
Australian Government
MURRAY–DARLING
BASIN AUTHORITY
annual report 2013–14

Acknowledgement of the Traditional Owners of the Murray–Darling Basin

The Murray–Darling Basin Authority acknowledges and pays respect to the Traditional Owners, and their Nations, of the Murray–Darling Basin, who have a deep cultural, social, environmental, spiritual and economic connection to their lands and waters. The MDBA understands the need for recognition of Traditional Owner knowledge and cultural values in natural resource management associated with the Basin.

The approach of Traditional Owners to caring for the natural landscape, including water, can be expressed in the words of Darren Perry (Chair of the Murray Lower Darling Rivers Indigenous Nations) — *the environment that Aboriginal people know as Country has not been allowed to have a voice in contemporary Australia. Aboriginal First Nations have been listening to Country for many thousands of years and can speak for Country so that others can know what Country needs. Through the Murray Lower Darling Rivers Indigenous Nations and the Northern Basin Aboriginal Nations the voice of Country can be heard by all.*

This report may contain photographs or quotes by Aboriginal people who have passed away. The use of terms 'Aboriginal' and 'Indigenous' reflects usage in different communities within the Murray–Darling Basin.

ARA
AUSTRALASIAN REPORTING AWARDS

We received a silver Australasian Reporting Award for our 2012–13 report.

FSC ISO CERTIFICATION ECF ELEMENTAL CHLORINE FREE

This report has been designed by Giraffe Visual Communication Management and printed by New Millennium Print to environmental standards.

Cover image: Aerial image of Renmark and the River Murray (photo by Michael Bell)

The Murray–Darling Basin at a glance[1]

Fast facts

- over 1 million km² in total (14% of mainland Australia)
- Australia's 3 longest rivers
- over 40% of our agricultural produce and generates about $15 billion per year for our national economy
- >2 million people
- >46 Aboriginal Nations
- 16 Ramsar sites, 1 world heritage area, 6 icon sites, over 30,000 wetlands and largest river red gum forests in Australia

The tiles represent the percentage of different crops grown in the Basin, as well as the number of different animal species found in the Basin.

Some Aboriginal names for rivers

Millewa, Murrundi, Dhungala (Murray), Galare (Lachlan), Wambool (Macquarie), Murrumbidya (Murrumbidgee), Barka, Paaka (Darling), Barwum (Barwon), Nammoy (Namoi)

[1]Agricultural figures based on Australian Bureau of Statistics 2011–12 figures

Australian Government

MURRAY–DARLING BASIN AUTHORITY

Office of the Chief Executive

TRIM Ref: D14/40317

Senator the Hon. Simon Birmingham
Parliamentary Secretary to the Minister for the Environment
Parliament House
CANBERRA ACT 2600

Dear Parliamentary Secretary

It is my pleasure to present the annual report of the Murray–Darling Basin Authority (MDBA) for the year ended 30 June 2014.

This report has been prepared in accordance with the requirements for annual reports prepared by the Joint Committee of Public Accounts and Audit under s. 63 of the *Public Service Act 1999*.

The report provides an overview of this year's achievements which includes significant progress on implementing the Basin Plan.

Under ss. 214(1) of the *Water Act 2007*, the Chief Executive must, as soon as practicable, prepare and give to the Minister and to each other member of the Murray–Darling Basin Ministerial Council, a report on MDBA operations during that year. This annual report must include contents listed under ss. 214(2) of the Water Act that includes the analysis of the effectiveness of the Basin Plan.

In accordance with the Commonwealth Fraud Control Guidelines 2011, I certify that MDBA has prepared fraud risk assessments and fraud control plans, and has in place appropriate fraud prevention, detection, investigation, reporting and data collection procedures and processes that meet MDBA's specific needs. I certify also that I have taken all reasonable measures to minimise the incidence of fraud in the MDBA.

Under subsection 214(3) of the Water Act you are required to table this annual report in each House of Parliament within 15 sitting days after the day on which you receive it.

I also take this opportunity to acknowledge the dedication of MDBA staff and their continuing commitment to supporting the government's objectives.

Yours sincerely

Rhondda Dickson

Chief Executive

14/ 11 /2014

GPO Box 1801 Canberra ACT 2601 Telephone 02 6279 0470 Facsimile 02 6279 0133
Rhondda.Dickson@mdba.gov.au
www.mdba.gov.au

Contents

Overview

The Murray–Darling Basin at a glance i
Letter of transmittal ii
About us 2
Our performance snapshot 5
Our history 6
Our year at a glance 8
Chief Executive's review 12
Chief Finance Officer's report 14
The Authority 17
Executive team 18

Our performance

Chapter 1: Transboundary water management 21
Chapter 2: Restoring river and ecosystem health 39
Chapter 3: Knowledge into action 61
Chapter 4: Managing River Murray assets 73
Chapter 5: Management and accountability 97

Financial statements 129

Appendixes

A Governance bodies — meetings and outcomes 188
B Agency resource statement and resources for outcome 1 195
C Advertising and market research 198
D Ecologically sustainable development and environmental performance 199
E Communication products 202

Endmatter

Abbreviations and acronyms 204
Scientific names of plants and animals 205
Glossary 206
List of requirements 210
Index 213

About us

The Murray–Darling Basin Authority (MDBA) undertakes activities that support the sustainable and integrated management of the water resources of the Murray–Darling Basin in a way that best meets the social, economic and environmental needs of the Basin and its communities.

Our vision

To achieve a healthy working Basin through the integrated management of water resources for the long-term benefit of the Australian community.

Our mission

We lead the planning and management of Basin water resources in collaboration with partner governments and the community.

Our guiding principles

We approach our work in a way that captures our commitment to our vision. In our everyday work we adhere to the Australian Public Service Values and Codes of Conduct, meaning we are apolitical, impartial, professional, accountable, respectful, careful and diligent.

We value and support collaboration by:

- bringing people together to shape agendas
- working in partnership
- communicating clearly
- listening to other viewpoints
- dealing with others with courtesy
- making our decisions and processes transparent
- being adaptive and willing to learn
- taking a balanced, equitable and objective approach to dealing with issues and interests.

Our role

The Murray–Darling Basin Authority was established under the Commonwealth *Water Act 2007*[2] as an independent, expertise-based statutory agency. We advise a six-member Authority, of which our Chief Executive is a member, about Basin-wide strategy, policy and planning.

The primary roles of the MDBA include:

- preparing, implementing and reviewing an integrated Plan for the sustainable use of the Basin's water resources
- operating the River Murray system and efficiently delivering water to users on behalf of our partner governments
- measuring, monitoring and recording the quality and quantity of the Basin's water resources and the condition of associated water dependent ecosystems
- supporting, encouraging and conducting research and investigations about the Basin's water resources and dependent ecosystems
- disseminating information about the Basin's water resources and dependent ecosystems
- engaging and educating the Australian community about the Basin's water resources.

We work in collaboration with other Australian Government agencies, Basin state governments, local governments, regional bodies, industry groups, landholders, environmental organisations, scientists, research organisations and Murray–Darling Basin communities, including Aboriginal communities, and the broader Australian community.

2 Unless otherwise indicated, all Acts referred to in this publication are Commonwealth Acts.

Strategic planning and progress

The MDBA's funding is outlined in the Australian Government's Portfolio Budget Statements. We manage our performance against a single outcome:

> equitable and sustainable use of the Murray–Darling Basin by governments and the community including through development and implementation of a Basin Plan, operation of the River Murray system, shared natural resource management programs, research, information and advice.

To provide a more accurate indication of our performance against this outcome, our deliverables and key performance indicators are measured against our four program outcomes:

- transboundary water management (pages 21 to 37)
- river and ecosystem health (pages 39 to 59)
- knowledge into action (pages 61 to 72)
- River Murray asset management (pages 73 to 96).

Our 2013 to 2016–17 corporate plan, sets out our strategic direction, goals and objectives. In establishing this Plan, we took into account our annual risk assessment, risk management and fraud control plans. The Corporate Plan also includes provisions for risk treatments and measures to ensure delivery of environmental water and measures to ensure timely implementation of the Basin Plan.

Our governance and agency structure

The MDBA is part of the Environment portfolio, and reports to its minister. The MDBA's governance comprises:

- the Commonwealth Minister for the Environment, as at 30 June 2014, the Hon. Greg Hunt MP
- the six-member Murray–Darling Basin Authority
- the Murray–Darling Basin Ministerial Council
- the Basin Officials Committee
- the Basin Community Committee.

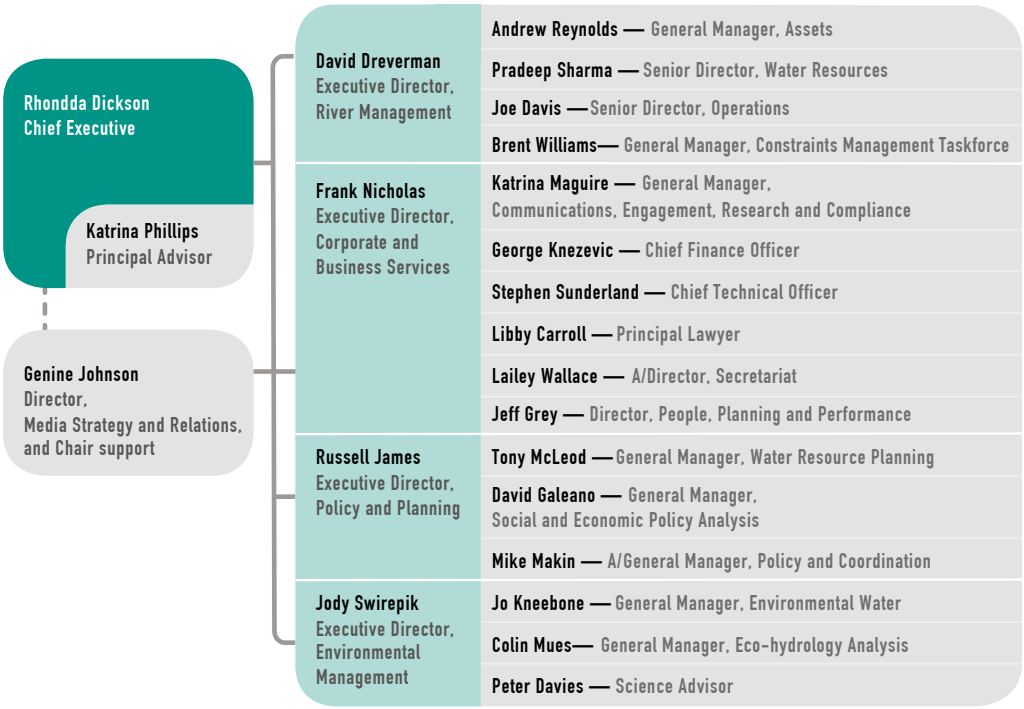
The relationship between these governance bodies is described in Appendix A, page 188.

The MDBA consists of the six member Authority, including the Chief Executive, and MDBA staff. The Murray–Darling Basin is managed through a partnership of the Australian Government and the governments of New South Wales, Victoria, Queensland, South Australia and the Australian Capital Territory (the Basin states).

During 2013–14, the MDBA structure was based around the following key program areas (see Figure i):

- Policy and Planning Division
- Environmental Management Division
- River Management Division
- Corporate and Business Services Division.

Figure i MDBA organisation structure as at 30 June 2014



Our staff

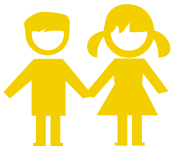
As at 30 June 2014 we had 283 ongoing and 19 non-ongoing staff. More information can be found in Chapter 5 'Management and accountability' pages 110 to 116.

Our performance snapshot

Completed the strengthening of the Hume Dam wall, on time and under budget

Published the constraints management strategy 2013–2024

Over **145** community meetings were held across the Basin



Over **22,000** school students participated in our programs

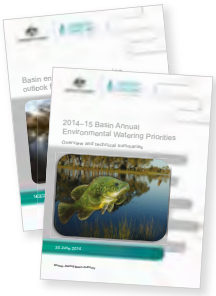
The Basin Plan Implementation Committee was established to monitor, review and make decisions for implementing the Basin Plan, and the Basin Community Committee was renewed

Water quality and salinity targets met and published on our website

Developed the SDL adjustment ecological equivalence method

Over **1,570** people installed the Run the river app on their devices

Delivered **326.6 GL** of The Living Murray environmental water



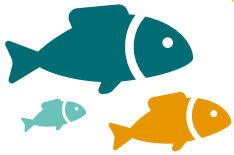
Published **2nd** annual environmental watering priorities and the Basin environmental watering outlook

Diverted about **397,739** tonnes of salt from the River Murray

Completed environmental water management structures at Hattah Lakes, Koondrook–Perricoota Forest and Gunbower Forest

Annual inspection of River Murray assets finds that all have achieved good or high standard of maintenance

