9 February 2018 Murray-Darling Basin Royal Commission
GPO Box 1445
Adelaide, South Australia, 5001

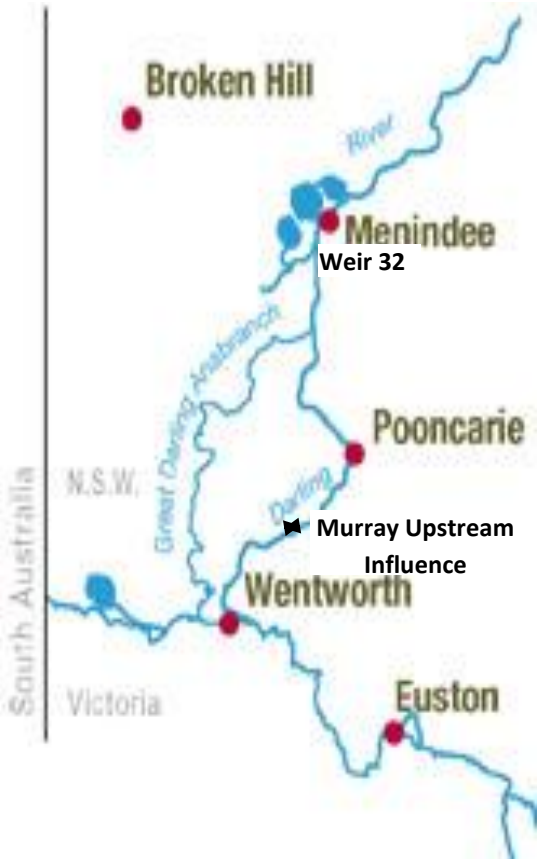
21 March 2018

Submission by the Lower Darling Horticulture Group

Introduction

Thank you for the opportunity to make a submission to the Murray-Darling Basin Royal Commission.

The Lower Darling Horticulture Group includes 10 families operating 6 family farms between Weir 32 on the Darling River at Menindee and the upstream influence of the Wentworth Weir on the River Murray. The 6 farms all have extensive, high value permanent plantings, including citrus, stone fruit, wine grapes and table grapes and operate with NSW high security and general security licensed water entitlements.



Located upstream of the influence of the River Murray and with minimal local run-off, the Lower Darling River downstream of the Menindee Lakes, together with the towns and villages, irrigation enterprises, domestic and stock water needs are entirely dependent on flows from the Menindee Lakes storage scheme.

The availability of water in the Menindee Lakes storage scheme, and the water supply to the Lower Darling River is dependent on inflows from the Northern Murray-Darling Basin and the manner in which water is stored and released.

For this reason we believe that water management issues in the Northern Murray-Darling Basin upstream of the Menindee Lakes cannot be treated without consideration of the impact on the Lower Darling River downstream of the lakes.

The manner in which water is stored and released from the Menindee Lakes has an equally significant impact on the availability of water and security of water supply for irrigation enterprises in the Lower Darling River. In recent years, the release of high volumes of water (mostly) for environmental purposes has reduced the volumes stored in the Menindee Lakes storage scheme more quickly than prior to the development and introduction of the Basin Plan. This was a major factor leading to an extended period in 2015-2016 where the Lower Darling River ceased to flow, having significant environmental and health impacts and threatening the viability of the irrigation businesses on the Lower Darling River.

The submission by the Lower Darling Horticulture Group to the Murray-Darling Basin Royal Commission will focus on the impact of;

i. increased diversions of water in the northern Murray-Darling Basin upstream of the Menindee Lakes,

ii. changed management of the Menindee Lakes water storage scheme to prevent foreshore erosion and the damage to Aboriginal burial sites, and

iii. increased releases from the Menindee Lakes to provide environmental outcomes downstream of the Darling River.

The environmental, economic, social and cultural impacts of the points raised will be discussed, consistent with the terms of reference of the Murray-Darling Basin Royal Commission, and with reference to the Murray-Darling Basin Plan.

