a scapegoat for the problems of the Darling River by describing them as “just big evaporation pans” and calling for their decommissioning. They believe that concentrating their efforts and thereby media focus on evaporation rates in Menindee Lakes, will divert attention from the real problem of over-allocation of water licences and ill-conceived water sharing policies by state governments. Evaporation rates on the lakes are little different from those on shallow farm storages. Far more water is lost by evaporation from farm storages and by flood irrigation.

The Menindee Lakes are not receiving adequate flows from the upper tributaries and are suffering as a consequence. The proposed end of flow figures of 62% Barwon-Darling and 55% lower Darling are far too low for this system to regain ecological health. Figures of 75 to 80% are needed.

### **Proposed Water Savings of 200 Gigalitres from Menindee Lakes**

Various water authorities and irrigators groups have claimed that an average of 200 gigalitres per year can be saved from Menindee Lakes, by changing management regimes and by carrying out engineering works. We believe these figures are fantasies. Just look at the last 10 years.

Years 2000-2002 were fairly “normal” and some savings could have been made by not filling Lakes Menindee and Cawndilla, or by doing engineering works. However, if Lakes Menindee and Cawndilla had been by-passed by 2000 and 2001 flows, there would not have been any reserve of water for South Australia in drought year 2002.

If the outlet on Lake Menindee had been enlarged to 10 gigalitres per day, the 2003 disaster for Broken Hill’s water supply could have been averted and considerable water saved in the upper lakes.

From 2002 to early 2010 Lakes Menindee and Cawndilla were empty, so there were no savings to be made either by changing management practices or by re-engineering these two lakes.

In 2010 a moderate flow was shepherded past Lakes Menindee and Cawndilla, then massive flows filled the lakes. That water was not needed downstream or upstream, the lakes acting as flood mitigators. If drought conditions return again, the lack of action in terms of engineering enhancement of the Menindee Lakes will result in some evaporation losses.

In conclusion, there is no water to save in Lakes Menindee and Cawndilla in drought years, and in flood years there is no reason to save the water. This means that potential savings will only occur in years of moderate flows. they will not average anything like 200 gigalitres per year.

## **The Aquifer Proposal**

At the present time there is a Memorandum of Understanding between the NSW Government and the Federal Government on proposed structural changes to the Menindee Lakes System. These changes are supposed to make savings of 200 gegalitres by reducing evaporation. Which basically means decommissioning two of the largest lakes (Menindee Lake and or Cawndilla Lake). Most of these changes are dependent on finding an alternative water source for Broken Hills Supply such as a suitable aquifer. Testing of an aquifer downstream from Menindee is almost complete and if viable will almost certainly go ahead. The cost of infrastructure and ongoing expenses to the end users is yet to be determined but we believe it will be extremely expensive. The reason given for this drive for an aquifer by the NSW Government is to drought proof and give Broken Hill a reliable source of water. However, Broken Hill has had a reliable source of water since 1960 when a pipeline was constructed from the Darling River to the City and only since the massive expansion of cotton farms in the upper Darling and its Tributaries has there been a problem with supply.

The real reason behind this push is a very strong irrigation lobby and gullible Federal and State Governments. The result would be to hold less water in the Menindee Lakes so that more water can be used upstream for irrigation. A perfect example of this is the deal done by Independent MP Tony Windsor with the Federal Government two days before the last election for an expansion of the Chaffey Dam from 62,000 megalitres to 100,000 megalitres. This water is for irrigators in the Tamworth area and for the city of Tamworth. These plans are dependant on the proposed water savings being achieved on the Menindee Lakes System. Unfortunately there has been virtually no consultation with the citizens of Menindee and Broken Hill over this issue and as usual the people it concerns the most have had the least input.

This will impact on already insufficient flows into the lower Darling River

## **The Anabranh**

The Great Anabranh was an overflow stream from the Darling River below Menindee, receiving water at Menindee flow levels of 10,000 megalitres per day, until the completion of the Menindee Lakes Scheme when water was delivered to the Anabranh via Lake Cawndilla. In 2006 a pipeline was installed with pumps on the Darling and Murray Rivers. This delivers up to 3 gegalitres of water to properties along the Anabranh. Before the pipeline there was a guaranteed flow of 50 gegalitres per year down the Anabranh. Now there is no guaranteed flow; water will only flow down the Anabranh if the Darling River overflows, or if Lake Cawndilla fills. Irrigators up-river will do their best to make sure this never happens. It has been claimed that the pipeline saves 47 gegalitres per year, and that this is additional flow for the Darling River. We dispute this, and suggest that the savings have been used upstream of Menindee Lakes.

Since filling the Menindee Lakes storage, the Great Anabranch only missed its annual supply once in 40 years. This was the case until 2003.

Because of mismanagement and over-commitment in our river systems, the Great Anabranch was again targeted as a “wasteful, polluted, denigrated stream of saline water, infected with blue green algae, cumbungi and carp” when in actual fact it was a well recognized breeding ground for many species of birds, fish, green tree frogs and water rats, and highly valued by recreational visitors, anglers and apiarists.

The DAMP Management Plan to convert the Great Anabranch to a “Pipeline/Environmental Flow” situation has become a reality. The pipeline has gone ahead, but the “environmental flows” did not until 2010, due to highly reduced flows down the Darling River, the drought, and no water in Lakes Menindee and Cawndilla for over 8 years.

Your figure of 55% proposed end of flow and poor condition in the lower Darling will cause the death of Great Darling Anabranch. The loss of these magnificent wetlands will be a national disgrace. End of flow figures of 80% are needed

### **The End Result**

The Darling River Action Group believe the MDBA has not acted under the requirements of the Act, by including economic and social factors in their decisions and to only examine the lower band 3000-4000 GL returns. The poor ratings of the Lower Darling and other key regions in the upper Darling means that important ecosystems such as the Great Darling Anabranch will be at significant risk of being compromised. This does not conform with the requirement of the Act to not compromise key environmental outcomes including ecosystems. If all systems are not returned to good condition by this Basin Plan then we will be continually confronting the same problems we face today.

The MDBA needs to make the hard decisions now that are based on the best scientific data available and not bow to pressure from the irrigation and farm lobby. The majority of the Australian population are not farmers or irrigators and this majority wants their rivers and lakes returned to environmental health and sustainability.

### **Yours sincerely**

Mark Hutton – Chairman

Brian (Barney) Stevens – Secretary

On behalf of the Darling River Action Group