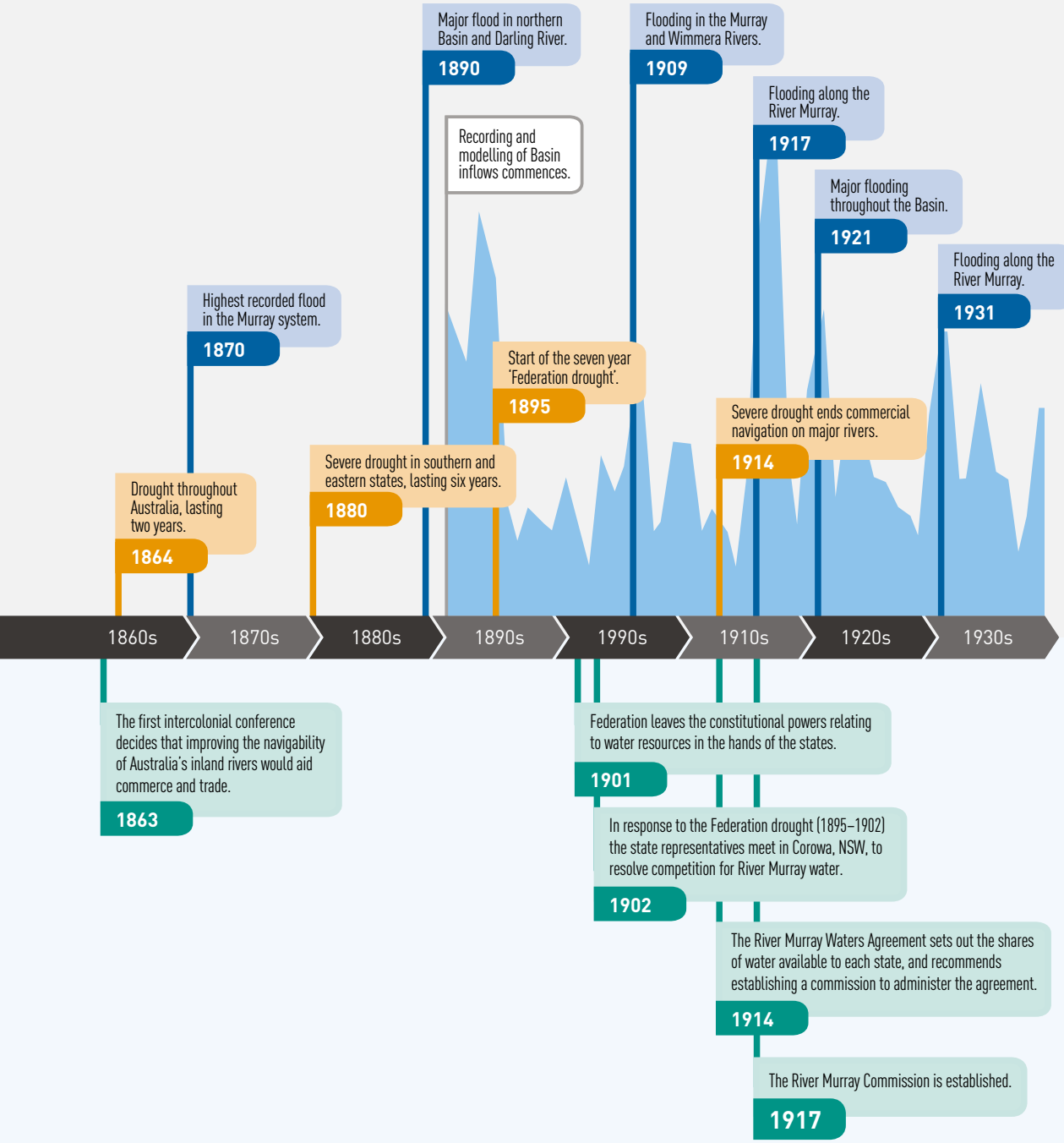
2 out of the 3 groundwater SDL reviews completed

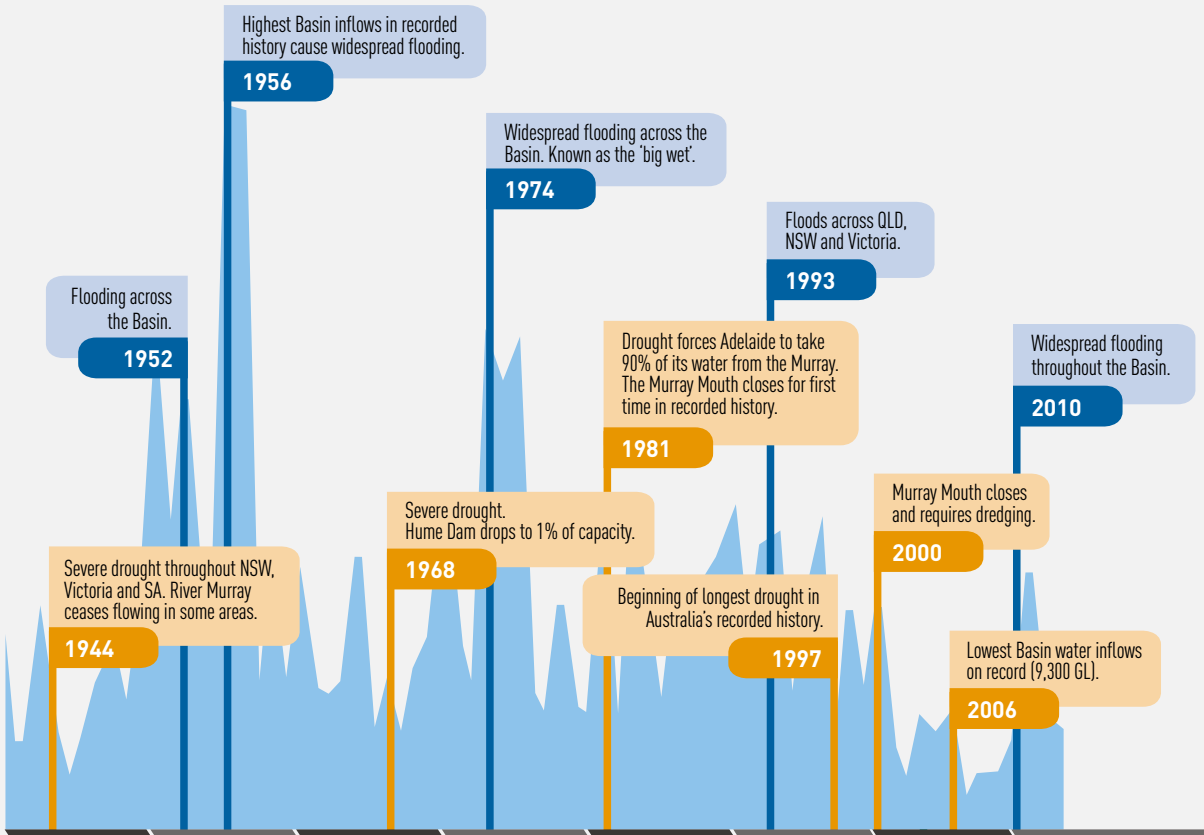


2,000 km Sea-to-Hume Fishway Program completed, allowing fish to migrate over 2,000 km of the River Murray

Published **52** river operations weekly reports and **56** flow and salinity reports on the River Murray

Our history


Major flood in northern Basin and Darling River.
1890
Flooding in the Murray and Wimmera Rivers.
1909
Flooding along the River Murray.
1917
Major flooding throughout the Basin.
1921
Flooding along the River Murray.
1931
Recording and modelling of Basin inflows commences.
Highest recorded flood in the Murray system.
1870
Start of the seven year 'Federation drought'.
1895
Severe drought ends commercial navigation on major rivers.
1914
Severe drought in southern and eastern states, lasting six years.
1880
Drought throughout Australia, lasting two years.
1864
1860s
1870s
1880s
1890s
1990s
1910s
1920s
1930s
The first intercolonial conference decides that improving the navigability of Australia's inland rivers would aid commerce and trade.
1863
Federation leaves the constitutional powers relating to water resources in the hands of the states.
1901
In response to the Federation drought (1895–1902) the state representatives meet in Corowa, NSW, to resolve competition for River Murray water.
1902
The River Murray Waters Agreement sets out the shares of water available to each state, and recommends establishing a commission to administer the agreement.
1914
The River Murray Commission is established.
1917



The Murray–Darling Basin Agreement is signed establishing the Murray–Darling Basin Commission, replacing the River Murray Commission. The resource-sharing arrangements between the states are expanded to cover the whole Murray–Darling Basin.

1987

A Cap on diverting water from the Basin's river systems is introduced.

1995

One of Australia's largest river restoration programs is announced — The Living Murray Initiative — which aims to restore the health of the River Murray system.

2003

The National Water Initiative is signed by all governments and aims to achieve a more cohesive national approach to the way Australia manages, measures, plans for, prices and trades water.

2004

The Water Act implements key reforms for water management in Australia. It establishes the Murray–Darling Basin Authority and tasks it with developing a whole-of-Basin Plan that will limit the amount of water that can be taken from the Murray–Darling Basin.

2007

The Murray–Darling Basin Authority takes over the functions of the Murray–Darling Basin Commission. For the first time a single agency is responsible for planning the integrated management of water resources across the Murray–Darling Basin.

2008

The Basin Plan becomes law, providing for the first time a coordinated sustainable approach to water use across the Basin's four states and the ACT.

2012

Our year at a glance (via tweets)

In 2013–14 we sent out more than 390 tweets to over 2,000 followers. Here are some of them.

July

MD Basin Authority @MD_Basin_Auth 12 July 2013

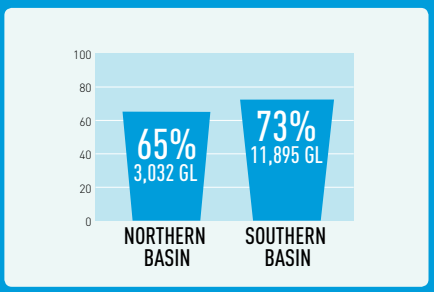
We are working with Geoscience Australia to do the largest aerial photograph and LiDAR data collection (remote sensing ground-level data) in the southern hemisphere, with a focus on the northern Basin. This will help us monitor our environmental water flows and floodplain inundation

MD Basin Authority @MD_Basin_Auth 23 July 2013

Authority member Barry Hart and MDBA staff at today's launch of the Koondrook–Perricoota Forest environmental works. This is the largest major work to be completed under The Living Murray program and will deliver environmental water to more than 17,000 hectares of forest (see page 76).

Photo by MDBA

Water storages in July



MD Basin Authority @MD_Basin_Auth 3 July 2013

The MDBA is a finalist for the 2013 Theiss International Riverprize.

MD Basin Authority @MD_Basin_Auth 14 July 2013

MDBA Chair Craig Knowles on gate duty while out and about in the Basin.

Photo by MDBA

August

MD Basin Authority @MD_Basin_Auth 3 August 2013

This month MDBA staff will be in Moree, Narrabri and Warren, along with representatives from the Northern Basin Advisory Committee, for a Basin Plan update.

MD Basin Authority @MD_Basin_Auth 18 August 2013

Our education team was at open day at Geosciences Australia during National Science Week. Around 8,000 people joined in the fun.

October

MD Basin Authority @MD_Basin_Auth 9 October 2013

Grab a copy of the draft constraints management strategy which is open for comment until October 30 (see page 46). We will be running open house meetings in Mildura, Renmark, Shepparton, Deniliquin and Narrandera.

Over 40 people at the Shepparton open house listening to MDBA Chief Executive Rhondda Dickson talk about the constraints management strategy.

Photo by MDBA

MD Basin Authority @MD_Basin_Auth 20 August 2013

Congratulations to this year's Collings Trophy winner, Yarrawonga Weir!

Photo by Arthur Mostead

November

MD Basin Authority @MD_Basin_Auth 13 November 2013

The Living Murray program reaches a new milestone with the 1,000th gigalitre delivered to the environment (see page 49).

MD Basin Authority @MD_Basin_Auth 22 November 2013

Today marks the first anniversary of the Murray–Darling Basin Plan being signed into law. MDBA Chair Craig Knowles talking to ABC news about today's anniversary.

Photo by Alisha Caldwell (MDBA)

MD Basin Authority @MD_Basin_Auth 26 November 2013

Congratulations to Ben Mylius the 2014 MDBA John Monash scholar and to the other John Monash scholars (see page 70).

December

MD Basin Authority @MD_Basin_Auth 19 December 2013

Senator Simon Birmingham and Victorian Minister Peter Walsh officially opened The Living Murray environmental works at Hattah Lakes today (see page 50 and 76).

Photo by Ben Dyer (MDBA)

March

MD Basin Authority @MD_Basin_Auth 6 March 2014

Congrats to Tony McLeod on his Fulbright Program Senior Scholarship. Tony will use his scholarship to study the similarities between the Murray–Darling Basin and the Colorado Basin.

MD Basin Authority @MD_Basin_Auth 6 March 2014

As part of the celebrations for the UN's World Water Day Senator Birmingham launched our brand new mobile game at Questacon (see page 69).

Photo by Brayden Dykes (MDBA)

January

MD Basin Authority @MD_Basin_Auth 14 January 2014

Here are some of the bright students visiting the MDBA as part of the National Youth Science Forum.

Photo by Brayden Dykes (MDBA)

MD Basin Authority @MD_Basin_Auth 23 January 2014

Look who showed up while the Chair Craig Knowles and Authority member Di Davidson were in South Australia yesterday.

Photo by Alisha Caldwell (MDBA)

April

MD Basin Authority @MD_Basin_Auth x April 2014

This month we will be holding meetings for communities in Dirranbandi, Narrabri, Warren and Goondiwindi.

May

MD Basin Authority @MD_Basin_Auth 6 May 2014

Basin Champions program kicked off today at Questacon in Canberra. Great chatting with far-west NSW schools via video conference (see page 69).

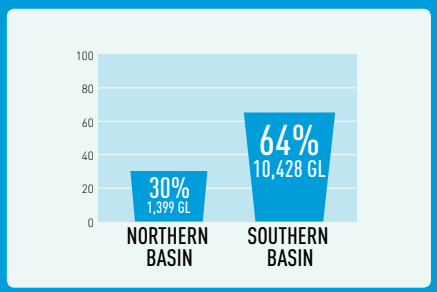
Photo by Brayden Dykes (MDBA)

MD Basin Authority @MD_Basin_Auth 16 June 2014

We're hearing about water with northern MDBasin people in Moree today, including Michelle Ramsay and Katrina Humphries from the Northern Basin Advisory Committee (see page 36).

Photo by Andrew Beer (MDBA)

Water storages in June



MD Basin Authority @MD_Basin_Auth 30 May 2014

Environmental watering has now started at Gunbower Forest and Hattah Lakes using the recently completed environmental works, which were funded through The Living Murray program (see page 51).

June

MD Basin Authority @MD_Basin_Auth 10 June 2014

Hear the latest on #MDBasin #RiverOps with David Dreverman at 7.35am tomorrow on ABC Riverina

MD Basin Authority @MD_Basin_Auth 19 June 2014

We're hearing from #MDBasin landholders on the Lower Darling this wk: here's the Anabranch still at reasonable levels

Photo by Rachel Clarke (MDBA)

Chief Executive's review

2013–14 was a year of bedding down our transition to implementing the Basin Plan.

Central to our work over the past year has been building partnerships for the rollout of the Basin Plan. These partnerships are essential to ensuring that the Plan can secure the economic, social and environmental needs of the Basin and its people.

We further strengthened the collaborative arrangements with the Basin states and the Commonwealth Environmental Water Holder by settling the Murray–Darling Basin Plan Implementation Agreement. This agreement sets out the roles and responsibilities for each party in meeting the obligations of the Basin Plan, and represents a commitment to work together constructively in the national interest. It also establishes the Basin Plan Implementation Committee and its working groups, which provide forums for the Basin governments, the MDBA and the Commonwealth Environmental Water Holder to develop cost-effective and efficient approaches to meeting the Basin Plan's obligations.

