

**Submission  
No 76**

## **INQUIRY INTO WATER AUGMENTATION**

**Organisation:** Murray Valley Private Diverters

**Date received:** 14 August 2016

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# MURRAY VALLEY PRIVATE DIVERTERS (INC)

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**NSW Parliament Legislative Council  
General Purpose Standing Committee No. 5  
Inquiry into the augmentation of water supply for rural and regional New South  
Wales  
Submission: August 2016**

## **Introductory Statement:**

Murray Valley Private Diverters (MVPD) represents irrigation interests for direct pumpers, trusts and private water delivery organisations in the Southern Riverina.

MVPD coverage in the NSW Murray Valley extends from Tocumwal to east of Swan Hill and includes the Murray, Edward and Wakool River systems.

Since 2010, Shire Councils, Murray Valley businesses, irrigation organisations, communities and members of MVPD have documented their concerns that Australia has embarked on water policies for the Southern Murray Darling Basin that will reverse water security benefits achieved from previous Governments investments in major public water infrastructure.

Water shares in the Hume and Dartmouth Dams in Southern NSW and Northern Victoria are being significantly changed under the Federal Water Act 2007 and the Murray Basin Plan to prioritise water resources to the environment and ensure an increased share of the water resources to South Australia.

Decisions have been based on political responses during the Millennium Drought, accompanied by poor science and bureaucratic failings.

There has been no cost benefit analysis of the short and long term affects on Australia's national interests and no analysis of previous water recovery programs for the environment. These include but are not limited to the Murray CAP; the Living Murray (2002), the National Water Initiative (2004)

MVPD encourages this inquiry to examine how political decisions on the water are compromising water security for NSW and reducing the capability of existing storages to service human and industry needs both now and into the future.

Executive Officer  
Louise Burge

## Terms of Reference:

### **a) Investigate the requirement for a water equation (demand and supply out to the middle of this century) for rural and regional New South Wales**

In assessing future water demand and supply for rural and regional New South Wales, the (NSW) Government is encouraged to assess how Federal or State policies on the environment are affecting water security in NSW. In particular, examine ways to achieve and enhance environmental outcomes through methods that do not undermine previous Governments investment in water security.

Australia population is expected to reach 31 to 41 million by 2056. (ABS)

Australian Federal and State Governments have no clear policies or direction on how to augment water supplies to meet population growth or any future demands associated with Federal or State Government policies for growth in food production.

Instead there has been a systematic political response to drought and environmental campaigns resulting in decreases to water security and a reversal of existing social and economic benefits from major water storage systems in the Southern Basin.

### **Water Act 2007 – Murray Darling Basin Plan:**

The Murray Darling Basin Plan is the most significant piece of public policy affecting water security in NSW, with particular affect on the Murray Valley.

During the Millennium Drought, advocacy groups successfully argued the Murray River, the Lower Lakes and Coorong were dead and dying and Governments must secure more water for their environments.

In 2007, the Federal Government announced a \$10 billion program to recover water for the environment. That figure was extended to the \$12 billion in 2012.

The Federal Water Act 2007 and the Murray Darling Basin Plan sets new Sustainable Diversion Limits (SDL) which guides the recovery of 2750GL of additional water to be transferred to the environment. In 2012 a further 450GL was added to the Basin Plan bringing the total of water recovery proposed under the Water Act 2007 to 3200GL.

This is despite the Murray Darling Basin Authority (MDBA) stating that 58% of flows currently remain in the environment and that only 42% is extracted for the environment, human or agricultural needs. Irrigation use comprises 90% of the 42%.<sup>1</sup>

Basin Plan water recovery targets for the environment are additional to environmental benefits already achieved for the Murray River through: <sup>ii</sup>

- Prescribed State Water Shares (Vic, NSW, SA) including the supply of human, irrigation, environmental and conveyance flows
- Murray CAP on extractions (1995)
- Barmah Millewa (1993) environmental entitlements
- Lake Moira restoration works
- Living Murray (2002)
- National Water Initiative (2004) – Planned environmental water (new Water Sharing Plans)
- River Bank (2005)
- NSW Wetland Recovery Program (2005- 2010)
- Water for Rivers (Snowy and Murray Rivers) (2002)

There has been no cost benefits analysis of these programs prior to a decision to acquire more water. Despite the absence of such information, the MDBA developed the Murray Darling Basin Plan (2012) which guides further Government investments to increase the environments share of water storages and river flows.

*Table 1 – Environmental water entitlements (note: flood events & other environmental flow factors not included)*

<b>Water Recovered to 2009 prior to the Basin Plan</b>	<b>Basin Plan SDL targets (Water recovered to 2019)</b>	<b>Basin Plan: Water recovered post 2019</b>	<b>Total water recovered for the environment</b>
<b>823 GL</b>	<b>2750GL</b> <b>Note: (2289GL is to be recovered from the Southern Basin)</b>	<b>450GL</b>	<b>4023GL</b> <b>Note (capacity of Hume Dam 3038GL)</b>

The majority of water to be recovered for the environment is to meet new ‘end of system’ flow targets for the Coorong, Lower Lakes and Murray Mouth. Flow targets to South Australia have guided the total volume and from which valleys the majority of water will be recovered.

Of the 2750GL to be removed from agriculture, 2289 GL is to be sourced from agriculture in the Southern Basin.

Of the 2750GL to be recovered for the environment, 2000 GL is to flow over the barrages in SA on a three year rolling average (95% of years) and 1000 GL in 100% of years. For comparison purposes, this equates to approximately 2/3 thirds of the capacity of the Hume Dam.

End of system flow targets are very specific in the Basin Plan and cannot be compromised through other water recovery methods such as Sustainable Diversion Adjustment Mechanism (SDL) projects. Projects put up to the MDBA for assessments have to adhere to 'limits of change' defined to protect Basin Plan objectives for the Coorong, Lower Lakes and Murray Mouth (CLLMM).

In responding to the terms of reference *Water Equation – Demand and Supply*, it is important to consider whether it is cost effective and common sense to continue the MDBA's strategy to use precious fresh water reserves as the sole solution to address adverse environmental outcomes as a result of estuary conversion in 1939.

In 1939 the construction of 7.6km of barrages converted the former Murray estuary into a freshwater lake system. 90% of the natural tidal prism that maintained the integrity and openness of the Murray Mouth was permanently removed. Only 11% of the former Murray estuary remains.

