



Department of
Primary Industries
Office of Water

Water reform in the NSW Murray-Darling Basin

Summary of regional water reform and
environmental water recovery in NSW **1996–2011**



Leading policy and reform in sustainable water management

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The NSW Office of Water manages the policy and regulatory frameworks for the state's surface water and groundwater resources, to provide a secure and sustainable water supply for all users. It also supports water utilities in the provision of water and sewerage services throughout New South Wales.

The Office of Water is a division of the NSW Department of Primary Industries.

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Edward River near Deniliquin in drought – 1912

INTRODUCTION

Water management in inland New South Wales has evolved in three distinct stages: the first stage, commencing at the beginning of the 20th century, focused on the need to secure water supply to enable settlement and to regulate the major rivers mainly through the construction of weirs to provide for town water supply, and the navigation necessary for transport and trade. Included in this era were the construction of Hume Dam and the regulation of Lake Victoria to secure water supply along the River Murray in New South Wales, Victoria and South Australia, together with the construction of a series of locks and weirs.

The second stage in water management began after World War II and continued until the late 1970s. The aim was to expand irrigation to foster economic development in inland NSW with the development of irrigation areas and districts, and the construction of major dams on the headwaters of most inland rivers in NSW. The Menindee Lakes water storage scheme in the far-west of NSW and the Snowy Mountains Hydro-electric Scheme that diverts water from the Snowy River into the Murray and Murrumbidgee River valleys in NSW were also constructed.

The third stage of water management from the early 1980s centred on the realisation that water resources had been fully allocated, including most of the major inland aquifers. Any further allocation of water rights would reduce the security of supply to existing users and the increasing extraction of water was a contributing factor to the decline in the health and productivity of our river systems. As a result, further licences allocating new water for commercial purposes were embargoed in the NSW basin.

During this period, NSW also undertook major capital works to pipeline open channel water delivery systems in the government-owned irrigation areas. This was followed in the 1990s by the privatisation of the irrigation areas supported by about \$190 million from the NSW Government for improvements to water delivery, drainage and on-farm efficiencies in irrigation areas.

In 1994, the Council of Australian Governments (COAG) agreed to wide-ranging water reforms, focusing on the need to manage water more sympathetically with the needs of the Australian environment, to ensure that water rights could move, by trade, to where they would generate the highest value, and to identify and recover the costs of water



Lake Jindabyne – Snowy Hydro Limited

supply and water management from beneficiaries. NSW was the first state to provide specific flows for the environment, to separate land and water rights, and to provide for Aboriginal commercial and cultural licences.

The National Water Initiative was signed in 2004 to build on the raft of reforms already under way, including a focus on interstate water trade. More recently, NSW has participated in the Commonwealth Government's 2008 Intergovernmental Agreement on Murray-Darling Basin Reforms and has provided information and technical support to the Murray-Darling Basin Authority in the development of an overarching Basin Plan.

Despite the recent commitment by the Commonwealth to water recovery to bridge the Basin Plan gap, the NSW Government has unilaterally or jointly invested in water recovery programs for a number of decades. Collectively these programs have returned around

860 gigalitres per year on average to the surface water environment within the NSW Murray-Darling Basin and the Snowy River, and re-allocated 942 gigalitres in the major inland aquifers to maintain environmental needs. Around 67 gigalitres of artesian water is also now saved each year through the highly successful Cap and Pipe the Bores program.

Most of the water recovered for the environment in NSW through these initiatives was completed pre-2009 and therefore the volumes are not counted in the water recovery targets of the Basin Plan.

INSTITUTIONAL WATER REFORMS

Privatisation of government-owned irrigation areas and districts

In 1995, the NSW Government completed privatisation of the five major irrigation areas and districts in southern NSW. This included the Murray and Western Murray Irrigation areas in the NSW Murray valley, the Murrumbidgee and Coleambally Irrigation Areas in the Murrumbidgee valley and the Jemalong Irrigation Area in the Lachlan valley. As part of privatisation, the NSW Government paid the irrigation corporations 'deferred maintenance' that enabled the corporations to invest in upgrading water supply infrastructure to best practice.

The NSW Government also contributed some \$190 million over 15 years to the irrigation corporations, with the latter and landholders to contribute another \$750 million over 30 years to implement land and water management plans. The plans were aimed at improved management of the irrigation areas to increase water use efficiency, reduce land salinisation, provide integrated drainage and reduce salt loads.