We have been working extensively with local governments and Basin communities and industries on key elements of the Plan's implementation, such as the constraints management strategy, the monitoring and evaluation framework and the northern Basin work program. We have received strong guidance from stakeholders on how to build robustness into our social and economic analysis of the Plan's water reforms. Input from scientists and community groups has also been critical to the development of the constraints management strategy and our environmental watering policies.

Steady rollout of Basin Plan milestones

We have begun to deliver some of the major milestones under the Basin Plan. In November 2013 we published our first constraints management strategy, identifying priority constraints that will need to be addressed to enhance the benefits of environmental watering in some areas. The new water trading rules will come into effect on 1 July 2014, and we are continuing to work closely with the Basin states and irrigation infrastructure operators to ensure effective compliance with these rules.

We published the first Basin environmental water outlook and second annual environmental watering priorities for the year ahead (2014–15). We also developed a method for estimating salt export from the River Murray system to the Southern Ocean. This method will be critical to evaluations of whether the Basin Plan's salt export objective can be met over time. The salt export target was met in 2013–14.

We also completed two reviews of groundwater sustainable diversion limits for New South Wales, and began the review for the Goulburn–Murray Sedimentary Plain.

During the first watering at Hattah Lakes, using the new water management structures, water flowed into Lake Bitterang which had not received water in 20 years (photo by Heather Peachey, MDBA).

Achievements in asset construction and dam safety

2013–14 marked the culmination of 10 to 15 years of planning and construction of key assets in the River Murray system. The Basin governments achieved a major milestone with the completion of a new $30 million buttress wall to strengthen the spillway southern training wall at Hume Dam. We also oversaw the completion of the 'Sea-to-Hume' navigable pass and fishway program, which began in 2002 but was significantly disrupted by floods over 2010 to 2012. The fishway will assist the migration of native fish along the entire length of the River Murray, which hasn't been possible since the construction of locks and weirs began in the 1920s.

River Murray environmental watering

We were able to deliver over 600 GL of water on behalf of The Living Murray program, the Commonwealth Environmental Water Holder and the Victorian Environmental Water Holder. This water benefited a number of environmentally significant sites including the Barmah–Millewa Forest, the Edward–Wakool system, Broken Creek, Gunbower Creek and the Coorong and Murray Mouth.

Over the past year, we were able to achieve environmental watering of large floodplain forests through the commissioning of works at Koondrook–Perricoota Forest, Hattah Lakes and Mulcra Island as part of The Living Murray program. Major works were also completed at Gunbower Forest and the Chowilla floodplain, with the first watering events scheduled for spring 2014.

Future of the joint governments' programs

2013–14 was another interim year for the joint governments' programs, which have been budgeted one year at a time since 2012–13. In the coming 12 months, the joint governments will see the results of a number of performance and efficiency reviews. These results will enable the governments to meet their commitment to settling a long-term funding agreement for joint activities. In turn, this will allow the MDBA and our partners to plan and deliver programs more strategically and efficiently into the future.

Developing our expertise and knowledge

We are lucky to have passionate, dedicated staff at the MDBA, many of whom have specialist expertise in water and natural resources management. In 2013–14 we continued to build our capacity to excel in technical work, policy development, community engagement and leadership through both formal development opportunities and on-the-job training. Media training has been a particular focus over the past year, and listeners may often hear members of our staff on regional radio discussing various aspects of our work.

Many challenges lie ahead and I look forward to working with the MDBA staff and our stakeholders as we strive to achieve our goals over the next 12 months and beyond.

Chief Finance Officer's report

The MDBA delivered on programs to the value of $169.3 million, managed over $2.6 billion in assets, continued to implement a range of new policy initiatives (such as the constraints management strategy and developing the sustainable diversion limit adjustment mechanism), while continuing to satisfy all key financial sustainability criteria in the face of increasingly tighter fiscal conditions. We achieved these outcomes during a very busy period where we also successfully implemented phase one of a significant public management reform process to transition to the new *Public Governance, Performance and Accountability Act 2013* on 1 July 2014.

The MDBA's closing equity (net assets) of $74.3 million, reflected a continuation of responsible financial stewardship.

Key financial challenges for the MDBA included:

- further reductions in contributions from the Basin states (down $4.5 million) for the delivery of ongoing joint-program activities
- achieving productivity improvements to manage the financial pressures from the Australian Public Service efficiency measures
- managing construction costs as the Environmental Works and Measures Program neared completion
- managing the outcomes of key strategic funding reviews, such as the review of the basis for cost-sharing between the Basin states and the Commonwealth for the delivery of the joint programs.

Other areas which we continued to work on included:

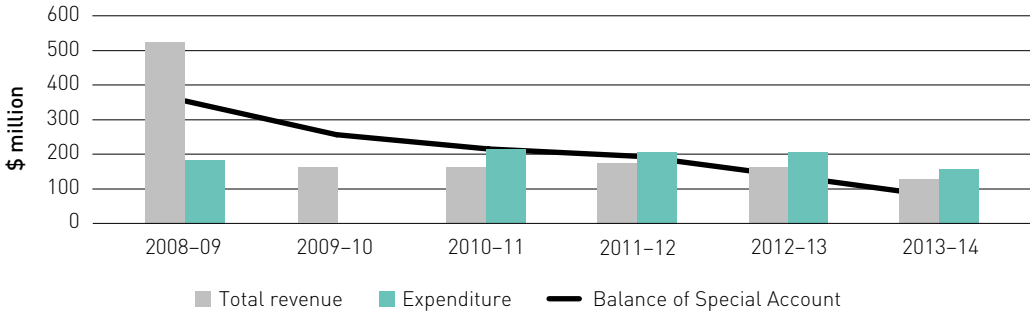
- better connecting, planning, budgeting and forecasting to improve resource allocation, to achieve greater transparency, efficiencies and effectiveness
- fine-tuning our budgeting activities to support more dynamic decision-making, particularly for our key stakeholders including the Basin states and the Commonwealth
- moving towards more dynamic and adaptive forms of forecasting, to achieve improved levels of precision in terms of budget targets.

These measures are not only desirable for the MDBA, in terms of continuous improvement, but are also fundamental to our stakeholders, such as the Basin states, who provide us with funding to deliver the joint programs. We effectively manage our sources of income and capital, taking into consideration the needs of our stakeholders, to create a mix that matches the policy objectives and risk profile of our stakeholders.

Financial results

Figure ii (page 15) shows the relationship between the MDBA's financial performance and the balances in the Murray–Darling Basin Special Account since the inception of the MDBA. The relationship between operating deficits and net assets, while expected, does not indicate poor financial performance.

Figure ii MDBA financial performance and Murray–Darling Basin Special Account (2008–09 to 2013–14)



In this case the funds have been held in the Murray–Darling Basin Special Account since the MDBA's inception in order to fund works, primarily in relation to the Environmental Works and Measures Program. For this reason projected budget deficits and a reduction in the Murray–Darling Basin Special Account balances should not be viewed negatively. Spending on this program was funded through draw-downs on the Special Account, which has the simultaneous effect of reducing net assets and also increasing our operating deficits.

The ability of the MDBA to ensure capital maintenance since 2008, using sound financial management in the face of declining revenues, has provided continued funding for the program, until its completion in 2015–16.

This pattern will continue in 2014–15 with an estimated operating deficit of $27.5 million. When the Environmental Works and Measures Program finishes these anomalies will largely disappear.

Contributions from the Basin states

The reduction in state contributions for delivering the joint programs continued in 2013–14, falling from $100.2 million in 2012–13 to $84.3 million. We continued to work with the Basin states to develop solutions to establish a more secure long-term funding position. This included providing input and support to the Ministerial Council review, and review of the cost sharing arrangements which underpin the contributions from the Basin states for the joint programs. We are also participating in a second review on the efficiency of the River Murray operations, which is due to report in 2015.

General and special purpose reporting

The MDBA's general-purpose financial report (see pages 129–185) sets out our objectives and refers to our economic dependency on the Australian Government's policy and parliamentary appropriations to administer the agency and its functions.

A key function of the MDBA is as an asset manager, on behalf of the Basin states, for key infrastructure assets throughout the Basin. Infrastructure assets comprise $2.6 billion in River Murray Operations assets (such as Hume and Dartmouth dams, and the locks and weirs on the River Murray). More assets are being added as major water management structures are completed under the Environmental Works and Measures Program.

We also manage $430.1 million in water entitlements through The Living Murray Initiative. The Living Murray assets were either purchased from the market or acquired as a result of environmental water infrastructure projects. These assets are subject to valuation on an annual basis and are valued (on a consistent basis) in accordance with Australian accounting standards.

The River Murray Operations and The Living Murray assets do not form part of the MDBA's general-purpose financial report. They are reported separately in special-purpose financial reports on behalf of the unincorporated joint ventures that control these assets. These special-purpose financial reports do not form part of this annual report, but are audited annually by the Australian Auditor-General. In turn, the asset values reported in the special-purpose financial statements provide the formal basis for the Australian Government, and other state controlling governments, to reflect their controlling shares in these assets and report them in their respective general-purpose financial reports.

Internal controls

The Auditor-General has advised that the MDBA has appropriate financial controls in place and that these operated effectively and reliably during the past year. Similarly, no major issues have been identified by the MDBA's internal auditors.

It is relevant to note that we have:

- a sound internal control framework, including effective identification and management of business risks in the MDBA, with supporting procedures in place
- reliable financial and management reporting systems
- complied with applicable laws, regulation and government policies (including reporting on the results of using the mandatory certificate of compliance reporting).

From 1 July 2014 the new *Public Governance, Performance and Accountability Act 2013* legislative framework will escalate the requirements on agencies to ensure that controls are maintained in an effective, efficient and reliable manner.

The shift away from a prescriptive financial framework to a more principles-based framework will be accompanied by a stronger reliance on the robustness of internal controls and risk management. We will shift our efforts to achieving a more optimal balance between performance and conformance.

Dusky woodswallows (photo by Vic Hughes) was the winning photo in the MDBA's annual report photographic competition for staff.

The Authority members, from left to right — Craig Knowles (Chair), Dianne Davidson, Rhondda Dickson (Chief Executive), George Warne, Diana Gibbs and Barry Hart (photo by Irene Dowdy)

The Authority

The Murray–Darling Basin Authority (the Authority) consists of the Chief Executive, a part-time Chair and four part-time members. Authority members are appointed by the Governor-General and each must have substantial expertise in one or more fields relevant to the activities of the agency — for example, water resource management, hydrology, freshwater ecology, resource economics, irrigated agriculture, public sector management and financial management.

At 30 June 2014 Authority members were:

Craig Knowles

The Hon. Craig Knowles was appointed Chair of the Authority from 1 February 2011. Craig was a former minister in the NSW Parliament serving in the portfolios of Planning and Housing; Health; Infrastructure; Planning and Natural Resources; and Forests and Lands. Before entering parliament Craig worked in property, land management, planning and valuation, in both the private sector and for NSW public sector agencies. Craig serves as a director of a number of commercial, charitable, statutory and not-for-profit boards and associations, including the Black Dog Institute, Mental Health Council of Australia, and he is the immediate past President of the Asthma Foundation of NSW.

Dianne Davidson

Dianne Davidson is an agricultural scientist and horticulturist, and has a strong management background in natural resources, particularly water and irrigated agriculture. She is a fourth generation farmer in the Lower Lakes region of the Basin and manages her own mixed agricultural business there, as well as carrying out consulting work throughout Australia and internationally.

Rhondda Dickson PSM

Dr Rhondda Dickson has been Chief Executive of the MDBA since June 2011. She led the development of a significant piece of national water reform — the Basin Plan — forging strong relationships with MDBA's partner governments and Basin communities.

She received a Public Service Medal for this work. Before joining the MDBA, Rhondda was a Deputy Secretary of the Department of Agriculture, Fisheries and Forestry. She has previously held senior executive positions at the Department of the Prime Minister and Cabinet, and Department of Environment. Through her public service career Rhondda has worked across the full scope of practical natural resource management, including the development and implementation of the Natural Heritage Trust, the National Action Plan for Water Quality and Salinity, national forest policy, fisheries and national approaches to vegetation management.

Diana Gibbs

Diana Gibbs is a resource economist with post-graduate qualifications in environmental studies. She has been involved in resource development planning in Australia, Africa, the Middle East and South-East Asia, and has worked with communities throughout the Basin, particularly in New South Wales. She sits on the New South Wales Climate Change Council and is also a partner in a sheep/wheat farming operation in the Basin.

Barry Hart AM

Professor Barry Hart is an Emeritus Professor at Monash University and has over 35 years' experience in freshwater ecology and natural resource management. He also chairs a number of government scientific and strategic advisory committees, and is director of an environmental consulting company. In the 2012 Queen's Birthday Honours, Barry was made a Member of the Order of Australia for services to conservation and the environment.

George Warne

The newest member of the Authority, George Warne, was appointed on 30 April 2014. George is a recognised leader in the rural sector, with a strong understanding of rural communities. George has worked in the water industry for more than 25 years, including being CEO of Murray Irrigation Limited, State Water NSW and interim CEO of the Northern Victorian Irrigation Renewal Program.

Executive team

Executive leadership of the Murray–Darling Basin Authority comprises:

MDBA senior staff (photo by Brayden Dykes, MDBA)

Rhondda Dickson PSM, Chief Executive

See pages 17 to 18.

David Dreverman, Executive Director River Management

David Dreverman joined the Murray–Darling Basin Commission in 2000 as Manager Assets and was appointed General Manager River Murray Water in 2003. David transferred to MDBA in late 2008, when it subsumed the functions of the Commission. David has worked in the consulting engineering industry with SMEC; the Hydro–Electric Commission of Tasmania; and Australian Power & Water. For more than 35 years he has been involved with large dam and hydropower projects, both in Australia and overseas, and more recently in the management of the River Murray system.

Russell James, Executive Director Policy and Planning

Russell James joined the MDBA in 2011 and his division is focused on implementing the Basin Plan. Before joining the MDBA Russell was a major contributor to the design of the Commonwealth's water reforms, including the $10 billion National Plan for Water Security, and the *Water Act 2007*. Russell has worked on a range of natural resource reforms through his career including the National Water Initiative, the National Action Plan on Salinity and Water Quality, reform of the Commonwealth fishing industry and native vegetation management. He began his career in the private forestry sector, working in both Tasmania and New South Wales.

Frank Nicholas, Executive Director Corporate and Business Services

Frank Nicholas joined the MDBA as Executive Director Corporate Services in September 2008 following a short period with the Department of Environment, Water, Heritage and the Arts where he assisted with establishing the new Murray–Darling Basin Authority. Prior to that Frank held the position of First Assistant Secretary, Corporate and Business Division in the Department of Broadband, Communication and the Digital Economy. Frank has over 30 years' experience in the Australian Public Service in delivering and leading corporate support services.