Pre barrage construction, the tidal prism was approximately 16,900 ML twice daily. Today the only marine influence on the Murray Mouth to the sea ranges from 643 ML to 2200 ML. <sup>iii</sup>

With little marine influence on the Mouth to stop sedimentation and substantial changes in SA to the natural flows from the Coorong, the Basin Plan seeks to replicate historical estuarine conditions using freshwater from the Murray River.

Instead of recognising cause and effect of environmental decline in South Australia, Australia will spend in excess of \$12 billion on a Basin Plan that will not deliver sustainable solutions to the Coorong, Lower Lakes and Murray Mouth (CLLMM)

On environmental grounds, estuary conversion of this nature would not be permitted today. Consistent with this, the loss of 90% of South East of South Australia wetlands and redirection of flows away from the Coorong directly out to sea, would also not be permitted.

- Historic surface and sub surface flows from South East of South Australia to the Coorong – are now diverted away directly out to the Southern Ocean (SA Drainage Schemes)
- Construction of 7.6km barrages have caused permanent sedimentation in the Murray Mouth
- Lake Alexandrina Operating protocols limit Murray River flows releases to the 11 % estuary to maintain water levels in Lake Alexandrina at 0.75AHD primarily for amenity values.

Scientific studies such as former Murray Darling Basin Commission (MDBC) commissioned report (2000) *River Murray Barrages – Environmental Flows – An evaluation of environmental*

*flow needs in the Lower Lakes and Coorong (A Jensen, M Good, P Tucker; M Long) - identified a range of measures to enhance environmental outcomes for the CLLMM.*<sup>iv</sup>

This report looked at environmental benefits to be gained through improved management of the Lower Lakes, including:

- enlargement of the remnant estuary
- realignment of the Mundoo Barrage
- Automation and improved operations of the barrages

None of the infrastructure measures or localised management options were included in the MDBA's decisions on the Basin Plan.

In June 2010, South Australian Government produced a report *Securing the Future – A Long Term Plan of Management for the Coorong, Lower Lakes and Murray Mouth.*<sup>v</sup>

The MDBA accepted the objectives in the South Australian plan *Securing the Future* to increase flows down the Murray River as the primary mechanism to stop sedimentation build up in the Murray Mouth and achieve improved environmental outcomes for the Coorong and Lower Lakes.

In May 2010, the South Australian Government technical report – *Development of Flow Regimes to Manage Water Quality in the Lower Lakes, South Australia (2010/5)*<sup>vi</sup> also guided Murray Darling Basin Authority decisions.

After accounting for local extractions, evaporation, barrages releases and other local uses, the report recommended **2850GL** of fresh water flows from the Murray River would be required to achieve SA salinity target.

The MDBA Basin Plan set **2750GL** as the water recovery target and included the salinity targets for Lake Alexandrina as proposed by the South Australian Government.

- MDBA salinity target for the former estuary (Lake Alexandrina) i
  - 1000EC 95% of years
  - 1500EC 100% of years.

To achieve and maintain the 1000 EC, the SA Government and the MDBA have ignored all other contributing factors to salinity readings in the lake. These include but are not limited to:

- When Goolwa and Tauwichee Barrages gates are open, reverse sea flows can re enter the lakes during southerly swell and/or wind conditions
- Local conditions including wind borne salt, natural barrage seepage, coastal dune seepage and natural salt conditions that should be expected from the 1939 building of the barrages which converted the former estuary into shallow freshwater storage lakes.

- Localised salts within the environments of the former estuary

To achieve the flow targets down the Murray River of the magnitude and timing the MDBA propose, there will be third party impacts on riparian landholders and other businesses (eg tourism), water entitlements holders and riparian landholders.

The MDBA have ignored the natural capacity of the Murray River and natural fault lines that constrain the flow volumes downstream of the Murray River Cadell Tilt when setting “end of system flow’ targets.

The Basin Plan will:

- Impact on water availability for Agriculture and future population growth
- Compromise NSW Government’s 30% productivity target for agriculture by lack of irrigation water in the Murray Valley
- Reverse water security benefits of the Hume and Dartmouth Dams in the Southern Basin
- Reduced capacity for NSW to meet potential water availability challenges as a result of Climate Change

**NSW Department of Primary Industries: Agricultural target**  **30%**

The Murray Darling Basin Authority (MDBA) describe the Murray Darling Basin as Australia's most important agricultural area, producing over 40% of Australia’s agricultural produce and generating around \$15 billion per year for the national economy.

NSW Primary Industries contribute \$12 billion to the national economy. NSW Government Department of Primary Industries policy for agriculture aims to increase agricultural production by 30%.

While State and Federal Governments identify the importance of agriculture, there is inconsistent policy planning to achieve NSW and Federal agricultural objectives.

Australia is spending close in excess of \$12 billion to reduce the reliability of its major water storages with long term negative effects on agriculture. Contrary to public and political perception, the Murray Darling Basin Plan will make irrigation in the NSW Murray Valley less secure. In drought, the reliability of allocations on water entitlements will be further restricted.

The adverse affects of the Basin Plan on agriculture productivity will continue to grow as future demands for water resources will mean agriculture’s share is further reduced. New urban water and extractive industry demands will have to compete in the substantially reduced share currently used for agriculture in existing water storages.

## **The NSW Government draft Riverina and Murray Regional Plan:**

The Plan targets:

- A growing economy supported by productive agriculture and sustainable use of natural resources
- Growing the regional cities of Albury, Wagga Wagga and Griffith
- A protected environment and a community resilient to natural hazards and climate change
- Increase the region's resilience to natural hazards Climate change poses significant risk for the region's ecosystems, agricultural productivity, and the sustainability of rural communities.

In December 2014, the NSW Government stated climate projections identified altered rainfall patterns including a hotter and drier climate, more intense bushfires, droughts and floods to 2050 and beyond.