Murray-Darling Basin Cap on diversions

NSW has introduced management arrangements to limit extractions in each river valley to comply with the limits of extraction to 1993/94 levels of development that were agreed to at the introduction of the Murray-Darling Basin Cap in 1995.

Cap accounting commenced in 1997, and at the end of 2010/11 the cumulative diversions in all NSW river valleys reported for Cap purposes were in credit. Collectively diversions across all NSW river valleys are 3,582 gigalitres below what is allowed under the Cap.

| System | Long-term diversion Cap GL | 2010/11 Cap target GL | 2010/11 diversion GL | 2010/11 Cap credit GL | Cumulative Cap credit since 1/7/97 GL |
|--------------------------------|----------------------------|-----------------------|----------------------|-----------------------|---------------------------------------|
| Barwon-Darling / Lower Darling | 331 | 468 | 123 | 326 | 368 |
| Intersecting Streams | 3 | n/a | 3 | n/a | n/a |
| Border Rivers | 195 | 254 | 187 | 48 | 375 |
| Gwydir | 342 | 400 | 271 | 111 | 281 |
| Namoi/Peel | 243 | 381 | 275 | 106 | 246 |
| Macquarie | 444 | 648 | 178 | 409 | 757 |
| Lachlan | 306 | 131 | 89 | 33 | 207 |
| Murrumbidgee | 2,568 | 1,481 | 1475 | -345 | 684 |
| NSW Murray | 1,908 | 1,386 | 667 | 371 | 663 |
| TOTAL | 6,340 | 5,150 | 3,268 | 1,059 | 3,582 |

Full cost recovery of water management and delivery charges

Since 1997, bulk water charges have been determined by the NSW Independent Pricing and Regulatory Tribunal (IPART) for bulk water delivery by NSW State Water Corporation and for water management charges incurred by the NSW Office of Water.

In determining bulk water charges, IPART determines an efficient delivery service level for each activity, the proportion of costs for each activity that should be charged to licensed water users as direct beneficiaries, and the proportion of costs that should be charged to the Government as a community service obligation.

IPART charges are progressively moving along a pricing path to full cost recovery.

LEGISLATIVE AND POLICY WATER REFORMS

Water Management Act 2000

The key platform for water management in NSW is the *Water Management Act 2000*. The Act is the first legislation in Australia to specify the right of the environment to a share of the available water resources as a priority.

Key components of the *Water Management Act 2000* include:

- Separation of water rights from land
- Provision for Aboriginal cultural access licences
- Prioritisation of water for the environment
- Licences issued in perpetuity
- Statutory water sharing plans

Water sharing plans

Water sharing plans are being developed for all water sources throughout NSW in accordance with the *Water Management Act 2000*.

Each water sharing plan identifies the long-term extraction limit and reliability of consumptive use entitlements, the requirements of the environmental assets in each valley allowing water for these purposes, and articulates the trading rules and other outcomes sought for the water source.

Water sharing plans extend for 10 years. Ninety per cent of water use in NSW is now managed through statutory water sharing plans and plans for those not currently covered will be completed by 2013.

In developing the NSW policy for the National Water Initiative, it was recognised that towards the end of the period of a plan there would be less certainty about how much water would be taken back in the development of the next water sharing plan and the reduction in reliability of water supply for consumptive use.

To remove this risk, the NSW Government implemented a risk assignment framework that limited the volume that could be recovered from licensed users, without compensation, to three per cent. Any additional recovery would need to be funded or compensated by the government.

Aboriginal Water Trust

In 2000, the New South Wales Government established a \$5 million Water Trust for Aboriginal people in NSW.

The Government recognises that Aboriginal people should be encouraged and assisted to enter and participate in the commercial water market.

Where water is a core component to expand or establish an Aboriginal owned business then the Aboriginal Water Trust may assist with funding.

Achieving sustainable groundwater entitlements

Entitlements in the six major inland alluvial aquifer systems have been reduced to ensure the longterm sustainability of these important groundwater resources and to protect groundwater dependent ecosystems where these exist.

In these systems that include the Upper and Lower Namoi, Macquarie, Lower Lachlan, Lower Murrumbidgee and Lower Murray, the long term storage component and in most cases a proportion of the annual recharge has been protected for the environment.

NSW has committed \$55 million to the \$135 million Achieving Sustainable Groundwater Entitlements Program to provide assistance to licence holders and communities to adjust to lower entitlements.