Jody Swirepik PSM, Executive Director Environmental Management

Jody Swirepik joined the Murray–Darling Basin Commission in 2001 and worked on water quality and developing the Sustainable Rivers Audit. She then worked on The Living Murray program, receiving a Public Service Medal for her work. Jody transferred to the MDBA in late 2008, when it took over the functions of the MDBC. Before 2001 Jody worked for the New South Wales Environment Protection Authority, implementing water reforms and working on the early environmental flow provisions for inland New South Wales. Jody's qualifications are in applied science and focus on water management and freshwater aquatic ecology, with an Honours (First) on aquatic plants and a master's degree focusing on the impact of carp.[3]

3 Scientific names of plants and animals are on page 205.

Farmland near the Warrego River, northern NSW
(photo by Tom Chesson)

OBJECTIVE 1

CHAPTER 1
TRANSBOUNDARY WATER MANAGEMENT

To implement sustainable water planning and management arrangements that optimise the social, economic and environmental outcomes from the use of the Murray–Darling Basin's water resources

Our performance	p. 23
Implementing the Basin Plan	p. 25
Sustainable diversion limit adjustment	p. 31
Working in the northern Basin	p. 32
Compliance and assurance	p. 33
Working with the states	p. 34
Engaging communities and interest groups	p. 35

Overview

At the beginning of the year the Basin Plan was only six months young, so 2013–14 was an important year to further establish our collaborative approach to implementing the Plan and the Australian Government's commitment to delivering it in full and on time.

Considerable progress has been made, in partnership with Basin state governments, on the collaborative implementation approach. Importantly we established the Basin Plan Implementation Committee to guide the work ahead. The Commonwealth Environmental Water Office and Basin governments all committed to working in partnership to achieve the goals of the Basin Plan.

We have continued to work with local communities in a number of ways — including through our advisory committees, such as the Basin Community Committee and the Northern Basin Advisory Committee. We have also continued to meet and work with the Northern Basin Aboriginal Nations and the Murray Lower Darling Rivers Indigenous Nations. We also organised twice-yearly regional forums to update communities on Basin water reforms, and ran targeted consultations on particular issues.

To facilitate the accreditation of the state's water resource plans we published a planning handbook as well as convened a water planner's forum. We also continued to work on water market products to give people much better access to water information, regardless of which state they operate in.

Finally, a critical planning phase was completed when we developed a monitoring and evaluation framework for the Basin Plan and associated water reforms. The framework will guide the work of the MDBA, the Commonwealth Environmental Water Office and the Basin states to determine whether the expected environmental, social and economic outcomes are being achieved.

Challenges and the year ahead

A real challenge has been the need to keep all the short-term deliverables on track, including work on the groundwater reviews and the sustainable diversion limit adjustment mechanism, while finalising the longer-term elements of the Plan. This included implementing arrangements for working with the Basin states to accredit their water resource plans. Thirty-six state plans must be accredited by 2019, which is a substantial task.

In 2014–15 we will publish the water trading rules, complete the last of the groundwater sustainable diversion limit reviews and make significant progress with the northern Basin review. We will continue to work with Basin states on their proposals for the sustainable diversion limit adjustment mechanism, and with Queensland and ACT governments on the water resource plans they are preparing for Commonwealth accreditation.

Highlights

- Finalised an implementation agreement for the Basin Plan with the states and the Commonwealth Environmental Water Office and formed a new collaborative committee.
- Developed the two core requirements for assessing Basin government proposals to adjust the sustainable diversion limits, namely a benchmark model and the 'ecological equivalence' scoring method.
- Completed the two groundwater sustainable diversion limit reviews for New South Wales, mandated in the Basin Plan, and commenced the review of the Goulburn–Murray Sedimentary Plain SDL resource unit.
- Established the work program for reviewing the sustainable diversion limits in the northern Basin.
- Commenced trials of a cultural health index to measure the importance of rivers and wetlands to Aboriginal people, based on Māori experience in New Zealand.
- The Basin Community Committee was renewed, and the Northern Basin Advisory Committee, and the Advisory Committee on Social, Economic and Environmental Sciences continued to provide us with advice.

Our performance

Program performance is measured against deliverables and key performance indicators in the *Portfolio Budget Statements 2013–14* of the Sustainability, Environment, Water, Population and Communities portfolio. A summary of our performance against the deliverables and indicators related to strategic goal 1 is provided in Table 1.1.

Table 1.1 Deliverables from the portfolio budget statements for goal 1 — Integrated water management

DELIVERABLES	KEY PERFORMANCE INDICATORS	RESULTS	PAGE[4]
Finalise Implementation Agreement with Basin states and territories for the Basin Plan	Effective arrangements in place for working with Basin governments in Basin Plan implementation, with a rolling implementation work program updated annually	The Implementation Agreement was finalised in August 2013. The Basin Plan Implementation Committee was established and the forward work program developed	34
Finalise the Guidelines for accreditation of water resource plans	Progressive accreditation of state water resource plans that meet the Basin Plan requirements for sustainable and adaptable water management	Completed the *Handbook for practitioners — water resource plan requirements* in October 2013. We are developing processes to assess water resource plans	28
Develop reporting arrangements for provisional sustainable diversion limit compliance	Compliance with SDLs	Work program for the transition to SDL arrangements agreed to in May 2014	33
Finalise clear transitional arrangements for the Basin Plan		Coverage of transitional and interim water resource plans extended to enable a smooth transition to water plans which are consistent with the Basin Plan	25
Conduct groundwater sustainable diversion limit reviews as required in the Basin Plan	Basin Plan actions on the review of certain groundwater SDLs demonstrate a balanced approach to achieving social, economic and environmental outcomes	Completed reviews in NSW and began the Victorian review	28
Develop the method to calculate environmental equivalents in the sustainable diversion limit adjustment process	Assessment method for environmental equivalency component of the SDL adjustment mechanism is supported by peer review	Method developed and progressed to a trial application phase. Peer review endorsed the method subject to trial results	32
Establish a three year work program of research and investigation into aspects of the Basin Plan in the northern Basin	Basin Plan actions on the northern Basin work program demonstrate a balanced approach to achieving social, economic and environmental outcomes	Reviewed the science and knowledge basis for surface water SDLs. Began projects that will inform decisions about SDLs in 2015	31, 32

DELIVERABLES	KEY PERFORMANCE INDICATORS	RESULTS	PAGE[4]
Implement water trading rules	Compliance with water trading rules	Published water trading guidelines, in April 2014, and worked closely with Basin states and irrigation infrastructure operators to prepare for the rules	29
Establish agreed arrangements to meet critical human water use needs and apply, if necessary, during times of severe water shortage	Effective management of critical human water needs during times of severe water shortage	Applied Tier 1 water sharing arrangements — critical human water needs, conveyance water and conveyance reserve requirements met	29
Establish Basin Plan reporting, evaluation and audit framework	Reporting, evaluation and audit activities indicate that Basin Plan implementation is: improving the health of water-dependent ecosystems and ecosystem functions in the Basin facilitating water reaching its most productive use contributing to productive and resilient water-dependent industries	The evaluation framework approved for publication Began evaluation planning consistent with the framework	30
Develop indicators for monitoring and evaluating the long-term social, economic and environmental impacts of the Basin Plan[5]	Evaluation of Basin Plan effectiveness is well supported by evidence	The MDBA has drawn on the expertise of recognised experts to develop indicators. The evaluation framework will guide the preparation of the annual effectiveness report	31
Establish internal structures, processes and reporting arrangements to ensure Basin governments and the community are involved in implementation of the Basin Plan		MDBA staff are chairs of the Basin Plan Implementation Committee and its four working groups. Each have met at least twice this year	34
Establish the formal and informal arrangements to support close community collaboration in implementing the Basin Plan	Local knowledge and solutions inform the implementation of the Basin Plan	The Basin Community Committee was renewed. The Northern Basin Advisory Committee continued to provide us with advice. We held discussions with communities through regional forums	35

4 Some deliverables and key performance indicators go across goals so results will also be found in other chapters.

5 This deliverable has been moved from goal 3 as it more accurately fits under goal 1.

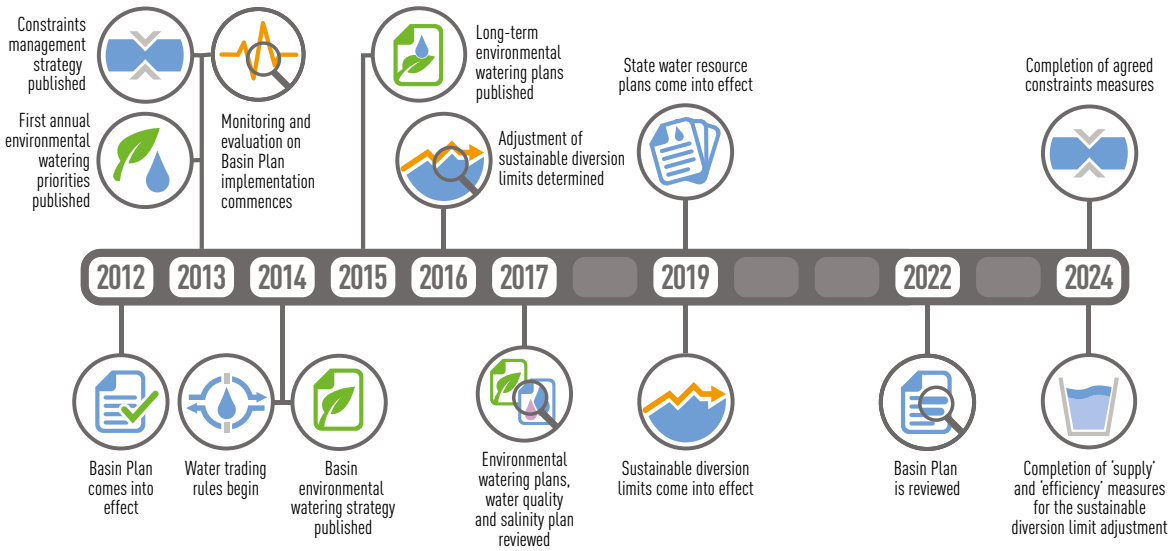
Implementing the Basin Plan

One of the key objectives of the Basin Plan is balancing the water needs of communities, industries and the environment. The plan aims to do this by establishing new long-term average sustainable diversion limits. Sustainable diversion limits (SDLs) are limits on the volumes of water that can be taken from groundwater and surface water sources for consumptive use, and are set at both a catchment and a Basin-wide scale.

Consumptive use is the use of water for irrigation, industry, urban, stock and domestic use, or for other private consumptive purposes.

The Basin Plan is progressively being implemented over seven years, commencing last year, to allow time for the Basin states, communities and the Australian Government to work together to manage the changes required for achieving a healthy working Basin. Key implementation steps are outlined in Figure 1.1.

Figure 1.1 Basin Plan timeline



Progress towards rebalancing consumptive use and environmental water use can be monitored by regular reporting of the reduction target recovery effort. As at 30 June 2014 1,904 GL of water entitlements (long term diversion limit equivalence) has been recovered, about 69% of the reduction target.

Water resource planning

A key role for the MDBA is to ensure that by 2019 there are water resource plans across the Basin which are consistent with the Basin Plan. To achieve this we continued to work with the Basin states to develop water resource plans that will meet Basin Plan requirements. We also continued to establish processes to help us assess water resource plans and make recommendations to the Commonwealth Minister for Water.

Implementing the Basin Plan 2012–19

Sustainable diversion limits (SDLs)

The Basin Plan sets out SDLs — how much water can be sustainably taken from the Basin's waterways (including groundwater).

To do	
• review 3 groundwater SDLs by late 2014	2 completed
• determine SDL adjustment	by mid 2016
• SDLs come into effect	2019

Recover water for the environment

The Australian Government is investing in more efficient water use and purchasing water.

To do	
• recover 2,750 GL of water	69% (1,904 GL) already recovered by June 2014

Plan for the use of environmental water across the Basin.

To do	
• publish 2013–14 environmental watering priorities	✓
• publish 2014–15 environmental watering priorities	✓
• publish 2014 environmental watering outlook	✓
• publish Basin-wide environmental watering strategy	Nov 2014

State water resource plans

To do	
• publish Handbook for practioners — water resource pan requirements	✓
• accredit 36 state water resource plans	by 2019

At the heart of the Basin Plan is the need to reduce the amount of water which was being taken from the Murray–Darling Basin to ensure enough water for all users, including the environment.

The Plan will be progressively implemented over seven years by the Australian Government, MDBA, the Commonwealth Environmental Water Holder, the Basin states and the community.

Improve the operation of the water market by increasing transparency, reducing restrictions on trade and improving confidence.

To do	
• publish guidelines about water trade rules	✓
• publish water trading rules	1 July 2014
• review existing trade rules for consistency with the new rules	up to 40,000 existing rules

Smarter ways of managing water — looking at ways of delivering environmental water that is more like natural flows, to better support floodplains and wetlands.

To do	
• publish 2013–24 constraints management plan	✓
• determine which projects will go ahead	mid-2016
• complete agreed constraints measures	2024

Monitor and evaluate the effects of the Basin Plan on the environment, communities and industries.

To do	
• publish 2012–13 Basin Plan annual effectiveness report	✓
• publish the monitoring and evaluation framework	✓
• publish 2013–14 Basin Plan annual report	late 2014
• publish 5 yearly reports	2017, 2022

Working with communities, governments, Aboriginal groups, industries, scientists and partners to achieve a sustainable Basin, environmentally, socially and economically

Working with the Basin states to develop the Basin-wide salinity strategy for 2015–30

Basin Plan to be reviewed **2022**

In February we held the first water resource planners' forum to share knowledge and improve our approach to planning. The forum was attended by water planners from all Basin states and the Commonwealth. In October 2013 we completed the *Handbook for practitioners — water resource plan requirements* to assist state planners with developing water resource plans. The handbook will continue to be updated to reflect new information and experience gained by developing and accrediting the water resource plans.

We established the water resource plan working group, with representatives from each of the Basin states and Commonwealth, which provides advice on water resource plans and has agreed to an approach for implementing water resource plans and assessing accreditation.

Throughout the year we continued to work with the Murray Lower Darling Rivers Indigenous Nations and the Northern Basin Aboriginal Nations to prepare for consultation on water resource planning, particularly in relation to roles and responsibilities.