The Federal Government Water Act 2007 and the Murray Darling Basin Plan will adversely affect the NSW Governments proposed Riverina and Murray Regional Plans. The Basin Plan will result in:

- less water available to produce food in a drier climate
- less water to combat more intense bushfires (Basin Plan targets will concentrate environmental flow releases in the non fire risks seasons of late winter early spring) with corresponding reduction in flows in smaller creek and river systems later summer to early autumn)
  - Reduced water availability to fight fires
  - less water to sustain ecosystems throughout warmer summer months
  - less water to sustain rural communities
- Increase the risks of major floods
  - Basin Plan aims to increase current Murray River regulated heights between Hume Dam and Yarrawonga from 25,000 ML/day to 40,000 ML/day.
  - Hume Dam Environmental flows releases will then be timed (piggy backed) on unregulated flows from the Victorian mountain tributaries entering the Murray River below Hume Dam
  - There is a high risk strategy with no capacity for errors.
  - MDBA original flow targets under the Basin Plan were strongly rejected but many remain in place. The MDBA state..... "*we will learn as we go*"

The terms of reference (a) raise the option to investigate the need for a water equation (supply and demand out to the middle of the century) for rural and regional Australia.



Such an investigation is critical and must be robust enough to assess any risks from current water policies and what impacts policies are having on current and future water supplies in NSW.

The investigation should identify what additional environmental benefits are to be achieved over and above the 58% of water the Murray Darling Basin environments already benefit from.

In addition, it will be important to assess what benefits the environment receives from all waters in the Murray River systems, including that delivered for environmental, irrigation and human purposes.

This submission draws attention to the National Water Commission-- Australian Environmental Water Management Report (2010) which states:

“Water can be used for multiple benefits temporally and spatially, and is normally ‘used’ more than once. Therefore, the complexity in defining and accounting for environmental water, is that **environmental, economic and social benefits are derived from the same volume of water.**”

The combined effect of the Murray Darling Basin Plan, no major investments in new water storages or urban recycling, will result in a continued reliance in the Southern Basin on the Murray River and the existing capacity of its headwater storages.

This is unsustainable.

### **Recommendations:**

- Conduct an environmental benefit analysis on the Living Murray and National Water Initiative with particular reference to environmental provisions in current NSW Water Sharing Plans
- NSW seek an amendment to the Federal Water Act 2007 to indisputably give equal balance to the triple bottom line i.e. Social (people), Economic and the Environmental values
- NSW to support an independent investigation of the accountability, performance and independence of the MDBA with emphasis on the basis and validity of its conclusions and recommendations to Government in the development and implementation of the Murray Darling Basin Plan.
- NSW progress a full cost benefit analysis of the Murray Darling Basin Plan policies on the Lower Lakes and Coorong and their impacts on the social, economic and environmental affects to the Murray Valley
- NSW Government assess inconsistencies in policy positions for agriculture

## **b) Examine the suitability of existing New South Wales water storages and any future schemes for augmentation of water supply for New South Wales, including the potential for aquifer recharge**

NSW is the largest land area in the Murray Darling Basin and is the location for the majority of Australia's southern major water storages.

These dams have provided major social, economic and environmental benefits to all Australians.

NSW Water Storages in the Southern Basin have not been poorly designed or managed and the Millennium Drought should not be cause of major policy changes to how the resource is shared.

Prior to 2000, the former Murray Darling Basin Commission consisted of experienced water managers and engineers whose expertise ensured that during the recent Millennium drought, waters from Australia's Southern storages continued to provide water for human, industry and to the environment. Water managers are to be congratulated on their foresight and planning that enabled towns and industry and the environment to be sustained through this difficult and protracted drought.

The extent and severity of the Millennium drought however could not sustain full allocation on irrigation entitlements and this is an accepted situation by NSW and the irrigation sector. Australia's main southern water storages do not have the capacity to hold provide water on an annual basis and have sufficient reserves for a ten year drought

At the height of the Millennium drought (2006 on), full entitlements flows could not be maintained to South Australian irrigators nor could full capacity of the Lower Lakes be sustained. This should have been seen as consistent with the severity of protracted drought and not a failing of water management, over allocation or over extraction by irrigators.

During such droughts it is normal for NSW Murray General Security irrigation allocations to be significantly reduced or at zero %.

The Federal political response to the Millennium Drought (Basin Plan) will now transfer significant water rights in the Southern storages from New South Wales to South Australia, primarily through the transfer of irrigation entitlements to environmental entitlements.

Of the 2750GL to be recovered for the environment, 2000 GL is for the specific objectives established in the Basin Plan for the Coorong, Lower Lakes and Murray Mouth in South Australia.

2000 GL is to flow over the artificial barrages in the Lower Lakes out to sea.

The transfer of water entitlements to the environment as a result of the Murray Darling Basin Plan will reshape Australia's Murray Valley food bowl, permanently reversing Australia's long term economic investment and resource planning, developed by previous generations.

At the heart of the proposed changes, are social and political responses, to a number of perceived issues.

- the Murray River is dead and dying and there are imperatives to restore the ecological health of the Basin
- Flows of an additional 'minimum 2000 GL' out the Murray Mouth will result in a 'healthy' river
- the Murray Mouth, Lower Lakes and Coorong ecological problems have resulted in over extraction of waters from the Murray River
- the Murray Darling Basin waters are over allocated
- re-plumbing the Basin can drought proof the nation
- returning water to the environment will give irrigation communities more certainty

This submission argues that the above statements cannot be substantiated or verified and the MDBA acceptance of such positions in its deliberations for the Basin Plan, has caused loss of confidence in the integrity of the Murray Darling Basin Authority.

Refer Appendix A & B

- Appendix A: Southern Riverina Irrigators – Water Planning and the Environment (2011)
- Appendix B : Southern Riverina Irrigators additional correspondence Senate Rural and Regional Affairs and Transport Committee (2013)

To adequately examine the suitability of current water storages for the future, it is important for this committee to assess what policies are undermining the capacity of existing storages to meet current and future water demands.

NSW water security is being compromised by poorly researched policies for the environment. This submission does not argue against protection for the environment. Murray Valley Private Diverter (MVPD) have been key supporters of additional environmental flows in the Edward and Wakool River systems and has been active in many regional environmental programs.

NSW is compromising its major water storages in Southern NSW by its failure to adequately protect the interests of NSW Murray in Federal and interstate negotiations on the Basin Plan.

## **Opportunities to enhance the environment without compromising water security**

NSW Water Sharing Plans currently provide significant protection for the environment.

The purpose of a water sharing plan is:

1. to protect the fundamental environmental health of the water source
2. to ensure that the water source is sustainable in the long-term
3. to provide water users with a clear picture of when and how water will be available for extraction

Environmental flow rules are based on the following river flow objectives that set out 12 aspects of flow considered to be critical for the protection or restoration of river health, ecology and biodiversity.