Entitlements are being progressively reduced by 942 gigalitres over the term of the water sharing plans.

Corporatisation of Snowy Hydro Limited

In 2002 the Snowy Mountains Hydro-Electricity Scheme was corporatised to become Snowy Hydro Limited.

In the lead up to corporatisation, an inquiry into the environmental needs of the Snowy River and other montane rivers within the area of operations was undertaken. The outcomes that are written into the Snowy Water Inquiry

Outcomes Implementation Deed inform the water licence issued to Snowy Hydro Limited and managed by the NSW Office of Water.

A significant component of this licence is the requirement for Snowy Hydro Ltd to provide defined volumes of water into the Murray River and Tumut River valleys that contribute significantly to water availability in the Murray and Murrumbidgee valleys. The Deed also identifies the volumes of water to be recovered for environmental flow purposes in the Snowy and Murray Rivers.

In 2011, following an extended drought, amendments to the Snowy Water Licence were agreed between the NSW Office of Water and Snowy Hydro Ltd that provide for the maintenance of volumes of water in Snowy storages to be made available in a future severe drought.

WATER RECOVERY

Since the early 1990s and particularly following the agreement by New South Wales, Victoria and South Australia to implement a cap on diversions from the rivers and streams in the Basin at 1993/94 levels of development, NSW has initiated or been involved in projects and programs to recover water for the environment.

Collectively, these programs and projects in NSW have recovered over 700 gigalitres on average each year and returned this water to the river environment in the Murray-Darling Basin and about 150 gigalitres of water for the Snowy River.



Barmah-Millewa environmental allocation

In 1993, NSW and Victoria each agreed to commit 50 gigalitres a year for the environment of the Barmah-Millewa Forest in the Murray Valley.

In 2004, NSW and Victoria each committed an additional 25 gigalitres a year, subject to water availability.

Volumes are released from Hume Dam, consistent with agreed triggers to maximise environmental outcomes and has been used successfully on numerous occasions since 1998 to maintain bird-breeding events and to achieve extended duration and site specific flooding.

Reduced storage levels at Lake Menindee

The Menindee Lakes are a series of nine natural ephemeral lakes in far-west NSW that have been modified to provide a significant water storage scheme. Covering 453 square kilometers in a semi-arid environment where there is two metres net evaporation a year, the lakes are managed under the Murray-Darling Basin Agreement.

Significant changes to the management of the lakes have been implemented to protect the natural environment from severe erosion and to protect sites of significant cultural heritage. This included reducing the maximum storage volume by 375 gigalitres. This has returned on average, long term, 40 to 50 gigalitres per year to downstream flows that would otherwise have been stored for consumptive use in the lakes scheme.

Similarly, floods and releases to the Lower Darling River are managed to minimise flood damage to infrastructure but to also maximise environmental outcomes.



above - Regulators like this one in the Millewa Forest have enabled selective watering of the Barmah-Millewa group of forests.

below - The filling of Lake Cawndilla, April 2010: courtesy Barry Philp State Water Corporation

Seepage control works in Murray Irrigation

In 1995, as part of privatisation of Murray Irrigation Ltd, it was agreed that through the investment in channel seepage control works 30 gigalitres per year, on average, would be saved from transmission losses.

In 2000, 30 gigalitres was reduced from the Murray Irrigation Limited Operating Licence and returned to the NSW government for environmental flow purposes in the Murray Valley.

The Living Murray

In implementing the Living Murray program, NSW committed \$115 million toward recovering an agreed target of 249 gigalitres within the state.

NSW completed a number of water savings projects to contribute to this water recovery target, including:

| | |
|---|---------|
| Implementing the pipeline for the Great Darling Anabranch stock and domestic supply | 47.2 GL |
| Rehabilitating of Edward River wetlands | 7.1 GL |
| Recovering water from Poon Boon Lakes | 9.0 GL |
| Murray Irrigation Ltd supplementary water | 17.8 GL |

Over 221 gigalitres has been recovered from within NSW through the Living Murray projects.

Planned environmental water

In the development of water sharing plans throughout NSW, regional stakeholder committees identified priority environmental water needs of regional assets. Water sharing plans then provided for these water needs through environmental flow rules.

Rules-based water includes free passage of inflow through a dam (dam translucency), restricting access to supplementary flows until certain environmental outcomes are reached, or through environmental contingency water held in storage and released for purposes such as extending inflows into wetlands for fish breeding, fish passage, or water quality outcomes.