We assisted Basin states and the Department of the Environment (Cwlth) in extending the coverage of existing state plans (transitional and interim plans) under the *Water Act 2007*. This gives the states more time to prepare plans that are consistent with the Basin Plan.

Surface water issues

Although sustainable diversion limits will not come into effect until 1 July 2019, some reporting obligations began when the Basin Plan was adopted. To prepare for this we worked closely with the Basin states to build on the monitoring and reporting arrangements which were established under the Cap for surface water diversions, so that the requirements under the Water Act (section 71) could be met.

We achieved this by negotiating with the Basin states on the requirements they needed to report against for all Basin water resources, this included take by interception activities (such as runoff dams and commercial plantations) and surface water resources that were not reported under the Cap (see page 65).

By the end of October 2013, Basin states met their first reporting obligation for the 2012–13 water year. These will be published in late 2014 in the Murray–Darling Basin water resource report 2012–13 (which replaces the water audit monitoring report).

Progress towards implementing the sustainable diversion limits continued this year with more water recovered for the environment. We provided technical and policy support to the Commonwealth in relation to their recovery strategy and published quarterly progress reports which showed how much environmental water had been recovered.

After successfully negotiating with the Basin states on developing a monitoring and reporting framework for the sustainable diversion limits, we began implementing key arrangements. This work will help provide a smooth transition from current arrangements (including those under the Cap, see page 65) to those required for implementing the sustainable diversion limits.

A number of challenging policy and technical matters are currently being addressed as we test and trial key aspects for implementing the sustainable diversion limits. This work will also assist the Basin states in developing their water resource plans.

Groundwater issues

We completed the two New South Wales groundwater reviews specified in the Basin Plan and began the Victorian groundwater review. Any proposed amendments to the Basin Plan will follow the amendment process in the Water Act (sections 45–48), which includes an eight week public consultation phase.

The groundwater element of the Water Act (section 71) reporting was successfully negotiated with the Basin states, which provided reports for the 2012–13 water year. This will be published in late 2014 in the Murray–Darling Basin water resource report 2012–13.

We published *Approaches to achieve sustainable groundwater management in the Murray–Darling Basin*. This report identifies the types of rules and resource condition limits that could be included in water resource plans to manage the potential localised impacts of extracting groundwater. It also provides a suggested framework on how to assess the need for rules.

We completed four projects in the northern Basin that will increase our understanding of how groundwater systems function. The projects included an update of a numerical groundwater model for the Central Condamine Alluvium area and a water balance study for the Border Rivers and Condamine Fractured Rock sustainable diversion limit resource units. The final project reviewed groundwater extraction by stock and domestic bores in peri-urban areas.

Water trade

The Basin Plan water trading rules will come into effect on 1 July 2014. We developed technical guidelines to assist the Basin states, irrigation infrastructure operators and individuals participating in the water market in understanding the new rules. To develop the guidelines we consulted with Basin states, industry bodies, irrigation infrastructure operators, the Department of the Environment (Cwlth) and the Australian Competition and Consumer Commission.

We worked with Basin states to develop a standard way of presenting information on tradeable water market products, on our website, as part of the new requirements under the Basin Plan water trading rules. We also improved the amount of water market information available.

We provided a coordination role to ensure consistency in managing interstate water trade in the southern-connected Murray–Darling Basin. This is carried out under Schedule D of the Murray–Darling Basin Agreement — *Transferring Water Entitlements and Allocations of the Murray–Darling Basin Agreement*. We coordinated the agreement between the Basin states and the Department of the Environment (Cwlth) on amendments to Schedule D. These amendments are designed to ensure consistency between Schedule D and the Basin Plan water trading rules and improve the operation of interstate trade. The agreed amendments will carry over into the work program for 2014–15.

Figure 1.2 Tradeable water market products map

Interstate water allocation trades in 2013–14 totalled 936 GL.

Critical human water needs

The Murray–Darling Basin Agreement ensures that the southern Basin states set aside and deliver water for critical human needs. It also established processes for managing periods when normal water sharing arrangements would not provide enough water for critical human needs. The Basin Plan sets triggers — or tiers — for changing water sharing arrangements. Tier 1 is 'normal' water sharing arrangements. Tier 2 arrangements apply

during periods of very low water availability, and tier 3 arrangements are for extreme and unprecedented conditions.

During 2013–14 tier 1 water sharing arrangements were in place, meaning that critical human water needs, conveyance water and conveyance reserve requirements were met.

Work has focused on ensuring that critical human water needs is a standard part of planning and risk management for river operations, especially for the water resource assessment and annual operating plan for river operations. Lessons from the millennium drought continue to be captured, with the Basin Officials Committee considering draft objectives and outcomes for periods of tier 2 and 3 water sharing arrangements.

Monitoring and evaluation

The Basin Plan sets out the objectives against which its effectiveness should be evaluated. In 2013–14 we consulted with communities across the Basin, as well as with scientists and the Basin states, to develop evaluation questions and reporting indicators that can be used in our evaluation. The information collected will be used to develop an understanding of how, and to what extent, the Plan has affected the Basin's environment, industries and communities.

We held a series of technical workshops with Basin state and Australian Government agencies to develop a draft guideline on implementing their reporting obligations. We developed reporting indicators to evaluate the Basin Plan as a whole, as well as for the environmental watering plan, the water quality and salinity management plan, water trading rules and water resource planning. Social and economic indicators were developed through a separate consultative process (see page 31). The draft guideline was finalised in September 2013.

In late 2013 we worked with our colleagues in the Basin states and Australian Government to identify information gaps and transitional arrangements that may be required to fulfil our reporting requirements. In 2014 we carried out a study to pilot our evaluation reporting systems, processes and templates in close collaboration with Basin states and Australian Government agencies. The guideline will be updated in August 2014 after further discussions with the technical working groups based on these activities.

We have participated in over 75 stakeholder meetings within the Basin since June 2013 to develop social and economic evaluation questions and indicators. Stakeholders have included farmers, industry representatives, academics and other experts, members of councils, as well as other people who live and work in Basin towns and communities.

In 2013–2014 we began developing an evaluation framework to outline the scope of the work, the questions that will be addressed, and the evaluation methods and indicators that will be used to measure progress. We consulted extensively over a six month period with Basin states and Australian Government agencies, advisory groups, community groups, social and economic stakeholders and peak bodies to refine this document. The evaluation framework will be published in August 2014.

Each year we will produce the Basin Plan annual effectiveness report which will outline whether the intended outcomes are being achieved. It will focus on the social, economic and environmental outcomes of implementing the Basin Plan. We will also outline progress on key achievements in water recovery, sustainable diversion limit adjustment, environmental water planning and water resource planning.

We also began a study to identify opportunities to better integrate and co-ordinate Australian Government and state-based environmental monitoring at the site, asset and Basin scale. Options for integration were identified and rated on the basis of cost-effectiveness and priority. We will continue to work closely with Basin state and Australian Government partners to develop work plans to capture the opportunities for more comprehensive and cost-effective environmental monitoring across the Basin.

Social and economic analysis

Throughout 2013–14 we continued to meet with people throughout the Basin to better understand how communities and industries are adapting and responding to the Basin Plan water reforms. We also continued to build our understanding of the changes that are being driven by the Basin Plan water reforms and changes that are being driven by other factors such as commodity prices and exchange rates.

Regional wellbeing

We provided funding to the University of Canberra to undertake the regional wellbeing survey which was released in June 2014. Over 9,000 people responded to help us to better understand how communities view the Basin Plan water reforms and its impacts. The survey showed that there are a range of issues that influence the wellbeing of regional and rural communities. While water reform was identified as important in some areas, the survey did not identify it as a key driver of wellbeing.

We know that better outcomes for the Basin's communities, economy and environment will be achieved by building on the intimate knowledge of local people. From May 2013 we held over 100 meetings with people throughout the Basin. We spoke to irrigators, local councils, business owners, local people and natural resource and catchment managers. We talked about the issues that were important in their communities and industries and how the Basin Plan water reforms were affecting them.

Drawing on this feedback we have developed a framework that will allow us to continue to work with local people to understand how people are adapting and responding to the Basin Plan water reforms. This includes tracking a number of indicators over time that can be used to measure changes in the Basin's industries and communities, which will allow us to better understand the impacts of the Basin Plan water reforms.

Some of the indicators discussed in our meetings included: area irrigated, agricultural output by enterprise type, patterns of water trading, water used by irrigated agriculture, and measures of productivity. We also collected information that allows us to understand how environmental watering, as a result of the Basin Plan, is affecting communities through changes in recreational activities and tourism.

Sustainable diversion limit (SDL) adjustment

The Basin Plan includes a mechanism to adjust the sustainable diversion limits if there are commitments to invest in:

- supply measures (i.e. environmental works, or changes to river operations) — which use less water to achieve equivalent environmental outcomes to those in the Basin Plan
- efficiency measures — which provide more water for the environment without further impact on social and economic outcomes.

The Intergovernmental Agreement on Implementing Water Reform in the Murray–Darling Basin sets out a phased approach for Basin states to work together to develop sustainable diversion limit adjustment proposals. This includes establishing the Sustainable Diversion Limit Adjustment Assessment Committee chaired by the Department of the Environment (Cwlth) to advise the Basin Officials Committee. The Basin Officials Committee is responsible for selecting a package of adjustment measures by June 2016 to be assessed by the MDBA. The SDL Adjustment Assessment Committee established a technical working group to provide technical advice about the adjustment mechanism.

Our role is to help develop the SDL adjustment method by providing technical advice to states as they are developing the proposals, and to assess the final package and make a recommendation to the Minister on the amount of any SDL adjustment in 2016.

Authority members and MDBA staff continued to work with community members and state governments to better understand how communities and industry are adapting and responding to the Basin water reforms (photo by Charlotte Dennis, MDBA).

This year we have been working closely with the states to develop the SDL adjustment mechanism methodology, through the ecological elements project and development of the benchmark model. We have also assisted the SDL Adjustment Assessment Committee to prepare guidelines for developing business cases for proposed adjustment measures, provided papers and secretariat support for nine SDL adjustment assessment committee meetings and three SDL adjustment technical working group meetings.

We are continuing to develop the overall modelling methodology for the SDL adjustment mechanism which will be based on spatial analysis of each river reach using the latest inundation modelling, vegetation layers and wetland mapping.

Ecological elements

A method was developed by a consortium of experts led by CSIRO to determine whether or not an SDL adjustment would achieve equivalent environmental outcomes to the Basin Plan. The method built on previous modelling, used by the MDBA to inform the Basin Plan, by scoring environmental outcomes along the whole length of a river reach and providing greater sensitivity to changes in flow. The method needed to be science-based, fit-for-purpose, independently reviewed, and developed in consultation with the Basin states.

The states were consulted extensively during the development of the method, and an independent panel of scientists considered the method to be scientifically fit-for-purpose, subject to further testing at a regional scale. Testing is underway and will be completed by early 2015.

Benchmark model

A key part of the SDL adjustment mechanism is completing a model scenario which represents the environmental outcomes associated with the Basin Plan. The resulting environmental outcome 'scores' will be used as a benchmark against which to assess notified supply measure proposals. During the year we led the effort to finalise and complete the 'benchmark model' which is now available. The work involved consulting with the states to obtain agreement on the required changes to the original Basin Plan modelling.

Working in the northern Basin

Our work in the northern Basin includes actions to ensure that the Basin Plan is implemented with regard for its particular features and its differences to the southern Basin. The northern Basin review will carry out further research on the basis for the sustainable diversion limits.

Local advice was provided through meetings with the Northern Basin Advisory Committee as well as with key local groups including the Border Rivers Environmental Water Network, the Lower Balonne Water Network, Northern Basin Irrigators Alliance, Barwon–Darling Water, Australian Floodplain Association and local councils.

Environmental research in the Northern Basin

We engaged a small panel of scientists to review the scientific basis of the long-term average sustainable diversion limits in the northern Basin. The review focused on the

Condamine–Balonne and Barwon–Darling regions where the science underpinning the Basin Plan was less certain, and where most of the remaining water recovery is still to occur.

An important aspect of the review was consulting with communities, states and scientists. The feedback was used to shape the panel's recommendations and ensure that local issues were fully considered. The panel's findings were presented at community meetings in Dirranbandi, Narrabri, Warren and Goondiwindi in April 2014 to assist with finalising the technical report.

In early 2014 we started working with scientists and local community members to identify projects to address the key knowledge gaps identified by the science review. We focused on scoping projects that would be consistent with the approach used to set the sustainable diversion limits and have the ability to improve our understanding of the environmental water requirements. The projects will be implemented over the next 18 months and include topics such as wetland mapping, floodplain inundation modelling, waterhole persistence, cues for fish movement and waterbird breeding.

We recently completed a project to map the distribution of vegetation across the Basin (see page 45). We also worked with Queensland and New South Wales to investigate the water requirements of floodplain vegetation in the lower Balonne region. This project will provide detailed information on the water needs of key floodplain vegetation species in one of the focus areas for the northern Basin review.

Social and economic research in the northern Basin

The approach to the social and economic work will focus on understanding the potential social and economic impacts of recovering water in the Condamine–Balonne. Outcomes from this work will be combined with further hydrologic modelling work, and will guide advice provided to us in 2016 on the need to amend northern Basin content in the Basin Plan.

We held meetings across the northern Basin to reconnect with communities after the Basin Plan consultation process. In August 2013 staff visited Moree, Narrabri, Warren, St George, Dirranbandi and Goondiwindi. In April 2014 we held a second round of community meetings to provide a general update on implementing the Basin Plan.

Compliance and assurance

In April 2014 we published the compliance strategy which outlines our approach to compliance and assurance in administering and enforcing relevant parts of the Water Act and Basin Plan. The strategy includes a mix of educational, support, audit, enforcement and reporting elements to deliver a comprehensive compliance framework for enforcing the Basin Plan.

We entered into an agreement with the Basin states and the Commonwealth Environmental Water Office to identify the obligations of the parties and the tasks to be completed to meet the Basin Plan's implementation obligations. The agreement also describes our approach to discharging our regulatory obligations under the Plan. The key compliance principles outlined in the agreement include:

- working collaboratively to develop and implement the Basin Plan's compliance program
- adopting a risk management approach to underpin the compliance program
- preparing annual statements of assurance of all parties' compliance with the Plan's obligations, these will be made public
- providing reasonable access to officials and information to support the compliance program
- committing to the principle of 'collecting once and using often' in order to minimise costs to parties with compliance, assurance and all other reporting obligations.