1. Protect natural water levels in pools of creeks and rivers and wetlands during periods of no flow
2. Protect natural low flows
3. Protect or restore a proportion of moderate flows, ‘freshes’ and high flows
4. Maintain or restore the natural inundation patterns and distribution of floodwaters supporting natural  
6 wetland and floodplain ecosystems
5. Mimic the natural frequency, duration and seasonal nature of drying periods in naturally  
7 temporary  
7 waterways
6. Maintain or mimic natural flow variability in all rivers
7. Maintain rates of rise and fall over river heights within natural bounds
8. Maintain groundwater within natural levels, and variability, critical to surface flows or  
ecosystems
9. Minimize the impact of in-stream structures
10. Minimize downstream water quality impacts of storage releases
11. Ensure river flow management provides for contingencies
12. maintain or rehabilitate estuarine processes and habitats

In addition to these environmental protection measures a number of other strategies and assessments can occur. These should have been included before the MDBA set new flow targets for the environment under the Basin Plan.

### **Recommendations:**

- Analysis of additional benefits from water already acquired for the environment through the Living Murray, National Water Initiative and other programs in Southern NSW
- Review the appropriateness of the science and data the MDBA relied upon to determine the health of the Murray River and Coorong, Lower Lakes and Murray Mouth when setting ‘end of system’ flow targets in South Australia
- Identify the validity of the MDBA’s assessment of ‘in valley target’ for water recovery in the Murray Valley in the Basin Plan. (refer NSW Water Sharing Plans points, environmental flow rules 1 – 12)
- Analysis of benefits to the environment from the supply of irrigation water and regulated dams and river flows in the Murray & Edward Wakool Systems to NSW and SA – (refer

National Water Commission Report (2010) – “**environmental, economic and social benefits are derived from the same volume of water**”

- Review the appropriateness of Murray River Loss and Dilution flows with special emphasis on the science/relevance of the 1980s SA Additional Dilution Flow triggers.
  - rule introduced in response to the Salinity Audit and modelled Murray River salinity predictions in the mid 1980s. (note Salinity Audit: modelled predictions on salinity are no longer considered accurate)
  - Salinity trigger rules are not determined by actual salinity readings, but by storage levels in Hume and Dartmouth Dam and Menindee lakes( Menindee Lakes storage =1300 GL) Hume = 1000GL) and Dartmouth =1000 GL)
  - When dam levels are reached and rule is activated it cannot be switched off until Menindee levels have reduce to such an extent that NSW resumes management control
  - Review the appropriateness of other baseline rules for loss and dilution flow rules to SA
  
- Review the MDBA’s reliance on freshwater flows from NSW southern storages as the primary mechanism to address environmental issues in the Coorong, Lower Lakes and Murray Mouth
  
- Review the MDBA’s Sustainable Diversion Adjustment Mechanisms (SDLs)
  - enable greater recognition of non flow options to enhance the environments in the Murray River
  - Amend the MDBA’s SDL scoring criteria to remove the ‘limits of change’ that limit non flow options to meet environmental outcomes in the Coorong, Lower Lakes and Murray Mouth
  - Include capacity in the SLD environmental equivalence test for NSW to put forward recognition of environmental benefits from flood events, irrigation, stock & domestic and urban water flows, conveyance water and supplementary flows not accessed by license holder in the Southern Basin
  - Enable a partial restoration of surface and sub surface flows from the South East of South Australia Drainage Schemes to be redirected back to the Coorong
  - Increase flow from the Upper South East Drainage & Flood Mitigation Scheme to the Coorong by removing the original Federal Government funding consent conditions that limits of return flows to no more than <40,000 ML
  - Review the MDBA’s proposals for pre requisite policy measures affecting the Murray Valley

### **c) Review the NSW Government's response to the recommendations of the June 2013 report by the Standing Committee on State Development on the adequacy of water storages in New South Wales**

It is widely considered that the resources that individuals and organisations commit to Government Inquiries has historically proven to result in few changes being implemented by Government.

Such inquiries do provide additional communication pathways through submissions and invitation to address committees that should enhance the NSW Governments capacity to make informed and cost effective decisions.

The Standing Committee on State Development on the adequacy of water storages in NSW made some relevant and practical recommendations. These include:

**Recommendation 7 Page 81** That the NSW Government review the environmental flow allocations for all valleys in New South Wales and make representations to the Commonwealth Government for it to review the environmental flow allocations for New South Wales valleys in relation to the Murray Darling Basin Plan.

**Recommendation 9 Page 82** That the NSW Government clarify with the Commonwealth Government the NSW Government's liability for environmental water releases made under the Murray Darling Basin Plan that inundate private land, in time to feed into the process of developing the water sharing plans that must comply with the Plan and be enacted by 2019.

**Recommendation 13 Page 111** That the NSW Government make representations to the Commonwealth and South Australian Governments to initiate a review of the current management of the lower lakes of the Murray Darling Basin. This review should focus on returning the lakes to an estuarine system by building barrages upstream rather than at the mouth, thereby reducing the volume of water currently required and improving the productive and environmental outcomes for New South Wales.

The NSW Government response has however not met community expectations in the Murray Valley on a number of important issues;

#### **Recommendations:**

- Implement recommendation 7, 9 & 13 of the Joint Standing Committee Report on the adequacy of NSW Water Storages
- NSW Government incorporates local knowledge and genuine consultation in its decisions on water policies

**d) Examine the 50 year flood history in New South Wales, particularly in northern coastal New South Wales, including the financial and human cost**

The MDBA environmental flow objectives set in the Murray Darling Basin Plan will cause elevated flooding risks in the Southern Basin Murray Valley region.

In the Murray Valley, the MDBA aims to amend Murray River operating heights to:

- Increase the frequency, timing and duration of minor to moderate bank full events
- Create ‘small over bank flows’
- Increase the frequency of minor to moderate flood events
- Permanently raise the regulated height of the Murray River
- Amend current regulated legal easements between Hume Dam and Yarrawonga weir from 25,000 to 40,000 ML/day
- Time propose regulated release flows between Hume and Yarrawonga with unregulated flows from the Victorian tributaries to create significantly higher flows below Yarrawonga Weir to the Wakool Junction

In the Goulburn Valley (Vic) the MDBA aims to amend Goulburn River operating heights to:

- Increase the frequency, timing and duration of minor to moderate bank full events
- Create ‘small over bank flows’
- Permanently raise the regulated height of the Goulburn River
- Time releases from Eildon Weir (Vic) to meet new flow heights in the Murray River

These two key river systems both have major flooding impacts on the Murray Valley (NSW).