Brief history of water management in the Lower Darling River

The irrigation of permanent plantings, including citrus, stone fruit, table grapes and wine grapes, commenced on the Lower Darling River in the 1920's and has grown since the 1990's with the expansion of the wine grape industry, and the export of high quality irrigated produce into international markets.

The development of high value irrigation enterprises on the Lower Darling River has been enabled by a continuous water supply. From 1943 to 2003, there was a continuous supply of water for town water supply, domestic supply for homesteads, stock water supply and for irrigation.

Jamesville 180acres Export Citrus

Tulney Point Station – 130acres Export Citrus and Wine Grapes

The security of water supply for the Lower Darling River was further enhanced by the construction of the NSW Menindee Lakes Water Storage Scheme in the 1950's and 1960's. As a consequence, water users on the Lower Darling River enjoyed the most secure water supply in the Murray-Darling Basin.

In the 1980's, when area-based water entitlements in NSW were converted to volumetric entitlements, irrigators with permanent plantings in the regulated reaches of the Lower Darling River were issued with 'high security' volumetric entitlements. High security entitlements were required by the NSW government for permanent plantings and were issued based upon the assumption that, under the existing levels of development, the volume of the entitlement could be supplied in all years of recorded climatic conditions.

Although not having the same security of supply to that of high security entitlements, 'general security' entitlements in the Lower Darling River also enjoyed a high level of reliability, receiving 100% of their entitlement in every year from when volumetric entitlements were introduced until 2003-2004. Not surprisingly, some permanent plantings in the Lower Darling were subsequently established using general security entitlements.

Further, the interstate water sharing agreement for the Menindee Lakes (Murray-Darling Basin Agreement) included volumetric triggers that, when storage volumes in the Menindee Lakes fell below 480,000 megalitres (ML), management of the remaining water reverted to NSW to provide drought security for water users in the far-west of NSW, including Broken Hill.

The 480,000 ML trigger was intended to provide water to users for a period equivalent to the longest drought sequence recorded prior to the construction of the Menindee Lakes storage scheme. This is effectively two years. Under the Murray-Darling Basin Agreement, management control of the water in the Menindee Lakes passes back from New South Wales to the MDBA when storage volumes next exceed 640,000 ML.

Recent changes to policy and operations affecting the security of water supply

The reliability of water supply to the Lower Darling River that underpinned the development of irrigated high value horticulture and viticulture has been significantly reduced over the past 20 years due to upstream development in Queensland and New South Wales, and the reduction of storage levels at the Menindee Lakes to minimise foreshore erosion and to protect Aboriginal burials.

More recently the release of high flows to meet environmental objectives downstream of the Lower Darling River has further reduced the security of water supply in the Lower Darling River to the extent that the continued production of irrigated citrus, stone fruit, table grapes and wine grapes has become increasingly unviable.

The Lower Darling River had continuous flow from 1943 to 2003. Since 2003 there has been three extended periods on no flow. These have occurred in 2003-04, 2006-07 and most recently 2015-16.

These periods of no flow have had significant impacts on the environment of the Lower Darling River and major economic and social impacts in the region.

Families affected by no flow events on the Lower Darling

Environmental flow needs in the Barwon-Darling and Lower Darling Rivers (longitudinal connectivity). Impact of increased extraction of water for cotton.

Under natural conditions, the Barwon-Darling River upstream of the Menindee Lakes and the Lower Darling River downstream of the Menindee Lakes were the same river.

The Barwon-Darling River has some of the most variable flows of any river in the world, subject to floods and extended periods of low flow.

CSIRO has predicted that the impacts of climate change on flows in the northern Murray-Darling Basin, including the Barwon-Darling River will be more extended periods of low flow punctuated by more extreme but less frequent floods.

The Barwon-Darling River upstream of Menindee is an unregulated river. Water supply in an unregulated river is not met by public infrastructure (dams), but is dependent upon local runoff and natural inflows. Water supply in unregulated rivers and streams is intermittent and water is often pumped from flows in unregulated rivers into large on-farm water storages. This is the case on the Barwon-Darling River upstream of Menindee where flows are highly variable and characterised by floods and extended periods of low flow.