Statements of assurance

We worked with the Basin states and the Commonwealth Environmental Water Office to agree to an annual assurance process where all parties to the implementation agreement will prepare annual statements of assurance of their compliance with Basin Plan obligations. The statements of assurance will be signed by the relevant secretary, chief executive, director-general or the Commonwealth Environmental Water Holder. From 2014 the statements will be provided to the MDBA by 31 October each year and will cover activities in the previous water year. We will publish all statements on our website.

Compliance risk assessment for the water trading rules

We continued to assess the risk associated with complying with the water trading rules. The areas which have the highest level of risk, and the greatest potential to compromise the objectives of the rules, include inappropriate trade restrictions, a lack of information or inappropriate exchange of information (insider trading).

We continue to work with the Basin states, and relevant third parties, to determine the appropriate responses to managing compliance risks in the Basin.

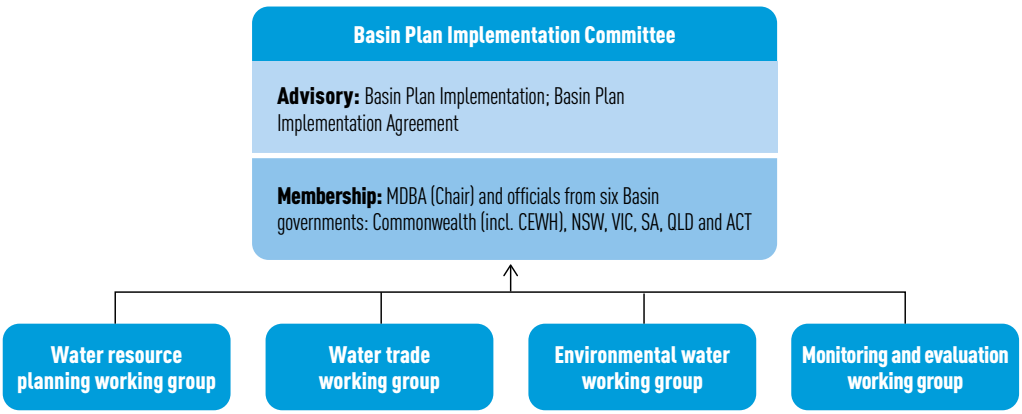
Working with the states

To effectively implement the Basin Plan, and serve the interests of Basin communities, it is essential for us to have a close and active collaboration with the Basin states. There are many complementary roles for the MDBA and the states in implementing the Basin Plan. To assist with this collaboration we developed an Implementation Agreement with the states, which was signed progressively in 2013–14. The purpose of the agreement is to:

- clarify obligations for implementing the Plan including actions, timing, guidelines, and consultation arrangements
- define where obligations between the parties rely on actions of another party
- describe our proposed approach to discharging our regulatory obligations under the Plan.

In August 2013 the Basin Plan Implementation Committee was established as a high-level forum to monitor, review and make decisions relevant to implementing the agreement. The MDBA chairs the committee and the arrangements provide a clear structure for collaborating with Basin governments to implement the Basin Plan, see Figure 1.3.

Figure 1.3 Structure of the Basin Plan Implementation Committee



A progress report on implementing the Basin Plan was provided to Ministerial Council in May which highlighted the work on the groundwater reviews, environmental watering and the northern Basin review. The four working groups, which report to the Basin Plan Implementation Committee, have met more frequently to allow the tasks under the implementation agreement to be progressed in a collaborative manner, these included:

- developing technical guidelines for the water trading rules
- working through the implementation of the Schedule 12 reporting guidelines
- providing feedback on the Handbook for practitioners on water resource plan requirements
- progressing the 2014–15 Basin annual watering priorities and the Basin-wide watering strategy
- developing a general approach on how the MDBA and the Basin states progress water resource plans which are consistent with the Basin Plan.

These arrangements provide clear structure for collaborating with Basin governments on implementing the Basin Plan. For more information see Appendix A (page 188).

Engaging communities and interest groups

The MDBA works closely with local communities and different interest groups in implementing the Basin Plan. We recognise that the people who live and work in the Basin have a deep knowledge of their part of the Basin and are well placed to inform decisions about how to manage it. For more information on the roles and membership of our advisory committees see Appendix A (pages 193 to 194).

Introducing Rory Treweeke the new Chair of the Basin Community Committee

Rory Treweeke has been a member of the Basin Community Committee since June 2009 and in May 2013 was appointed Chair for the committee's second term.

Rory is a broadacre farmer and grazier with a family connection to the Narran River area, in southern Queensland and northern New South Wales, for over a hundred years.

The climate here is semi-arid, with more than half our annual rainfall occurring in summer. The drought of the first decade of this century, followed by two major floods and a record flood, in three consecutive years highlights the extreme variability of this climate.
- **Rory Treweeke**

Rory has been a member of three Queensland water planning committees for the lower Balonne and Chair of the Barwon–Darling River Management Committee. He is a member of the Western Lands Advisory Council and the Great Artesian Basin Advisory Group.

(Photo courtesy of Western Local Land Services, NSW)

(Photo courtesy of the Jones family)

Saying goodbye to Henry Jones

The MDBA pays tribute to long-standing River Murray campaigner, Henry Jones, who sadly passed away on 15 April 2014.

As a fourth-generation South Australian fisherman, Henry used his practical knowledge of the river environment to raise awareness of Basin issues and help shape the Basin Plan.

Henry contributed thousands of hours of expert local knowledge and perspective on important environmental issues to the MDBA. He was a long-standing representative on many Murray–Darling Basin Commission and later Murray–Darling Basin Authority committees. In early 2013 he was the first community member to be awarded the River Murray Medal for outstanding service to the River Murray.

In 2013–14 we held over 145 community meetings throughout the Basin to provide updates on implementing the Basin Plan as well as targeted consultation on key pieces of work, including the constraints management strategy. In 2013 we published a report that summarised feedback on the draft constraints management strategy and we continued to consult with community reference groups.

The Basin Community Committee began its second term on 1 July 2013. The committee was established under the Water Act to provide a community perspective on a wide range of water resource, environmental, cultural and socioeconomic issues.

This year the Basin Community Committee concentrated its efforts on building links with other community and advisory groups to ensure that local engagement was coordinated and targeted. The committee's irrigation subcommittee provided advice to the MDBA on drafting the technical guidelines for the water trade rules to ensure that they could be understood by a wide audience.

During the year the Northern Basin Advisory Committee continued to provide valuable independent advice on how an adaptive Basin Plan can be implemented in the northern Basin. The main focus of the committee in 2013–14 was their northern Basin work program, and identifying and prioritising key northern Basin issues. The committee met during the year in Bourke, Canberra, Narrabri and Moree.

The Advisory Committee on Social, Economic and Environmental Sciences provides high-level strategic advice on a range of scientific matters relevant to implementing the Basin Plan. The diversity of the members' skills helps to ensure that our work is based on the best possible scientific advice. In 2013–14 the committee provided advice on key policy and implementation issues including: the northern Basin science review, the Basin-wide watering strategy, the constraints management strategy, the SDL adjustment mechanism, and monitoring and evaluation.

Working with Aboriginal Nations

The Aboriginal Nations in the Basin have a deep connection with their land and waters and are important advisors in managing the Murray–Darling Basin. In 2013–14 we sought advice from the Northern Basin Aboriginal Nations and Murray Lower Darling Rivers Indigenous Nations on core components of implementing the Basin Plan. These included developing the constraints management strategy and the Basin-wide environmental

watering strategy, as well as groundwater sustainable diversion limit reviews, developing water resource plans and progressing the northern Basin work program.

In November 2013 Authority member Barry Hart participated in a televised panel discussion — Murray–Darling Rivers, can Indigenous stories reshape 21st century policy — at the National Press Club. The MDBA-sponsored documentary '*Ringbalin — breaking the drought*', as well as the Ringbalin website and smart phone app were released after almost four years working with the Aboriginal peoples of the Murray–Darling Basin, see <www.mdba.gov.au/what-we-do/working-with-others/aboriginal-communities/ringbalin>.

We continued to support the National Cultural Flows Research Project which will make a significant contribution to water planning and management in the Basin. The project completed a literature review, in late 2013, which documented known Indigenous uses and values of water in Australia and internationally. The project also appointed a research team and identified trial sites to quantify cultural flows and identify the cultural outcomes.

In April 2014 representatives from the Murray Lower Darling Rivers Indigenous Nations, Indigenous icon site facilitators, their state program coordinators, and MDBA staff met in Echuca to share knowledge and experiences in managing cultural heritage. The workshop focused on building knowledge about The Living Murray Indigenous Partnerships Program (see page 55) and extending the lessons learnt.

Cultural health index

In Australia there is no recognised system in place to help describe, measure and compare cultural values in relation to rivers and wetlands. In September 2013 we organised for Murray–Darling Basin Aboriginal leaders to meet with Māori Elders to learn how Māori culture is factored into water management in New Zealand. They investigated the potential for adapting the Māori 'cultural health index for streams and waterways,' and other methodologies, for water planning and managing processes in the Murray–Darling Basin.

Representatives from the Murray Lower Darling Rivers Indigenous Nations, the Northern Basin Aboriginal Nations, the National Cultural Flows Planning and Research Committee, and regionally based Aboriginal water professionals met with experienced Māori leaders and researchers to find out more about how they are recording, evaluating and describing cultural values in water management.

We began trialing components of the cultural health index in the Murray–Darling Basin. This will help to test the value of this system as a way of helping Aboriginal people articulate their cultural values for input into water planning processes in Australia.

Paul Lane (left), a member of the National Cultural Flows Planning and Research Committee, met with Mikaera Miru at the Indigenous freshwater hui at Otamatea Marae in New Zealand, September 2013 (photo MDBA).

Royal spoonbill above the Lowbidgee floodplain, the largest remaining area of wetlands in the Murrumbidgee Valley, NSW (photo by Tom Chesson)

OBJECTIVE 2

CHAPTER 2
RESTORING RIVER AND ECOSYSTEM HEALTH

To protect, restore or improve the ecological health and resilience of the Murray–Darling Basin's key rivers, wetlands and other ecosystems which depend on water

Our performance	p. 41
Environmental watering plan	p. 44
Basin-wide environmental monitoring	p. 45
Constraints management strategy	p. 46
The Living Murray river restoration program	p. 48
River Murray water quality monitoring program	p. 55
Managing salinity	p. 57
Staff snapshots	p. 59

Overview

In 2013–14 we made significant progress towards implementing the framework for managing environmental watering across the Basin. There was a strong collaborative effort to lay the foundation for future years with Basin governments agreeing to the tasks to implement the Basin Plan.

We worked with state and Australian Government water holders, and waterway managers, to identify the second Basin annual environmental watering priorities, to guide environmental watering for 2014–15. Along with Basin governments we also formed the Environmental Watering Working Group to oversee the implementation of the environmental watering plan framework for the Basin.

This year almost all the environmental watering priorities identified for the Basin were delivered in full, with some catchments experiencing their largest environmental watering events to date. The watering aimed to build on the improving health of the Basin's key rivers, wetlands and ecosystems which had been triggered by high flows after the millennium drought. This continues to build resilience in river systems so that they are better able to withstand future droughts.

The Living Murray program, along with environmental water provided by the states, and the Commonwealth Environmental Water Office, improved the condition of the River Murray and made sure that the river continued flowing to the sea. We published the constraints management strategy in November 2013 which identified the major impediments to environmental water delivery in the Basin. The strategy identified key operational, management and physical constraints to getting the best environmental outcomes and laid out a plan for Basin governments to address over the next decade.

Challenges and the year ahead

In 2013–14 we broke new ground with many of our activities, in particular the constraints management strategy. A key challenge is to ensure that Basin reforms do not create new risks to water reliability for entitlement holders. Implementing the constraints management strategy will also be challenging, to ensure that environmental water is used as effectively and efficiently as possible.

We also need to maintain the flexibility necessary to deliver environmental water while adapting to changes in seasonal and river conditions. There is already a strong basis for this with environmental water holders and river managers across the Basin delivering environmental water in harmony with natural cues.

In the year ahead we will be finalising the Basin watering strategy which will provide a guide for environmental watering across the states to achieve Basin-wide outcomes. A significant achievement in 2014–15 will be informing Basin governments on the feasibility of addressing constraints to delivering water. For the next 15 years we will also be facilitating salinity management across the Basin.

Highlights

- Published the constraints management strategy which sets out the objectives for a 10 year program of improving river operations, to get the best use of available water for environmental and consumptive purposes.
- Published the first Basin environmental water outlook, and the 2014–15 Basin annual environmental watering priorities.
- The Living Murray program delivered 326.6 gigalitres of The Living Murray water to the icon sites. The program delivered its 1,000th gigalitre of environmental water in November 2013.
- Environmental watering helped keep the Murray Mouth open without the need for dredging.

- Revised the ecological objectives for the River Murray Channel icon site.
- Delivered the revised water quality monitoring program for the River Murray and its major tributaries.
- Diverted about 397,739 tonnes of salt from the River Murray through the operation of salt interception schemes.
- Conducted a general review of salinity management in the Basin, to understand the salinity risk and appropriate management actions.

Our performance

Program performance is measured against deliverables and key performance indicators in the *Portfolio Budget Statements 2013–14* of the Sustainability, Environment, Water, Population and Communities portfolio. A summary of our performance against the deliverables and indicators related to strategic goal 2 is provided in Table 2.1.