Communities have warned the MDBA, the Federal and NSW Government that MDBA proposals to raise river heights will cause additional flooding risks. Warnings have been documented through submissions, meetings, media and personal representations and tours since early 2010.

Parliament of Australia: Senate Standing Committee on Rural and Regional Affairs and Transport Hansard – Management of the Murray Darling Basin Inquiry included the following statement:

Ms Jody Swirepik, Executive Director, Environmental Management, Murray-Darling Basin Authority (Hansard November 2012) stated:

*“As Dr Dickson said, there are environmental outcomes we were trying to achieve and desirable flow regimes that we thought were linked to achieving those outcomes. We have made an assessment across the whole of the basin with that in mind. We set the environmental outcomes*

*and desirable flow regimes from a purely environmental point of view—what we would like to actually achieve. We knew right at the very beginning that some of the flow regimes we were identifying, which we know are good for the environment, are actually quite large floods. Within our full suite of indicators, for instance, 125,000 on the Riverland-Chowilla floodplain is a big flood in that part of the world. The floods in 2010-11, I think, got up to 93,000 and they flooded some towns on the way down. We knew that there were a suite of those indicators which were affected by the current constraints in the system. Even where some of the constraints could be addressed, we still would not achieve those large flow regimes—and we did not actively target them when we did the modelling process because we knew they were unachievable.” However, for transparency's sake we have reported on the full suite of those indicators and that has led to some of that view about not meeting enough of that suite of indicators.*

Despite members of the MDBA being questioned on flooding risks at the above inquiry and subsequent Federal Government inquiries, the MDBA has continued with its water recovery targets and its high water flow environmental targets for South Australia.

The NSW Murray and Edward Wakool River Systems extend from the Hume Dam to Tooleybuc (NSW) near Swan Hill (Vic)

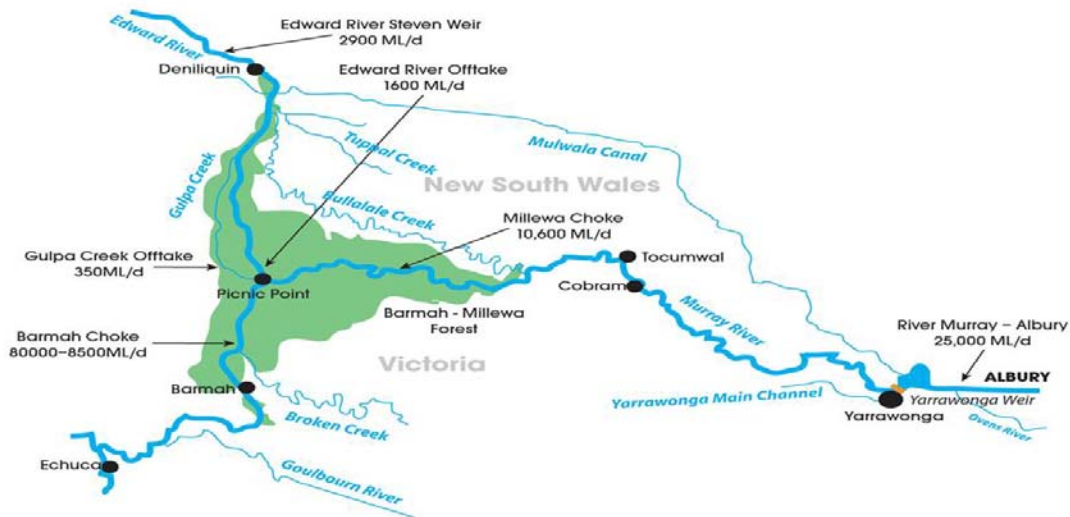
Approximately 25,000 years ago a major geological fault blocked the westerly path of the Murray River creating a new river and floodplain system to the North West which is now known as the Edward Wakool river system. The Murray River broke away to the South flowing through to Echuca and on to South Australia.

The Cadell Fault has direct influences on water movement in the Murray and Edward River systems. The fault line affects the Murray River under regulated river conditions and outside the irrigation season in times of higher river or flood flow events.

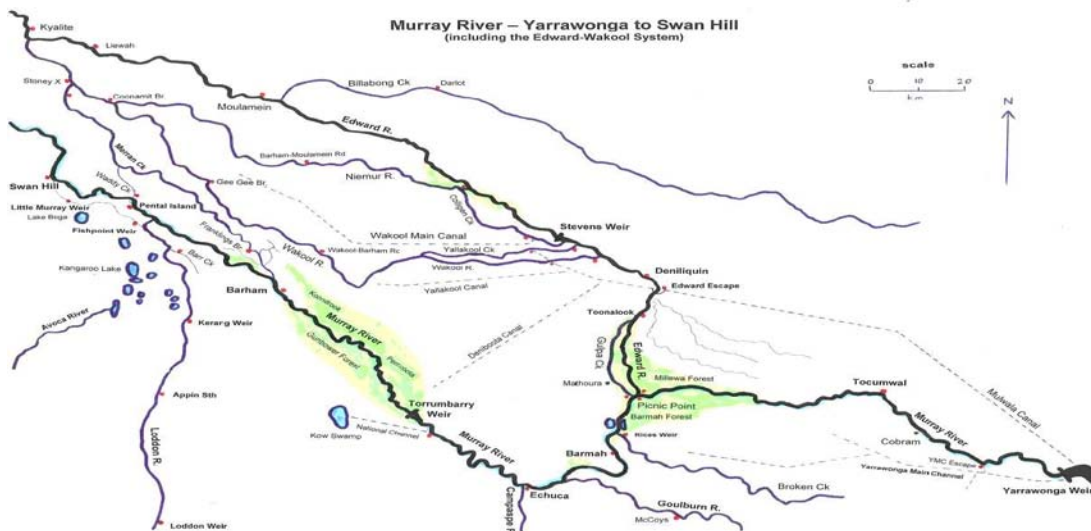
Under regulated conditions the ‘narrows’ (Barmah choke) limits flows in the Murray Channel to approximately 8000 ML/day. This section of the Murray River is only 27m wide and 2 metres deep.

Just upstream the Millewa Choke has a natural river bank capacity of 10,500 ML/day. Some additional flows can be facilitated by opening and closing forest regulators that allow water to disperse down smaller creeks and flood runner systems.