Collectively, NSW water sharing plans for regulated rivers within the Murray-Darling Basin have returned an additional 212 gigalitres each year on average, to the environment.

RiverBank

NSW RiverBank is a \$101.5 million environmental fund set up by the NSW Government to buy water for the most stressed and valued inland rivers and wetlands. Commencing in 2005/2006, RiverBank was the first program dedicated to the purchase of water licences for the environment in Australia.

About 87 gigalitres of water for the environment has been purchased, with funding to continue purchasing until 30 June 2012. In addition, another 34 gigalitres has been recovered via purchase and infrastructure projects with funding provided by the Commonwealth.



above - Constructing the anabranch pipeline in western NSW in 2006

below - NSW Wetland Recovery Program – open channel in the Gingham system

NSW Wetland Recovery Program

The NSW Wetland Recovery Program is a \$26.8 million program jointly funded by the NSW Government and the Commonwealth Government. During the course of the program from 2005 till June 2010, a total of nine gigalitres of environmental water was purchased. The program also invested in wetland research, management tools, wetland management plans, grazing projects, weed control and infrastructure projects to recover water and improve environmental water flow in the Gwydir Wetlands and Macquarie Marshes.

Under this program, the NSW Office of Water has also implemented the \$3 million Gingham Pipeline Scheme, which provides piped supplies to landholders along the Gingham watercourse and will save another 9.5 gigalitres for the environment.

Water for the Snowy River

In 2002, as part of the corporatisation of Snowy Hydro Ltd, the New South Wales Government and Victorian Government each contributed \$150m to recover water for the Snowy and Murray Rivers to enable additional environmental flows of 212 gigalitres and 70 gigalitres respectively by June 2012. The target for the Snowy is equivalent to 21 per cent of average natural flow at Jindabyne and the program is due for completion in June 2012.

This program of water recovery, which focused preferentially on water efficiency savings through infrastructure projects, was managed by a joint government enterprise known as Water for Rivers.

The Commonwealth Government subsequently committed an additional \$75m to recover 70 gigalitres that would be stored in Snowy Hydro storages for release for environmental purposes to the Murray River as well as committing an additional \$50m to Water for Rivers.

Peak releases of 12,000 megalitres a day from Lake Jindabyne into the Snowy River, 10 October 2011



Between 2002 and 2011, Water for Rivers projects within the Murray and Murrumbidgee valleys in NSW have recovered nearly 150 gigalitres:

| | |
|-------------------------------------|----------|
| Forrest Creek Stage 1 and 2 | 34.7 GL |
| Barren Box Swamp reconfiguration | 20.0 GL |
| Bungunyah-Koraleigh pipeline | 3.015 GL |
| Coonancoocabill wetland | 0.632 GL |
| Deniliquin golf club | 0.238 GI |
| Hay Private Irrigation District | 1.0 GL |
| Coleambally supply automation | 3.5 GI |
| Purchase (includes in NSW and Vic.) | 84.0 GL |

Lake Moira restoration works

In 1996 the NSW Murray Wetlands Working Group, supported by the Office of Water completed infrastructure works that excluded high regulated summer flows from Lake Moira in the Millewa Forest in the central Murray while allowing natural (usually winter-spring) flows into the lake.

Like many floodplain wetlands, the lake was degraded by continuous inundation altering its natural filling and drying regime. The work has reinstated a more natural hydrologic regime, and generated 2,027 megalitres of water savings from water that would have otherwise flowed into and evaporated from the lake over the summer months.

The work of the Murray Wetlands Working Group was recognised when it was awarded the 2007 Theiss National Environmental Prize. This project has demonstrated the importance of the drying cycle to ephemeral wetlands and the potential for generating water savings and reinstating natural hydrology where practical.

Pipeline NSW

The NSW Government and Commonwealth Government have jointly committed to the \$7 million Pipeline NSW project under the Australian Water Smart program to replace inefficient open channel stock and domestic and irrigation water delivery systems in central and northern inland rivers with piped systems and storage tanks and troughs.