During extended dry periods, there are often rainfall events in upstream catchments that provide small but ecologically significant flows across the northern Murray-Darling Basin and in the unregulated Barwon-Darling River.

Amongst other things, these small flows during extended dry periods are essential in providing hydrologic connectivity of pools. The connectivity of these pools is essential for maintaining the river environment. They provide drought refuge for native fish and other aquatic organisms, provide for fish breeding and fish passage, refresh vegetation and are critical in maintaining water quality by flushing pools and mitigating salinity and algal blooms.

The report 'Ecological needs of low flows in the Barwon-Darling' Technical Report, MDBA, March 2018, stated;

'One of these measures specifies the need for the protection of smaller but ecologically significant flows across the Northern Basin. Smaller flows are critical for both communities and the environment, particularly at dry times. The Authority believes that the protection of the most ecologically significant small flows is critical to achieve the desired outcomes of the Basin Plan, particularly in the Barwon-Darling.'

'Protecting environmental water and restoring ecologically important small flows was also identified as a policy priority to be addressed by Basin governments by the recent MDBA Compliance review and Ken Matthews Review (Matthews 2017) commissioned by the NSW government.'

The report also states; 'Ecologically important small flows also provide water for downstream communities to ensure reliable and good quality water for critical human water needs (such as town water and stock and domestic uses), and water to support cultural and recreational values.'

A further report 'Observed Flows in the Barwon-Darling 1990-2017: A Hydrologic Investigation' Technical Report, MDBA, March 2018, identified a significant change in the frequency of small flows in the Barwon-Darling since 2000.

'The results presented here suggest a change to the hydrologic behaviour of the Barwon-Darling has occurred since the turn of the Millennium (particularly in the mid-sections of the river) reflected in the characteristics of both individual low and fresh flow events, and in the dry spells between events.'

Some individual flow events in the post-2000 period were seen to be very heavily attenuated in both the Collarenabri-to-Walgett and (particularly) the Walgett-to-Brewarrina reaches, contrary to the pre-2000 trend. Of these, a small number of flow events were attenuated to zero after passing Walgett and Geera gauges and before reaching Brewarrina gauge. That is, flow events recorded at Walgett (and Geer) at the upstream end of mid-sections of a river reach were found to have disappeared completely with no corresponding flow recorded 50 km downstream at Brewarrina.

Additionally, periods of low or no flow were found to have increased significantly in length for gauges downstream of Bourke post 2000 when compared to pre 2000,.....'

The Lower Darling Horticulture Group submits that water management in the Northern Basin, and particularly the Barwon-Darling River, should not be undertaken in isolation of the environmental, social, economic and cultural issues downstream to the Menindee Lakes and in the Lower Darling River.

The increased extraction of water from ecologically significant small flows in the Barwon-Darling River continues to reduce the longitudinal connectivity of the Barwon-Darling River to Menindee during dry periods which is critical to the environment.

This is also having a significant impact on the water availability in the Menindee Lakes and on the environment, communities and irrigated agriculture downstream in the Lower Darling River, where there have been three periods of no flow in the river since 2003. Prior to 2003, there was continuous flow since 1943.

The Lower Darling Horticulture Group submits that the MDBA should not accredit any Water Resource Plan for the Barwon-Darling River and Northern Basin tributaries that do not provide for the protection of ecologically significant flows to Menindee and for the environment, water quality and the critical water needs such as town water, stock and domestic and high value irrigation needs in the Lower Darling River.

Unless the Water Resource Plans for the Barwon-Darling and Northern Basin tributaries do address connectivity and take into account the water quality and environmental impacts on the Menindee Lakes and Lower Darling River downstream, then the MDBA should use 'step-in' provisions in the Water Act 2007, to ensure these issues are addressed.

Impact of increased extraction for cotton on downstream consumptive users in the Lower Darling River.