In non regulated, high flow or flood events, significant volumes of water leave the Murray River and move north west into the Edward Wakool System before merging back into the Murray River. In major floods the Goulburn River flows can stop the Murray River southward flow and up to 83.3% of flood waters can be pushed back northwards in to the Edward and Wakool River systems.



Murray Valley riparian landholders are conscious of flooding risks in wet years and have extensive knowledge of the systems capacities and risk factors. To date this continues to be ignored by the MDBA and even within sections of the NSW Government.

The Federal Government, the MDBA and the NSW Government were made aware of these risks but it took from early 2010 to 2013 to get the MDBA to acknowledge even some of those risks.

In early 2013 the States instructed the MDBA to undertake a Constraints Management Strategy. The MDBA's report was released in November 2013 and the report identified the issues of delivering environmental flows was more complex than the MDBA had previously considered. The MDBA report focussed on the need for more investigations in seven river reaches in the Basin.

In the Murray Valley, a Yarrawonga to Wakool Junction Constraints Advisory Group was established. It advised the MDBA for two years on issues of concern.

The MDBA's second Constraints Annual Progress Report released in 2014 was submitted to the Federal and State Governments. In reference to Yarrawonga to Wakool Junction River Reach, the MDBA misled the Federal and State Governments on safe and practical flow scenarios.

The report continued to prescribe high flow targets for the Murray River, the same flow targets that the Yarrawonga to Wakool Junction Constraints Advisory Group had rejected. The MDBA refused to correct their reporting error through either reprinting the report or providing a letter of correction to the State and Federal Governments

In 2016 the NSW Government took over management of the Constraints issues. There were public statements by the NSW Government that constraints management process would be managed differently and would be an improvement from the MDBA. This has not eventuated.

### **Recommendations:**

- NSW Government fully recognise stakeholder concerns in relation to flooding risks posed by the MDBA environmental flow targets for the Murray River
- NSW Government ensures the influence of the Cadell Fault on water passage for the Murray and Edward Wakool River systems is fully understood by all levels of Government and new flows do not exceed to levels that cause elevated flooding risks
- NSW Government ensure that the MDBA environmental flow targets for the Goulburn River (Vic) and the Murray and Edward Wakool system fully factor in cumulative risks
- NSW Government recognise the value of local knowledge and incorporate it into all decisions on Constraints Management Issues
- NSW Governments fully embraces the value of 'localism' and builds decision processes on terms that meet the needs and expectations of stakeholders

**e) Examine technologies available to mitigate flood damage, including diversion systems, and the scope of infrastructure needed to support water augmentation, by diversion, for rural and regional New South Wales**

In the Murray Valley, the capacity to manage or mitigate flood damage has to be divided between natural events and man made decisions elevating the risks.

Natural flooding events are part of the landscape and while significantly damaging to individuals and local economies, are difficult to prevent in certain circumstances.

However given known parameters of risks, the NSW Government must consider flooding risks in the management of major water storages and its decisions related to MDBA environmental flows.

For the Murray River this means assessments of any releases from the Hume Dam together with potential unregulated flows from Victorian Tributaries entering the Murray below the Hume Dam.

To avoid high risks flooding events below Hume Dam from the Ovens River, the building of a new water storage at the headwaters of the Ovens River (proposed Buffalo storage) would provide significant environmental water management benefits and flood risks benefits for areas downstream. Proposals for this dam have been in discussions for decades , but no action has been taken.

The Buffalo storage could provide more flexibility in managing environmental flows with reduced flooding risks in the Murray and Edward Wakool system.

This submission draws the committee's attention to Government policies that are enhancing flooding risks in the Murray and Edward Wakool river systems.

To mitigate flooding risks in this region, it is vital that the NSW Government accepts local knowledge and understanding of flooding risks. This is even more critical given that engineering or flooding experience no longer is within Government departments.

In the Murray Valley, the Murray Darling Basin Plan will result in the NSW Government facing additional flood liability risks.

Communities have requested greater involvement in the development of water policies and environmental water plans. To date it has partially acknowledged that risk and has taken over consultation for the Constraints Management Strategy from the MDBA.

However a major failing is that the MDBA and NSW bureaucrats and consultants are still pursuing unrealistic environmental flow targets for the Murray Valley section of the Murray River.

Affected landholders have expressed continued willingness to participate in discussions and the design of solutions to facilitate additional environmental flows at levels that are safe, practical and where third party impacts are fully mitigated.

The NSW Government needs to incorporate the expertise of local riparian landholders in farming communities whose knowledge and records can extend over the generations in water policies.

Such discussions will be jeopardised unless the NSW Government commits to developing a genuinely partnership based approach to designing realistic flow levels and mitigation options.

### **Recommendations:**

- Ensure that NSW is responsible for the Constraints Management strategy for the entire section of the Murray River as it affects NSW (Hume to Yarrowonga and the Yarrowonga to Wakool Junction)
  - Currently it is proposed the Victorian Government will manage Hume to Yarrowonga section of the Murray River &
  - NSW Government will manage the next section below (Yarrowonga to Wakool Junction)
  - This will ensure that decisions in Victoria will be made in isolation of direct involvement with affected stakeholders in NSW.
  - Flood events created in the Hume to Yarrowonga reach will have greater impact in NSW than Victoria
  
- NSW Government commits to the concept of localism to avoid a repeat of the MDBA failure on constraints
  - Refer to **Attachment C** (diagram of constraints)
  - NSW Government commits to a process that builds trust and confidence in decisions by enabling affected parties to have full participation in the decisions including how the process of Constraints will be investigated and managed; and what flows will be agreed to by affected parties and Governments
  
- NSW Government only agrees to higher Murray River flows if :
  - Agreed flows are fully acceptable to affected parties
  - All adverse third party impacts are fully funded and can be mitigated
  - Flows do not cause elevated flooding risks

- NSW Government does not endorse MDBA targets for Hume to Yarrowonga if those targets cause elevated flooding risk in the Yarrowonga to Wakool Junction river reaches
  - NSW maintains or close to the existing legal easements of 25,000 ML to 40,000 ML/day Hume to Yarrowonga
- NSW Government recognises that some environmental flow provisions can be passed through private irrigation structures but the cumulative impact of all flows in a region must be accounted for.
- NSW Government review its support for the Victorian Government SDL project (Hume Dam Airspace) as a contribution to water recovery targets under the Basin Plan. This proposal may pose additional flooding risks for NSW. There has been no consultation with affected stakeholders, no flood risk assessment.