The project is due for completion in 2012 and will recover about five gigalitres per year in water savings from reduced system and operational losses.

| | |
|----------------------------|----------|
| Barwon Channel Association | 1.488 GL |
| Lower Gwydir Scheme | 2.5 GL |
| Lower Lachlan (Noonamah) | 0.8 GL |



Pipeline to deliver fresh water for stock and domestic use

Cap and Pipe the Bores

Since 1991, the NSW Office of Water has been implementing a program of capping previously free-flowing bores that discharged into open bore drains, replacing these with efficient, purpose designed piped stock and non-potable domestic water supplies.

Since 1999, the program has been jointly funded by NSW and the Commonwealth through the Great Artesian Basin Sustainability Initiative (GABSI), with investment totalling \$77 million.

The program provides financial incentives to landholders to offset the cost of rehabilitating bores and installing efficient piped systems. In total:

336 free-flowing bores have been reconditioned or replaced

8,616 kilometres of bore drains have been decommissioned

15,600 kilometres of pipe have been installed

66,600 megalitres a year is now saved in the NSW portion of the GAB

Converting free-flowing bores to efficient piped water supply



ENVIRONMENTAL WORKS AND MEASURES

Since 1990, the NSW Office of Water and its predecessor agencies have been implementing programs that provide significant environmental and water quality benefits while not necessarily generating water savings.

These include salt management programs, river bank restoration programs, and projects that deliver improved environmental outcomes by the construction of water delivery infrastructure to get maximum environmental benefit using the same amount of water.

Salinity management through salt interception

As part of the Murray-Darling Basin salinity management strategy the NSW Office of Water has constructed and now operates and maintains a number of salt interception schemes throughout NSW.

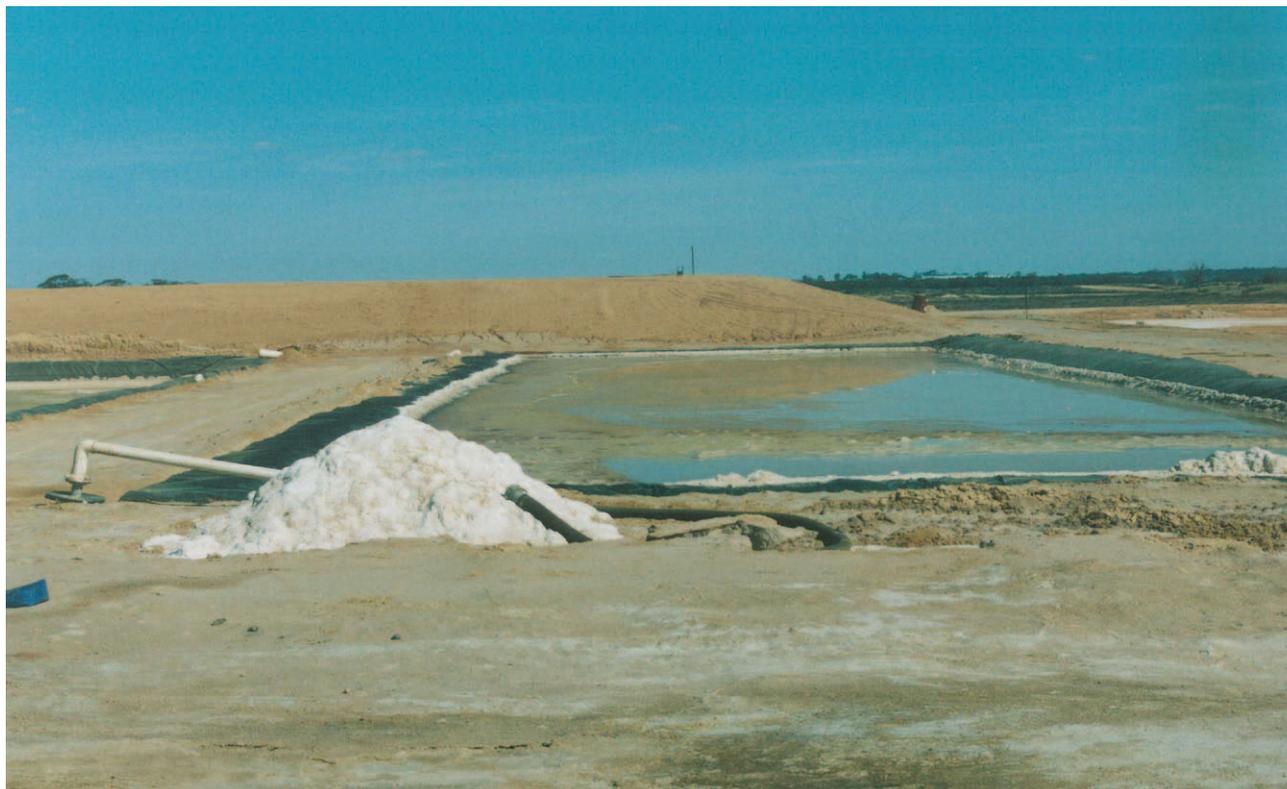
Salt interception schemes are large-scale groundwater pumping and drainage projects that intercept saline water flows.