It is the low flows that occur during extended dry periods that have been essential in providing water into the Menindee Lakes, and providing the security of water supply to high priority uses including town water supply, stock and domestic needs and 'high security' irrigation needs downstream, including in the Lower Darling River.

Since the construction of the Menindee Lakes storage scheme in the late 1950's and early 1960's, the Lower Darling River downstream of the Menindee Lakes has been classified as a 'regulated river'.

Under the NSW Water Act, 1912 and the NSW Water Management Act, 2000, water supply to users in a regulated river is provided by water that is stored in large public dams. In the case of the Lower Darling River, regulated water supply is provided from the Menindee Lakes.

Licensed water users dependent on water from the Menindee lakes depend on inflows from the Northern Basin, including the Barwon-Darling for its security of water supply. This includes irrigators on the Lower Darling River downstream of the Menindee Lakes.

To protect high priority water needs during extended periods of low inflow into the Menindee Lakes, up until 2014 the NSW government would selectively implement embargos on the extraction of water from low flows by irrigators on the Barwon-Darling River and its tributaries. Embargoes would continue until the volume available for town water supply to Broken Hill was guaranteed for 18 months. Since 2014, the NSW government has chosen not to implement this policy, allowing irrigators in the Barwon-Darling to pump during periods of low flow.

Similarly, extraction of low flows would be restricted to users with 'A class' licences in the unregulated reaches of the Barwon-Darling and restricted to low volume pumps. This would typically provide for town water supply, domestic use and to maintain breeding stock.

Since 2012, however, the NSW government has allowed greater access to low flows by holders of 'B and C class licences' in the Barwon-Darling that allow extraction of large volumes of water, preventing the passing of low flows downstream and into the Menindee Lakes.

Recent defence of the change of policy by the NSW government and supported by northern NSW irrigation industry is that the extraction of water by NSW irrigators accounts for only 6 percent of the average flow in the Barwon-Darling. This defence is completely disingenuous, as extraction of water from the Barwon-Darling River during high flows and floods has little impact upon the

volumes passing downstream. It is the extraction of large volumes of water during periods of low flow that impacts on the river environment and water availability to downstream users.

The disallowance motion for proposed changes to the Basin Plan following the Northern Basin Review

The changes to the Basin Plan proposed by the Murray-Darling Basin Authority following the Northern Basin Review were not agreed by the Commonwealth parliament in February 2018 following the passing of a disallowance motion to those changes.

The proposed changes included, amongst other things, a reduction of the Sustainable Diversion Limit in the northern basin by 70 gigalitres (GL), from 390 GL to 320 GL, and improved management to safe-guard low flows, particularly in the Condamine-Balonne and Barwon-Darling Rivers.

Much of the media following the passing of the disallowance motion suggested that this would provide additional environmental flow of 70 GL throughout the Murray-Darling Basin system and to South Australia. This is not true.

The MDBA report 'Delivering a Healthy Working Basin' stated;

Page vi: 'Very little water from the north can reach the mouth of the Murray in the south, unless nature intervenes and brings heavy rainfall and big floods (providing only 18% of flows to the Murray Mouth under natural conditions). Northern catchments, where they are connected, will only be required to make a downstream contribution to the water needs of the Barwon-Darling through to the Menindee Lakes'

Page 22: 'Therefore, in the northern Basin, water will only be recovered to meet local environmental needs and those of the Barwon-Darling through to Menindee Lakes'

Further, the SDL Adjustment Stocktake Report August 2015 (Warren Martin and Graeme Turner) stated;

Page 24; 'The delivery of the Basin Plan will provide an extra 150 GL of inflow from the northern Murray-Darling Basin to the Menindee Lakes, however this water is not designated as additional environmental water after reaching Menindee. This additional volume was not intended to provide a windfall gain to downstream water users, however would provide some support to maintain reliability of supply. On condition that the reliability of supply of users downstream of Menindee and in the River Murray is not adversely affected, some of this additional water could retain its environmental status and provide an additional supply measure. This would require agreement from Victoria and South Australia.'