Table 2.1 Deliverables from the portfolio budget statements for goal 2 — Restoring river and ecosystem health

DELIVERABLES	KEY PERFORMANCE INDICATORS	RESULTS	PAGE[6]
Publish the Basin annual environmental watering priorities	Basin annual and long-term environmental watering priorities are met	Initial assessment to date indicates that all priorities were at least partially met, and most were fully met	44
	Basin annual environmental watering priorities add a Basin perspective over and above state priorities	The first environmental watering outlook was published in April 2014	45
	Annual revisions to Basin annual environmental watering priorities take account of experience from previous water years	The second Basin annual environmental watering priorities were published in June 2014	44
Develop draft Basin environmental watering strategy	Basin Plan implementation is improving the health of water-dependent ecosystems and ecosystem functions in the Basin, as indicated by the targets in Schedule 7 of the Basin Plan	Significant progress on developing the draft Basin environmental watering strategy, to be finalised in November 2014	44
Publish a report that identifies and accounts for the use of held environmental water in the Basin each financial year		An account of the use of all held environmental water was undertaken and will be published in the Murray–Darling Basin Water Resource Report 2012–13	44
Develop a constraints management strategy and progress the sustainable diversion limit adjustment mechanism[7]	Basin Plan actions on SDL adjustment and constraints management demonstrates a balanced approach to achieving social, economic and environmental outcomes	Published the constraints management strategy in November 2013	46
		Method for scoring ecological outcomes developed for use in the SDL adjustment mechanism. Initiated a trial implementation of the SDL adjustment assessment framework	32

DELIVERABLES	KEY PERFORMANCE INDICATORS	RESULTS	PAGE[6]
Approve The Living Murray annual water plan and obtain relevant approvals	Positive report of the Independent River Operations Review Group (IRORG) endorsed by the Basin Officials Committee in relation to The Living Murray water	The Living Murray annual environmental water plan 2013–14 published and the 2014–15 plan approved. IRORG confirmed that watering is operating within agreed processes and approvals	49
Approve contracts for effective icon site environmental management and The Living Murray monitoring priorities	Annual watering plan agreed and priorities for monitoring agreed and contracted	Priorities for monitoring agreed, contracted and completed	52
Establish effective cooperation between environmental water holders	Reduced barriers to the efficient and effective use of environmental water	Established the Environmental Water Working Group to assist in implementing the Basin Plan	44
		In principle agreement by Basin ministers to broaden the cooperation forum, already being used for TLM, to all environmental water	49
		TLM annual environmental water planning developed in consultation with TLM partner governments	49
		Coordination with other environmental water holders to deliver a total of 1,204 GL of environmental water to TLM icon sites. Operational and policy barriers to watering identified in the constraints management strategy	49, 89
Develop a conservation planning process to underpin environmental delivery in line with the recommendations of the CSIRO-led review 2011		Working in partnership with the Commonwealth Environmental Water Office we developed a classification of aquatic ecosystems in the Basin which could provide the basis for a planning system	72
Develop Basin Plan reporting, evaluation and audit framework that allows assessment of ecosystem health function and response		The approved evaluation framework included methods for assessing the effect of the Basin Plan on ecological outcomes	45, 53
Carry out River Murray water quality monitoring program as supported by joint governments		Data has been collected by the states	55

DELIVERABLES	KEY PERFORMANCE INDICATORS	RESULTS	PAGE[6]
Develop a method for estimating salt discharge from River Murray system	Salinity accountability framework assists governments in meeting agreed outcomes	This has been developed and implemented, and was reported in the first Basin Plan effectiveness report	57
Produce material to support implementation of the water quality and salinity management plan		Guidelines for implementing the water quality and salinity management plan included in the handbook for practitioners, published in October 2013	28
Prepare salinity registers and reports		The salinity registers and the outcomes of the independent salinity audit were published	58
Compile, analyse and report water quality data	Water quality and salinity targets in the Basin Plan are met and risks are considered and mitigated, consistent with clauses 8.36, 8.58 and 9.14 of the Basin Plan	Water quality and salinity targets met and published on our website	55
Develop an agreed position on the links and interactions between the Basin Plan and Schedule B of the Murray–Darling Basin Agreement		A general review of salinity management in the Basin was completed which identified linkages between the Basin Plan and Schedule B of the Agreement	58

6 Some deliverables and key performance indicators go across goals so results will also be found in other chapters.

7 This deliverable has been moved from goal 1, as it more accurately fits within this goal.

Environmental watering plan

Our major achievements during 2013–14 were:

- publishing the environmental watering outlook in April 2014
- developing and publishing the second set of Basin annual environmental watering priorities in June 2014
- developing the first draft of the Basin-wide environmental watering strategy, due to be completed in November 2014
- consulting throughout the Basin on implementing the environmental watering plan
- establishing the Environmental Water Working Group, which assists the MDBA, Basin state and territory governments and the Commonwealth Environmental Water Holder to coordinate the implementation of the environmental watering plan
- liaising with a network of eminent scientists and practitioners to provide strategic advice on water strategies to achieve environmental outcomes for the Basin-wide strategy for watering activities
- scoping to further develop an environmental assets and functions database or information system to support the implementation of the environmental watering plan.

The stakeholder consultation during the development of the environmental watering plan, Basin annual watering priorities and Basin-wide environmental watering strategy was extensive. We consulted with scientists, practitioners, Basin state governments, Aboriginal groups and individuals, key landholders, environmental water holders, river operators and the wider community.

Basin annual environmental watering priorities

The annual environmental watering priorities are designed to influence regional-scale environmental watering towards Basin-scale ecological outcomes and to promote coordinated environmental watering between environmental water holders and managers.

The seven environmental watering priorities for 2014–15 were focused around three themes — connecting rivers and floodplains, supporting in-stream functions and enhancing and protecting refuge habitat.

We identified three strategies for managing water for environmental benefits:

- maximise environmental benefits through the use of all water
- coordinate and collaborate through effective governance arrangements
- manage water in harmony with natural cues.

The priorities for 2014–15 are not a list of all important environmental sites and processes in the Basin and they do not exclude other priorities that take a more local perspective. They are the priorities for sites, processes or activities which are important this year to achieve outcomes which are significant at a Basin level. They complement the more detailed planning done at a local scale by states and other environmental water holders.

Young cormorants in Barmah–Millewa Forest. Waterbird breeding was only recorded at eight of the 39 targeted wetlands this year (photo by Keith Ward).

This year we produced an environmental watering outlook statement to help give early context to the Basin watering priorities. The outlook statement profiled some of the recent large-scale watering, the previous few years of climate and flow patterns and anticipated seasonal conditions to identify potential watering priorities for 2014–15.

Basin-wide environmental monitoring

Co-ordination of Basin and asset-scale monitoring

The overlapping responsibilities of the MDBA, the Commonwealth Environmental Water Office, and the Basin states for environmental monitoring creates the opportunities to integrate and co-ordinate monitoring activities at the Basin, asset and site scale. We continued this work in 2013–14 to enhance the capacity of the MDBA, and our Basin partners, to meet our collective responsibilities for environmental monitoring and reporting.

Floodplain tree condition assessment

Vegetation information is vital for understanding the response to environmental watering. We are carrying out major projects to acquire, validate and standardise the coverage and extent of mapped vegetation types and their condition in the Basin.

This year we acquired RapidEye satellite imagery across the major rivers of the southern and northern Basin. This improved our ability to assess the condition of key floodplain tree stands (river red gum, black box and coolabah). This work builds on The Living Murray's tree condition assessment work (see page 54), and will enable a Basin-wide remote sensing assessment to be completed early in 2014–15. Field site condition assessments have been completed across all valleys in the Basin, and will be used to apply the remote sensing stand condition assessment across much larger areas.

Annual aerial waterbird survey

For the fourth year an annual waterbird survey was conducted across 39 targeted wetlands throughout the Basin, including all The Living Murray icon sites, Ramsar sites and key sites of significance for bird breeding events.

The bird survey estimated over 350,000 birds across all 39 sites, representing 51 species. The highest waterbird abundances were recorded in the Paroo overflow lakes and at the Lower Lakes and Coorong wetland sites. The Lower Lakes and Coorong also had the highest species diversity, with 46 species recorded. Waterbird breeding was only recorded at eight of the 39 sites this year.

Analysis of fish and macroinvertebrate data 2010–13

This year the final fish and macroinvertebrate data collected under the Sustainable Rivers Audit program was analysed, and the 'wetter' years of 2010–13 were compared to previous sampling cycles during the millennium drought. Initial assessment showed that responses to the wetting of the Basin varied from valley to valley and across the indicators. A more in-depth analysis to draw out the patterns is underway, with results to be reported in 2014–15.

Constraints management strategy

The constraints management strategy, published in November 2013, identifies nine priority operational and management constraints relating to how dams and rivers are managed and how these could be improved to get better environmental outcomes.

In the remainder of 2013–14 we focused on four of the nine priority constraints. These are:

- using environmental water in response to natural cues, and restoring natural variability
- ensuring environmental water remains in-stream to target a range of sites and ecosystem functions in and between rivers
- promoting the management of all water in the system to contribute to environmental benefits
- developing an equitable and transparent arrangement for sharing channel capacity.

These constraints currently restrict the use of environmental water and so limit the river and wetland health benefits that we can achieve. Often the constraint is not the policy, rule or process itself but the absence of provisions to allow for the effective delivery of environmental water in the river.

Physical constraints include structures along or near the river, such as bridges and roads, which stop the delivery of water to some areas at the volumes, or times, when it is needed most. The constraints management strategy identified seven locations where physical constraints limit our ability to deliver environmental water, these are:

- Hume to Yarrawonga (upper River Murray)
- below Yarrawonga to Wakool Junction (mid-Murray)
- Goulburn River
- Murrumbidgee River
- lower Darling River
- Gwydir
- South Australia (lower River Murray).

Consultation on the draft constraints management strategy

To help develop the constraints management strategy we worked with local communities to share information and gain knowledge relating to river flows. During 2013–14 we held more than 70 meetings with Basin communities to:

- share information about the purpose and requirements of the strategy
- understand how communities would like to be engaged
- access knowledge and expertise of river flow patterns.

Throughout the year we also consulted with Basin states to:

- discuss the proposed approach to developing the strategy
- share information gained from consulting with communities
- progress the development of the strategy.

MDBA staff from the constraints team met with landholders to share information and gain knowledge about river flows (photo by Anastasia Stramarcos, MDBA).

We held a three-week public comment period on the draft strategy in October 2013. This included more than 20 briefing sessions in regional areas of the Basin, including constraints-specific workshops in Shepparton, Deniliquin, Mannum, Tulney Station (near Mildura), Moree, Narrandera and Corowa. We also facilitated discussions at meetings in Shepparton, Deniliquin, Mildura, Mannum, Renmark, Moree, Griffith and Narrandera.

We published a public feedback report that included concerns and ideas from community members and reported on how this was used in developing the strategy.

Phase 1 Pre-feasibility stage

We are on track to completing a pre-feasibility level assessment of constraints by late 2014. This includes:

- completing inundation mapping and sharing this information with regional communities to better understand where water flows at a local level
- assessing the potential environmental outcomes, impacts and benefits that may result at the various flows under consideration
- investigating what could be done to overcome any negative impacts (for example it might be possible to raise the height of a road or establish an easement on private property to allow higher river flows to pass).

We began assessing the costs associated with mitigating the impacts of higher flows. These include the costs associated with negotiating easements with landholders, to allow higher flows over parts of their land, as well as possible construction costs, such as works on roads or river crossings.

We used independent consultants to develop methods for estimating the costs of acquiring easements, and for infrastructure works. The consultants have started to apply these methods by using information such as the expected patterns of inundation under different flow scenarios.

The results of this work will be published in the first constraints management strategy annual report, which will be presented to ministers in November 2014. We will also publish reach reports which will provide information on what addressing the constraints will mean for communities.

In 2014–15 we will also make recommendations to Basin ministers about which constraints projects to continue investigating, as well as recommending ways to improve operational practices so that water can be used more effectively. We will continue to collect more detailed information on what this will mean for communities.

The Living Murray (TLM) river restoration program

The Living Murray was established in 2002 in response to evidence of the declining health of the River Murray system. In November 2003 the Murray–Darling Basin Ministerial Council announced The Living Murray First Step Decision, targeting the recovery of about 500 gigalitres of water to be used to protect and restore the environment. An environmental works program was also established to assist with environmental water delivery and optimise the environmental benefits from this water.

The focus of The Living Murray is to improve the environmental health at six 'icon sites' along the River Murray through the use of environmental water.

The Murray–Darling Basin Authority coordinates The Living Murray activities on behalf of The Living Murray partner governments (New South Wales, Victoria, South Australia, Australian Capital Territory and the Australian Government). These activities include planning and delivering environmental water, constructing and commissioning water management structures, monitoring environmental watering outcomes, modelling to support planning and decision making, and engaging with local communities.

Further information on water modelling can be found on page 64, and for the water management structures see page 76.

The Living Murray environmental watering

Planning and delivering environmental water is coordinated under the direction of the Environmental Watering Group, an advisory group with representatives from all The Living Murray partners. Throughout 2013–14 we coordinated watering activities that helped achieve a range of icon site and system-scale ecosystem outcomes.

Figure 2.1 Location of The Living Murray icon sites

Environmental water planning

Environmental water delivery is guided by The Living Murray environmental watering plan. This plan is developed annually on behalf of the Environmental Watering Group in consultation with TLM partners, River Murray operators and other environmental water holders.

In July 2013 we published the *Annual environmental watering plan 2013–14*. We also brought forward the development of the annual environmental watering plan 2014–15 so that it would be ready for the commissioning of major new water management structures. The commissioning of structures began in late May 2014 and will continue into 2014–15.

The annual planning for TLM is underpinned by a number of planning documents at each icon site. Operating plans have been developed to inform the delivery of environmental water using the water management structures which have been constructed at some icon sites. This year, in collaboration with state governments and catchment management authorities, we finalised the operating plans for structures at Gunbower Forest and Chowilla Floodplain.

In November 2013 Ministerial Council approved the *Drought emergency framework for lakes Alexandrina and Albert*. This framework, which is based on the latest scientific knowledge, provides guidance to manage the lakes during times of extreme drought. In particular, it focuses on avoiding or mitigating environmental impacts such as acidification and elevated salinity levels which become prevalent during times of low water levels.

In May 2014 the Environmental Watering Group endorsed a set of interim revised ecological objectives and a potential range of watering options for the River Murray Channel icon site to help optimise the outcomes in the river through the delivery of environmental water to other icon sites.

Environmental water delivery

In November 2013 the 1,000th gigalitre of TLM water was delivered which marked an historic milestone for The Living Murray program.

In 2013–14 six icon sites received a total of 326.6 gigalitres of TLM environmental water. By coordinating flows from the Murray, Goulburn and Campaspe systems with other environmental water holders, TLM environmental water was delivered to achieve the maximum ecological benefit at multiple sites throughout the River Murray system.