Collectively, these schemes intercept 290 tonnes of salt per day that would otherwise enter the Murray-Darling Basin river system. This reduces the average salinity, measured at Morgan SA, by around 130 EC units on average.

Major salt interception schemes managed by NSW Office of Water include:

| | |
|-----------------|-------------------|
| Mallee Cliffs | 80 tonnes per day |
| Buronga | 85 tonnes per day |
| Upper Darling | 65 tonnes per day |
| Billabong Creek | 10 tonnes per day |

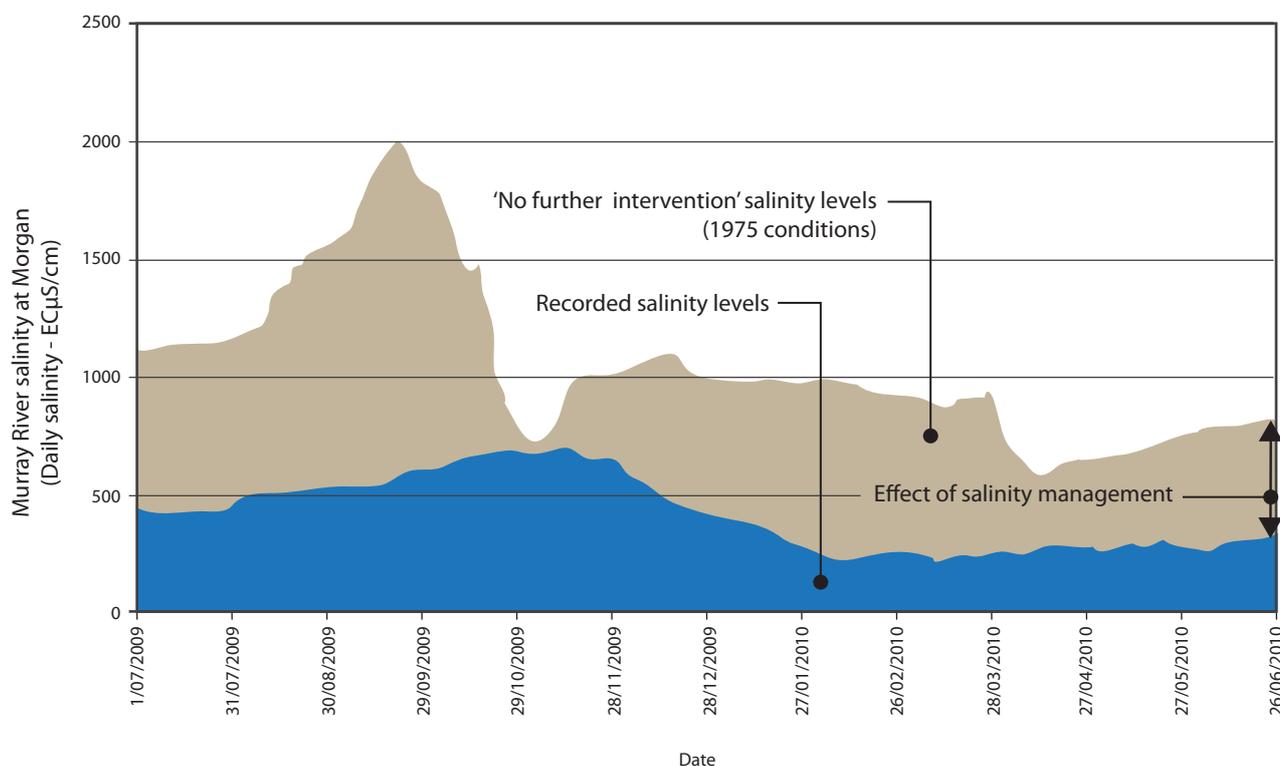
Salt is extracted from the highly saline groundwater at Buronga



In addition to state managed schemes, Murray Irrigation Limited manages the Wakool salt interception scheme that reduces the level of the shallow, saline water table to maintain productivity of 60,000 hectares of agricultural land. Western Murray Irrigation maintains the Curlwaa salt interception scheme that intercepts about 50 tonnes of salt from entering the Murray River each day.