**f) Examine social, economic and environmental aspects of water management practices in New South Wales and international jurisdictions, including the following case studies:**

- i. Broken Hill town water supply/Menindee Lakes system**
- ii. South Western NSW water management practices**
- iii. North Western NSW water management practices**

NSW Government and irrigation stakeholders had invested considerable resources and experience in developing robust system of water management in the Southern Basin.

The system of annual allocation on entitlements has served social, economic and environmental values well in times of low flow, moderate flow and high flow seasonal conditions. Environmental values were further protected through the Murray CAP on extractions, the Barmah Millewa Allowance, Living Murray, the National Water Initiative and other programs.

The capacity of water management systems to still deliver to communities during the Millennium Drought was testament to the investments of Government and communities in water planning.

Irrigators and irrigation dependent businesses however require a period of stabilisation in water management.

The Federal Water Act 2007 and the Basin Plan however brought in major changes where a raft of new decisions will cause further impacts and costs to businesses. This includes water charging rules, water trading rules, water recovery and environmental flow rules and potentially additional flooding risks.

A common risk is that decisions on water and the environment are made primarily for political purposes. Decisions are often made in the absence of sound science, local knowledge or assessment of current provisions or reasons why existing management practices were originally put in place.

Despite promises to stakeholders that NSW would improve its community consultation and engagement, this has not eventuated. Consultation in the Southern Basin is now regarded as unacceptable and there is no transparency on decisions.

NSW Government has reversed its former collaborative decision making with stakeholders to a departmental driven process. This has high risks as department changes means less experienced staff with resulting failures in public policy and risks assessments for decisions.

The loss of engineers and specialist experience in the departments has compounded these failures.

For Murray Valley issues there has been little or no consultation on:

- review of NSW Water Sharing Plans.
- NSW Sustainable Diversion Adjustment Projects prepared under the Basin Plan
- NSW Pre Requisite policy measures prepared under the Basin Plan
- NSW recent announcement on the Broken Hill Pipeline
- Basin Officials Committee (BOC) decision to raise the regulated height of the Murray River

Decisions in NSW on the implementation phase of the Murray Darling Basin Plan, including Sustainable Diversion Limits offset projects and Pre requisite Policy Measures (rule changes) all will have major social and economic impacts on Murray Valley industries and businesses.

NSW recent announcement on the Broken Hill town water supplies is a further example of Government failures. Currently Broken Hill town water supplies are sourced from the Menindee Lakes. A media announcement informed Murray Valley Private Diverters that Broken Hill's Water supplies were now to come out of the Murray Valley water resources potentially compromising reliability and availability of the NSW Murray Resource.

There was no consultation, no assessment of impacts and no transparency around the decision. It is still unclear where NSW Government will source the entitlements or from which resource area.

When such decisions are combined with other decisions on SDL offset projects and Murray River rule changes to meet the MDBA targets for the environment, the cumulative impacts can be severe on the reliability of entitlements and/or impacts on riparian landholders.

The Murray Darling Basin Plan will cause the highest social and economic impacts in the Murray Valley.

The Basin Plan has caused a loss of approximately 30% of irrigation entitlements to the region and the Wakool Shire alone has assessed that over 50% of irrigation entitlements have now been bought or transferred out of the region.

The impacts on riparian landholders and businesses from proposed environmental flows have never been factored in any social and economic reports.

The NSW Government has not adequately considered the impacts on Murray Valley communities, nor the mental health state of those that are left facing higher irrigation fees, reduced reliability of supply and constant risks from political imperatives in urban areas.

This submission strongly recommends that a complete review of the social and economic impacts to the Murray Valley is initiated by the NSW Government as a major priority.

The MDBA's Regulatory Impact Statement (2012) for the Basin Plan identified that the impacts of the Basin Plan will be modest. Their assessments were based on the following:

- Water for the Future Program (water would be purchased, acquired from on farm efficiencies programs and/or through PIOP programs)
- Sustainable Diversion Adjustment Mechanisms (SDLs) projects

The RIS did not factor in any other impacts outside irrigators. It also did not factor in reliability impacts to irrigators (particularly those involved in smaller schemes or direct pumpers) from river operational rule changes or SDL projects.

The RIS did not factor in any impacts to riparian landholders from elevating Murray River levels as proposed by the Murray Darling Basin Plan.

### **Recommendations:**

- NSW Government re commit to genuine engagement, consultation and transparency with stakeholders on water policy development and water policy decisions
- NSW Government commission an independent social and economic assessment of current and predicted impacts of the Murray Darling Basin Plan on NSW

**g) the efficiency and sustainability of environmental water being managed by different State and Federal Government departments and agencies h) the management, appropriateness, efficiency and reporting of: i. inter-valley transfers**

As a matter of priority, the Federal and NSW Governments need to review how they engage and consult with local people and affected stakeholders organisations. There are many benefits if a more collaborative approach was taken in the development and implementation of Government policy.

The principle of localism needs to be incorporated at all stages, initial decisions, design phase and implementation. This is essential to reduce risks and maximise environmental outcomes.

Sadly examples where successful partnerships between, scientists, government and community have occurred, are often over shadowed by the negatives of failed policy areas or systems of bureaucracies that prevent more localised achievements.

The Murray Darling Basin Authority (MDBA) approach to developing the Basin Plan and setting unrealistic flow targets for the Murray River in the Southern Basin can be identified as a prime example of Government failures.

The Living Murray Perricoota Koondrook Forest enhancement project is also an example where had local information been acknowledged and incorporated, substantial project savings could have occurred. Instead, the project budget was doubled, design failures remain unresolved and the project cannot be implemented even today.

There are however, emerging opportunities if Governments can genuinely work with local people in managing environmental water. Importantly those most affected by the decisions must be regarded as higher priority for collaboration and consultation than those who have no direct impact from decisions.

**Federal Government:**

The Water Act 2007 is the overarching legislation for the establishment of the Murray Darling Basin Authority and the subsequent development of the Murray Darling Basin Plan .

The newly formed Murray Darling Basin Authority (MDBA) was required to develop a new Murray Darling Basin Plan within a short political timeframe.

The MDBA had limited experience in managing the Basin's water resources and documented failures continue to cause social and economic damage to NSW Murray Valley communities and



the broader Murray Darling Basin. A review of the current structure and roles of the MDBA is required.