The additional water reaching the Menindee Lakes from the northern Basin is not designated as environmental water downstream of Menindee. It provides local environmental benefits and in the Barwon-Darling only.

After the additional water reaches the Menindee Lakes it may contribute to increasing reliability of water supply for downstream users. However, the increase will be negligible as, under current policy, no additional water from the northern Basin will reach the Menindee Lakes during periods of low flow.

Subsequently, as higher releases of water are made from the Menindee Lakes to meet environmental outcomes downstream, any additional inflows will be drawn upon quicker and will not provide any increase in security of water supply in the Lower Darling River.

Changed management of the Menindee Lakes water storage scheme to prevent foreshore erosion and the damage to Aboriginal burial sites

In the mid-1990's, it was agreed by the Murray-Darling Basin Commission to reduce the maximum storage levels in the Menindee Lakes to minimise foreshore erosion, and to prevent damage to sites of cultural significance, particularly Aboriginal burials.

The reduction in full supply levels reduced the storage volume of the Menindee Lakes from a maximum of 2,480 GL to 1,730 GL, representing a reduction in water storage of approximately 30%. There is potential during floods to surcharge the lakes for flood mitigation, but this water is subsequently released quickly so that lake levels return to nominal full supply levels.

The Lower Darling Horticulture Group acknowledges that the operational changes made at the Menindee Lakes in the mid-1990's are not considered in the Terms of Reference for the Murray-Darling Basin Royal Commission.

However, the Group considers it appropriate to bring this to the attention of the Commission to demonstrate the cumulative impacts that recent policy and operational changes, made for the benefit of the natural and cultural environment or for the greater public good, have contributed to the reduction of security of water supply in the Lower Darling River.

Increased releases from the Menindee Lakes to provide environmental outcomes downstream of the Darling River.

In the past two years, the releases of environmental flows from the Menindee Lakes at the request of the Commonwealth Environmental Water Office and MDBA has been in volumes that, by far, exceed the volumes recovered for environmental purposes in the Lower Darling.

This results in the total volume of the Menindee Lakes being drawn down much quicker than has occurred previously. The total storage volume reduces to the 480 GL drought reserve far quicker and more frequently than has previously occurred.

In addition, the flow rates required for the environmental releases exceed the outlet capacity of individual lakes within the Menindee Lakes, and consequently water is released from two or more lakes simultaneously.

The consequence of this release pattern is that when the 480 GL drought reserve for NSW is reached, much of the water is effectively 'dead storage' in Lake Menindee and Lake Cawndilla. Under the existing infrastructure of the Menindee Lakes storage scheme, most of this water is not available for release to the Lower Darling River.

In 2015-2016, the release of large volumes of water for the environment from the Menindee Lakes, to provide environmental benefits in the Murray River downstream of Wentworth was a significant factor in the Lower Darling River running dry for an extended period. During this period, the river was reduced to a series of toxic, stagnant pools.

When used for domestic purposes, contact with the water caused major health problems including skin and eye infections and illness in children. This was reported on the ABC 'Lateline' program in November 2017.

High releases of water from the Menindee Lakes for environmental purposes, while legal under the Murray-Darling Basin Agreement, reduces water availability for the Lower Darling. This not only impacts on the environment of the river with high salinity, blue-green algae outbreaks and fish kills but also on the water users and communities that depend on the river.

2015 Children bathed in river water suffered Scalded Skin Syndrome & continuous conjunctivitis

These outcomes are contrary to the objectives of the Basin Plan.

The Menindee Lakes Water Savings Project

In November 2017 the Murray-Darling Basin Ministerial Council agreed to a suite of Sustainable Diversion Limit (SDL) projects that would contribute 605 GL of water savings and/or SDL offsets. This would reduce the volume of water that would otherwise have to be recovered from the acquisition of existing water entitlements but would provide equivalent environmental outcomes.

The Menindee Lakes Water Savings Project, included within the suite of projects is estimated to contribute up to 106 GL of water savings and/or SDL offsets.