Mean daily salinity levels from July 2009 to June 2010 compared to modelled salinity levels without salt interception schemes, improved land and water management actions and additional dilution flows ('no further intervention' scenario). The difference is assumed to be the effect of salinity management.

©MDBA Basin Salinity Management Strategy 2010



River bank restoration works programs

Since 2000, the Office of Water has undertaken erosion control and native revegetation of hundreds of kilometres of stream bank in the Swampy Plains and Upper Murray River downstream of Khancoban to Jingelic, the Murray River and its anabranches between Hume Dam and Lake Mulwala and the Tumut River downstream of Blowering Dam. This work provides significant benefits for improving riverine ecosystems and water quality. Combined, this work has a replacement value of some \$40 million.

Koondrook-Perricoota Forest Flood Enhancement Works

The Gunbower–Koondrook–Perricoota Forest adjacent to the Murray River in NSW and Victoria is Australia's second largest River Red Gum forest and is one of the six icon sites identified in the Living Murray program. Changed river flow regime, together with the recent extended drought, has reduced the ecological health and productivity of the forest.

The \$61 million Koondrook – Perricoota Forest Flood Enhancement Project is funded by the Living Murray Environmental Works and Measures program. The project aims to protect a core area of 16,000 hectares of flood-dependent forest.

The infrastructure works include regulators and levees that allow water to be diverted into the forest to simulate natural flooding while maximising flows back to the Murray River.

WHAT NEXT ?

Basin Plan

The most significant reform for water management in NSW in the coming decade will be the development and implementation of the Commonwealth's Murray-Darling Basin Plan, currently being prepared by the Murray-Darling Basin Authority (MDBA).

A key requirement of the Basin Plan is to identify the hydrologic needs of environmental assets and determine sustainable diversion limits.

The MDBA has indicated that the sustainable diversion limits set out in the Proposed Basin Plan will require a reduction in current levels of surface water extraction across the Basin of 2,800 gigalitres.

The reductions include the need to meet in-valley needs of environmental assets and to contribute to a 'shared reduction' to meet downstream needs in the northern basin (which extends across NSW and Queensland) and the southern basin (which extends across NSW, Victoria and South Australia). How much of the shared reduction is to be recovered in each river valley, or even each state, has not yet been identified by the MDBA or Commonwealth department.

| Northern Basin | Remaining local reduction (GL) | Whole Northern Basin shared reduction (GL) |
|-----------------------|--------------------------------|--|
| Gwydir | 0 | 0 |
| Namoi | 5 | 143 |
| Macquarie-Castlereagh | 0 (1 GL in credit) | |
| Barwon-Darling | 0 (16 GL in credit) | |
| Border Rivers | 7 | |
| Intersecting streams | 0 (8 GL in credit) | 0 |

| Southern Basin | Remaining local reduction (GL) at July 2011 | Whole Southern Basin shared reduction (GL) |
|----------------|---|--|
| Murrumbidgee | 183 | 971 |
| Murray | 68 | |
| Lower Darling | 8 | |
| Lachlan | 0 | 0 |

The NSW government view is that, wherever possible, the recovery of water to meet the sustainable diversion limits should be through investment in infrastructure projects in preference to water entitlement buy-backs that remove water from production and reduce regional economic activity.

NSW State Priority Projects

In 2008, the NSW Government signed the Inter-Governmental Agreement on Murray-Darling Basin Reform. This agreement included the referral of some state powers in water management to the Commonwealth, including the creation of the Murray-Darling Basin Authority to prepare a Basin Plan, and the determination of water market rules and water charge rules charges for bulk water delivery to the Australian Competition and Consumer Commission (ACCC).

As part of the agreement the Commonwealth agreed to fund projects in NSW up to \$1.358 billion subject to due diligence. This included \$708 million for four state-run projects and a notional \$650 million to private irrigators for projects negotiated directly with the Commonwealth.