By 2015, the extent of concerns with the MDBA led to over 16 different organisations moving a motion of no confidence and major community meetings in the Southern Basin passing the following motions

1. The foundation stone of the Basin Plan - the 2007 water act must be amended, to indisputably give equal balance to the triple bottom line i.e. Social (people), Economic and the Environmental values, when considering various options and their associated consequences.
2. The community has lost confidence in the MDBA We request an independent investigation of the accountability, performance and independence of the MDBA with emphasis on the basis and validity of its conclusions and recommendations to Government in the development and implementation of the Murray Darling Basin Plan.

The Federal Water Act 2007 also set additional requirements such as the establishment of the ACCC to oversee issues of water trade and pricing rules. The ACCC was not adequately equipped to deal with the complexities of State water management issues and new requirements set by the ACCC resulted in additional costly red tape for no demonstrable benefit. Components of the ACCC's role are now to be referred back the states under an accreditation process.

The authority under estimated the social and economic impacts of the Basin Plan and the MDBA Regulatory Impact Statement of 2012 (RIS) can only be regarded as demonstrably inadequate and should be reviewed.

The MDBA Environmental Watering Plan are being established in isolation of stakeholders and this with the combined lack of experience in NSW is leading to major policy errors being recognised and /or corrected.

### **NSW Government:**

The NSW Government has an opportunity to improve consultation with communities on issues affecting their region. In addition, the current committee processes may need review to ensure greater inclusion of local stakeholders and directly affected parties (eg landholders).

There are however examples of positive engagement and consultation with stakeholders which can deliver collaborative and sustainable outcomes.

NSW Office of Environment and Heritage (OEH) has in more recent times developed an improved process of communication in the Murray Valley on specific water flow issues particularly involving constraints issues.

NSW OEH also has communications and partnerships in the Murray Valley for delivering environmental water through private infrastructure both on farm and via irrigation networks

At a recent OEH Workshop in Sydney (2016) case studies were put up to demonstrate the most effective way to achieve improved outcomes with environmental water. Successful case studies emphasised the benefits of working collaboratively with local people.

However within various components of NSW Department of Primary Industries (Water) and in OEH there remains significant gaps and failures with communications and consultation. There appears to be a disconnect between more locally based relationships and those centralised in Sydney or Canberra.

**NSW/MDBA Environmental Watering Plans** : NSW Government is participating in discussions with the MDBA on development of MDBA Environmental Watering Plans . There is no transparency with affected stakeholders or communities most likely to be impacted.

**Basin Officials Committee (BOC):** NSW has no transparent mechanism in place to ensure decisions at BOC have been discussed or considered in conjunction with affected stakeholders in the Murray Valley

**Ministerial Meetings (MINCO):** NSW has no transparent mechanism in place to ensure decisions at MINCO have been discussed or considered in conjunction with affected stakeholders in the Murray Valley

**NSW Department of Primary Industries (DPI Water):** NSW has no transparent mechanism in place to ensure DPI Water policy decisions been discussed or considered in conjunction with affected stakeholders in the Murray Valley

**SDL Adjustment Mechanism: (SDL):**

- NSW has no transparent mechanism in place to ensure DPI Water policy decisions on SDL Projects and Pre Requisite Policy decisions (PPMs) have been discussed or considered in conjunction with affected stakeholders in the Murray Valley
- NSW has no mechanism to ensure cross border projects being developed by the Victorian Government that directly affect NSW water supplies and /or public and private land are discussed or considered in conjunction with affected stakeholders in the Murray Valley

**Yarrawonga to Wakool Junction Constraints Advisory Group:** For over two years landholders and stakeholders provided advice to the MDBA in regards to constraints issues and

how they would affect MDBA proposed environmental flow targets in the Murray and Edward Wakool River systems as part of the Basin Plan. Local knowledge was ignored resulting in a further loss of confidence in the MDBA. When NSW took over management of constraints in 2015, despite promises to retain the group and improve relationships, this did not eventuate.

NSW Governments approach is reflective of community expectations and is contrary to promises made to people who had already lost confidence in the MDBA's process. To regain cooperation and trust, the concept of localism must be not be tokenistic

### **NSW Office of Environment & Heritage & NSW Department of Primary Industries (DPI Water)**

- Improve communications and knowledge between water sections of the two departments
- Build capacity and organisational culture to ensure improved communication, respect and partnership outcomes in water decisions
- (note: specific examples of concerns can be provided)

**Environmental Water Advisory Group (EWAG)** is a NSW appointed group to advise on the management of NSW Environmental Water. The group's formation is not representative of stakeholders and has a strong dominance of government agencies.

**Commonwealth Water Holder (CEWH):** has also established an advisory group in the Edward Wakool region. There was considerable confusion when calling for nominations between this group and an additional 'monitoring group'

### **Recommendations:**

- NSW establishes the principle of 'localism' in the development and implementation of water policies
- NSW Government work with the Federal Government to conduct an independent investigation into the MDBA, to review its structure, its lack of independence and its failure to address documented warnings on issues of concern.
- NSW Government reviews the appointment structure of the MDBA Board to ensure that NSW has the capacity to appoint suitably qualified representatives to protect water interest of NSW
- NSW Government re establishes engineering expertise as a key component for water management
- NSW Government improves its internal processes and includes direct consultation with stakeholders in the Murray Valley with decisions made by:
  - Ministerial Meetings (MINCO):
  - NSW Department of Primary Industries (DPI Water):
  - Basin Officials Committee (BOC):
  - NSW/MDBA Environmental Water Plans
  - Environmental Water Advisory Group (EWAG)

## References:

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<sup>i</sup> Murray Darling Basin Plan

<sup>ii</sup> NSW Department of Primary Industries: Water Reform in the NSW Murray Darling Basin, Summary of regional water reform and environmental water recovery in NSW 1996-2011

<sup>iii</sup> Southern Riverina Irrigators Submission Murray Darling Basin Plan (2011)

<sup>iv</sup> River Murray Barrages – Environmental Flows – An evaluation of environmental flow needs in the Lower Lakes and Coorong (A Jensen, M Good, P Tucker; M Long

<sup>v</sup> Securing the Future – A Long Term Plan of Management for the Coorong, Lower Lakes and Murray Mouth

<sup>vi</sup> South Australian Government Technical Report – Development of Flow Regimes to Manage Water Quality in the Lower Lakes, South Australian 2010/

Australian Bureau of Statistics 3222.0 - Population Projections, Australia, 2006 to 2101