A component of the Menindee Lakes Water Savings Project is to reduce the NSW drought reserve from 480 GLL to 80 GL, providing for stock and domestic purposes only. The Business Case for the Project clearly states that to achieve the savings/SDL offsets will require the removal of high security water demand from the Lower Darling River.

In recent meetings with the NSW Department of Industry – Water and the Murray-Darling Basin Authority, it has been agreed by these agencies that there is no future for permanent plantings on the Lower Darling River.

The Basin Plan (Basin Plan Section 7.15 – Contribution to adjustments from supply measures) provides that the supply contribution of SDL offset projects (supply measures) must be calculated on the basis of conditions including that:

- there are equivalent environmental outcomes; and
- any detrimental impacts on reliability of supply of water to the holders of water access rights are offset or negated.

The Lower Darling Horticulture Group (LDHG) have been working with the NSW and Commonwealth Governments for over three years in developing a structural adjustment package that would enable irrigators with high value permanent plantings on the Lower Darling River to remove these and to transition to agricultural enterprises requiring a less secure water supply.

The LDHG are aware that the consideration of such an adjustment package is not within the Terms of Reference of the Murray-Darling Basin Royal Commission.

However, the LDHG would submit that the agreement to, and implementation of the Menindee Lakes Water Savings Project should only be allowed to proceed when the detrimental impacts on the reliability of supply to the holders of water access rights on the Lower Darling have been offset or negated.

Conclusion

The LDHG would seek that the Murray-Darling Basin Royal Commission acknowledge the reduced inflows to the Menindee Lakes from the Northern Basin has had significant water quality, environmental and economic impacts on the Lower Darling River and the communities who rely on its water.

These impacts are being exacerbated by increased releases from the Menindee Lakes to meet the environmental objectives of the Basin Plan. The impact on existing irrigation enterprises on the Lower Darling by the Menindee Lakes Water Savings Project, which is an agreed SDL offset project, will be further exacerbated to the extent that high value irrigated permanent plantings, worth tens of millions of dollars, will be unviable.

The Lower Darling Horticulture Group will support a Basin Plan that balances the environmental, social and economic objectives. However, it believes that the Plan should not proceed where it has such a detrimental impact on family farms to the extent that there continued productivity and viability is unviable. This is the case in the Lower Darling River.

The Lower Darling Horticulture Group submits to the Murray-Darling Basin Royal Commission that it should recommend that;

i. Environmental entitlements recovered in the northern basin will only meet local environmental needs and those of the Barwon-Darling River through to the Menindee Lakes,

ii. Small, environmentally significant flows across the northern basin, particularly in dry times, should be protected from extraction for annual crops until the environmental needs of the river downstream, and the needs of higher value permanent plantings on the Lower Darling River have been met,

iii. The volume of environmental flow releases from the Menindee Lakes should not exceed the volume of water recovered for the environment in the Lower Darling River,

iv. No environmental releases should be made from the Menindee Lakes when the management of the storage scheme is in NSW control and the residual water is providing drought reserve,

v. The Menindee Lakes Water Savings Project, which is an agreed SDL offset project, should only proceed when the detrimental impacts on the reliability of supply to the holders of water access rights on the Lower Darling have been offset or negated.

There is a constant stream of media calling for additional flows to be provided into South Australia under the Basin Plan.

However, the Lower Darling Horticulture Group considers that the delivery of environmental flows under the Basin Plan is already having a significant detrimental impact on the health and productivity of the Lower Darling River and on the health and economic interest of the communities that depend on the river downstream of the Menindee Lakes.

The LDHG submits that the Basin Plan should not be implemented where it incurs these impacts, which are completely contradictory to the objectives of the Basin Plan.

Members of the Lower Darling Horticulture Group would be pleased to discuss the issues raised in the submission or to provide any further information that you may require. We would certainly be available to meet with, or give evidence at hearings conducted by the Royal Commission.

Yours sincerely,

Rachel Strachan
Lower Darling Horticulture Group