Following due diligence assessment by the Commonwealth Government, the state-run projects include:

| | |
|---------------------|---|
| Metering | \$221 million to install meters that meet proposed national standards |
| Farm modernisation | \$90 million project in northern NSW that will improve water use efficiency on-farm in these valleys. |
| Healthy floodplains | \$50 million to identify and assess the capacity of licensed floodplain harvesting structures in the north of NSW, to ensure no increase in floodplain harvesting and to enable the determination of licensed volumetric entitlements |
| Basin pipe | \$137 million to replace stock and domestic supplies, currently provided through open channels or natural creek systems, with pipelined water supplies. |

While collectively not fully using the \$708 million previously committed, the Commonwealth has agreed that the remaining \$208 million be reserved for other water efficiency projects developed within NSW.

These are to be funded consistent with the provision of future funding arrangements.

National partnership agreement on Water for the Future

This proposed agreement provides funding for further water efficiency projects that will contribute to 'bridging the gap' between current levels of diversion and the sustainable diversion limits proposed under the Basin Plan.

The agreement recognises that water use efficiency projects can recover water for the environment while maintaining or improving the productive use of water by industry, minimising impacts on regional industries and communities reliant on water-dependent industries and providing significant economic and social benefits, particularly during the construction stages.

However, all parties agree that while infrastructure projects return water at a higher cost per megalitre compared to a straight water licence buyback, they should still provide value for money. A value for money benchmark will be determined as a set multiplier factor applied to the market price of water. Infrastructure projects need to deliver water entitlement or offset sustainable diversion limits within the benchmark value.

Environmental Works and Measures Feasibility Program

The Commonwealth government has recently announced \$6 million funding to the states to undertake feasibility studies for projects that may allow environmental outcomes to be achieved more efficiently.

\$2 million has been committed by the Commonwealth Government to the NSW Government to undertake feasibility investigations into eight state-identified projects in NSW, including:

| | |
|---|----------------|
| Euston Lakes Restoration and Improved Water Efficiency | \$0.4 million |
| Upper Murrumbidgee Environmental Flow Enhancement | \$0.5 million |
| Nimmie-Caira System Enhanced Environmental Water Delivery | \$0.2 million |
| Piping Irrigation Demands | \$0.15 million |
| Burrendong Dam Environmental Flow Enhancement | \$0.2 million |
| Southern Macquarie Marshes | \$0.2 million |
| Efficient Delivery of High Priority Stock and Domestic Supplies | \$0.15 million |
| Modifying Weirs to Enhance Floodplain Inundation | \$0.2 million |

Further the Commonwealth government has agreed to invest \$4 million, of which \$1.2 million has been committed to NSW, to facilitate the identification of water efficiency projects by communities throughout the NSW Murray-Darling Basin.

Modification of Menindee Lakes

In the 1950s and early 1960s, the Menindee Lakes were connected by a series of levees, weirs, inter-connecting channels and regulators to create a water storage scheme. At full supply level, the lakes hold 1,998,000 megalitres and can be surcharged during floods to around 2,350,000 megalitres.

The lakes are managed by NSW under the Murray-Darling Basin Agreement and are critical in securing water supply for users in NSW, Victoria and South Australia in the southern connected Murray-Darling Basin. The lakes also provide town water supply for Broken Hill and Menindee and a vital cultural, tourism and recreational asset in far west NSW.

Over the past 20 years there have been many investigations to identify potential infrastructure and operational changes to reduce losses from the Menindee Lakes and potentially provide significant water efficiency savings that can be returned to the environment. The most recent of these has been the Darling River Water Savings Project. Details of this are available on the NSW Office of Water website www.water.nsw.gov.au.

The Commonwealth and NSW Governments have recently considered Option 1 identified in the Water Savings Project under a Memorandum of Understanding. While this option could potentially realise water savings of up to 180 gigalitres for the downstream environment, it would involve shutting down two of the lakes and requiring Broken Hill to rely on an aquifer recharge scheme for its town water supply. NSW found that this option would:

- reduce the reliability of supply to downstream users, particularly in extended dry periods
- significantly reduce the environmental and cultural values of the Menindee Lakes and other nationally important regional wetlands
- impose substantially increased costs for operations and maintenance of town water supply to Broken Hill.

The NSW Office of Water believes that are other infrastructure and management options that are cost-effective and meet the NSW requirements for the management of the Menindee Lakes.

The Office of Water will continue to work with the Commonwealth to progress these options which have the capacity to realise between 35,000 and 100,000 megalitres for downstream environmental purposes.

FURTHER INFORMATION

Visit the website at www.water.nsw.gov.au