Extending flows to benefit Moira grass and breeding waterbirds

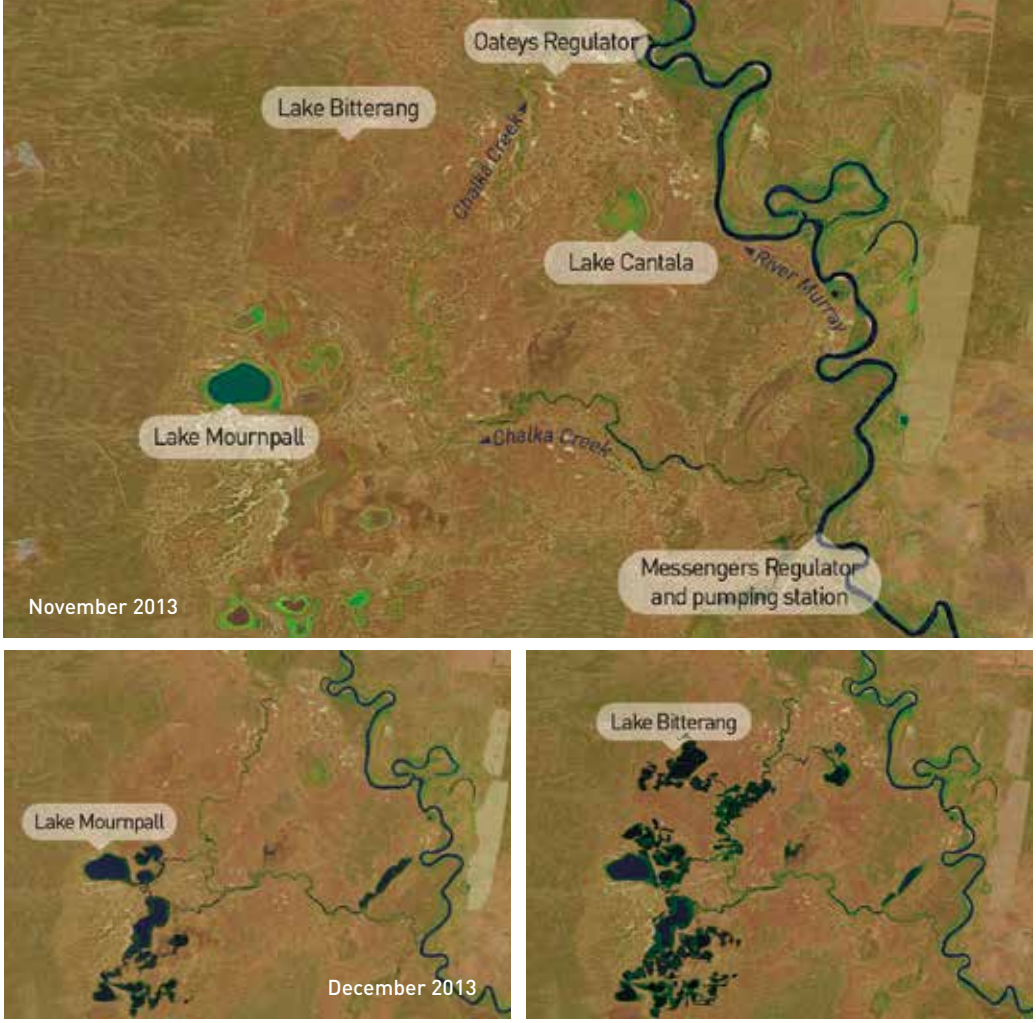
High natural flows in the upper River Murray system from July to October 2013 inundated large areas of the Barmah–Millewa Forest icon site. As natural flows began to recede in October The Living Murray, along with the Commonwealth Environmental Water Office, coordinated environmental watering to extend the duration of the inundation to early December. These flows enabled Moira grass, a threatened vegetation community, to successfully grow, flower and produce seeds. This was the strongest Moira grass response in seven years.

The high natural flows also initiated waterbird breeding in Barmah–Millewa forest. The Living Murray, New South Wales and the Commonwealth Environmental Water Office provided environmental water to enable the birds to complete their breeding cycle. This allowed hundreds of birds to fledge, including white ibis, cormorants, darters and spoonbills.

The high flows enabled the commissioning of regulators and other structures at Mulcra Island using TLM unregulated environmental water. These flows connected the River Murray Channel with floodplain and wetland sites, generating a strong response from river red gums and aquatic vegetation.

Commissioning the water management structures at Hattah Lakes began in October 2013. The flows used for commissioning also provided considerable ecosystem benefits including watering Lake Bitterang, a lake which had not received water in 20 years. Observations in Hattah Lakes included strong growth of river red gum leaves, increased numbers of juvenile fish (including Murray cod, silver perch and golden perch) and a large number of waterbirds (particularly ducks and grebes).

The Hattah Lakes water management structures include large pumps to help bring water from the River Murray into the lakes system (photo by Heather Peachey, MDBA).



Aerial photos showing the effects of environmental watering at Hattah Lakes from November 2013 to January 2014 when Lake Bitterang received water for the first time in 20 years.

At Gunbower Forest TLM environmental water used for commissioning and testing the new regulator was also used to inundate up to 4,750 ha of wetlands and river red gum forest.

The Living Murray contributed 137 GL, to a combined total of 450 GL, to the lower River Murray Channel and Lower Lakes, Coorong and Murray Mouth icon site between October 2013 and February 2014. This was a coordinated environmental watering action with the Commonwealth Environmental Water Holder and also incorporated the flows returning to the river from Barmah Forest and Hattah Lakes.

This environmental watering provided benefits throughout the lower Murray system such as providing cues for the spawning of golden perch and silver perch in the River Murray Channel. The increase in flows through the barrages, provided by TLM and the Commonwealth Environmental Water Holder, kept the Murray Mouth open without the need to use a dredge. The flows also maintained higher water levels in the South Lagoon of the Coorong during spring which provided suitable conditions for *Ruppia tuberosa* to flower and fruit. *Ruppia* is the Coorong's key aquatic plant and provides food and habitat for waterbirds.

Throughout 2013–14 small volumes of TLM environmental water were also provided to support vegetation, waterbirds and frogs in key wetlands in Chowilla. Further information on The Living Murray environmental water delivery can be found on our website <www.mdba.gov.au>.

Monitoring wetland condition at Barmah Forest (photo by Keith Ward, Goulburn Broken Catchment Management Authority)

The Living Murray environmental monitoring

The Living Murray environmental monitoring program provides information about responses to environmental watering actions and the environmental condition of The Living Murray's icon sites. This information supports the evidence base for administering The Living Murray watering and management actions.

Monitoring includes real-time information for managing watering events, such as water quality, and medium to long-term information to assess progress toward the icon site ecological objectives. Three types of monitoring are conducted as part of The Living Murray monitoring program — icon site condition monitoring, intervention monitoring and River Murray system-scale monitoring.

Icon site condition monitoring

Icon site condition monitoring provides information about the environmental condition of individual icon sites, including how the condition changes through time. Icon site condition monitoring focuses on fish, waterbirds and vegetation, consistent with icon site ecological objectives.

Improvements in the condition of The Living Murray icon sites observed since the return to wetter conditions from 2010 to 2012 have generally continued in 2013–14, with the assistance of environmental water. There have been improvements in the condition of floodplain trees and other vegetation. Waterbird and native fish responses varied across the icon sites where local conditions influenced recruitment, abundance and diversity.

In 2013–14 icon site managers developed synthesis reports for each icon site bringing together the monitoring results into a single document. We also refined the icon site condition monitoring plans by developing more clearly defined ecological targets to help improve future assessments.

Intervention monitoring

Intervention monitoring assesses ecological and other responses to The Living Murray watering and management actions. It provides the major link to understanding how specific environmental management actions result in changes at icon sites, enabling an adaptive management approach.

The priority projects this year monitored the commissioning of The Living Murray water management structures at Mulcra Island, Hattah Lakes and Gunbower Forest. Knowledge from these projects is critical for managing the initial use of the structures and for optimising their future use to achieve environmental outcomes at the icon sites, and across the whole River Murray system.

Other significant projects were conducted to improve our understanding of the responses of fish and vegetation, as well as of the processes that can cause blackwater events. One study found that local factors and conditions have an important role in determining the composition of vegetation communities, and that watering actions needed to target germination, seed set and dispersal in order to support a healthy seed bank. Wetland drying phases were also confirmed as important.

River Murray system-scale monitoring

Monitoring at the system-scale level is designed to assess whether The Living Murray program has improved the overall health of the River Murray system. In 2013–14 system-scale monitoring included floodplain tree-stand condition monitoring and fish recruitment in response to flows across the River Murray system.

The floodplain tree-stand condition monitoring project, now in its sixth year, has used previous year's results and new satellite images to finalise a new stand condition mapping tool. This tool has been extended to assess the condition of floodplain forests in the northern Basin, see page 32.

Monitoring also examined the recruitment of native fish species (Murray cod, trout cod, golden perch and silver perch) across the River Murray system in response to environmental watering. The results indicated that significant populations of Murray and trout cod were recorded across the River Murray system in response to flows, including TLM environmental water. This suggests that there has been strong survival of fish, past the vulnerable early and juvenile life stages, into the adult stage.

More information about The Living Murray monitoring program can be found on the MDBA's website <www.mdba.gov.au> and in MDBA's Knowledge and Information Directory <www.mdba.gov.au/kid>.

Murray cod love snags

Snags — trees, branches and roots found in rivers — provide extremely important habitat for aquatic life, particularly native fish. In the past many snags were deliberately removed from rivers but more recently an increased understanding of their importance has led to significant efforts to reinstate this vital habitat.

The Living Murray program funded a re-snagging program between Hume Dam and Yarrawonga as well as a long-term monitoring program, from 2007–13, to see if there were any benefits. Monitoring results showed a three-fold increase in Murray cod populations in the re-snagged area. The results for other species were less clear.

In April 2014 we met with icon site Indigenous facilitators and state program facilitators to share knowledge and experiences in managing cultural heritage (photo by Noelene Edwards, MDBA)

The Living Murray Indigenous Partnerships

The Living Murray Indigenous Partnerships Program enables Aboriginal community knowledge, values and perspectives to be considered in each of the icon site management plans.

This year the program employed five Indigenous facilitators to identify opportunities for planning and managing the icon sites, and to ensure that Aboriginal knowledge and cultural values are considered and protected.

Major highlights for 2013–14 included:

- the Yorta Yorta Elders Council were briefed on the outcomes of the 2013–14 watering event and the seasonal watering proposal for 2014–15
- work continued on the pygmy perch study (co-funded project with Goulburn Broken Catchment Management Authority), midden fish fauna study, and freshwater turtle research (joint project with Charles Sturt University)
- 17 Barapa Barapa people were trained to carry out field surveys for the Barapa Barapa Cultural Heritage Mapping Project at Gunbower in February 2014
- before and during construction of the water management structures at Hattah Lakes the Indigenous icon site facilitator built positive working relationships with agencies to ensure that the concerns and advice of Aboriginal community members about the protection of cultural heritage were considered
- the construction of water management structures at Chowilla Floodplain included site survey work by Aboriginal site monitors to ensure that cultural heritage was protected
- the South Australian Department of Environment, Water and Natural Resources worked with the Ngarrindjeri Regional Authority to ensure Aboriginal involvement in environmental water planning, operating infrastructure, condition and intervention monitoring and organising cultural events such as 'My Coorong rules' (a cooking showdown), and tour of Raukkan, Teringie wetlands and Camp Coorong.

River Murray water quality monitoring program

The MDBA coordinates the River Murray water quality monitoring program, which is carried out jointly by the southern Basin governments. It covers a range of geographic areas and has been going for a considerable period (34 years). The dataset is now a significant asset as long-term monitoring of this duration and scope is very rare.

During 2013–14 we significantly revised the monitoring program to continue delivering an effective program with a reduced budget. The revised monitoring program, delivered in partnership with New South Wales, Victoria and South Australia, is based on weekly sampling at 18 sites in the River Murray and monthly sampling at 10 sites in the major tributaries.

We also completed an update of the trend analyses of the long-term water quality data collected over the last 34 years. We continued monitoring macroinvertebrates in the Murray and Mitta Mitta rivers, providing data for use in assessing the effect of physico-chemical changes in water quality on river organisms. We trialled a DNA technique to identify and detect organisms from water samples which took less time and cost less than using traditional taxonomic methods.

Key highlights included:

- analysing the River Murray long-term water quality data which indicated an overall reduction in the concentration of nutrients, salt and organic matter at the Basin Plan target site of Morgan, South Australia, indicating improved water quality for downstream users
- publishing a web-based guide to freshwater macroinvertebrates (bug guide) on the Murray–Darling Freshwater Research Centre website <www.mdfrc.org.au/bugguide>
- analysing the macroinvertebrates data which indicated a significant reduction of biological condition during the millennium drought (2007–10), along with the highest abundance of macroinvertebrates typical of unhealthy systems. Following the 2011 floods the macroinvertebrate community had begun to recover, indicating that the biological health, and resiliance of the system, would improve if appropriate flow conditions were maintained.

MDBA staff member Tapas Biswas collecting bugs from the River Murray to help the Murray–Darling Freshwater Research Centre monitor river health (photo by Rob Cook, Murray–Darling Freshwater Research Centre)

Acid sulfate soils

Monitoring acid drainage from the Lower Murray Reclaimed Irrigation Area continued during the year. We assisted South Australia's environment protection agency with funding to collate and report on the monitoring results. This added to the previous joint project examining the nature and risks of acid sulfate soils.

Monitoring continues to show that the effects of re-wetted acid sulfate soils on water quality is still ongoing in the lower Murray irrigation area even after the 2011 flood and high river flow. The acid drainage water from the Lower Murray Reclaimed Irrigation Area is quickly diluted and neutralised in the localised mixing zone before entering the main river channel. Dilution and metal precipitation occurred rapidly, and guidelines were only exceeded by an insignificant amount outside the immediate mixing zone, compared with the main river channel.

Development proposal referrals

Under the Water Act, the Basin states refer development proposals that may significantly affect the flow, use, control or quality of River Murray water to the MDBA for assessment. About 40 proposals were referred during 2013–14. To streamline the referral process, we began consulting with state water and environment regulatory authorities to develop guidelines for identifying the types of proposals to be referred for assessment.

Pest fish management

Pest fish management, including the control of tilapia and carp, remained a priority matter in 2013–14, with the threat of tilapia invasion in the northern Basin and the ongoing increase in carp numbers following floods.

Implementation of the northern Basin tilapia exclusion strategy was accelerated by the investment of joint funds. Projects include developing robust site monitoring, setting up a community surveillance program, communicating consistent messages about the risks of translocating fish, developing innovative community engagement approaches, and strengthening and building partnerships with a variety of stakeholders.

Investment in the management of carp in the Basin has resulted in the development of a model to predict potential response of carp to flow events and recommend guidelines for managing flows and carp. Consultation with the Commonwealth Environmental Water Office and MDBA staff has ensured that the guidelines will be practical and will inform future decisions.

Finnley's great escape

With the Basin facing the risk of being invaded by the pest fish tilapia the Condamine Alliance used funding provided by Basin governments, through the MDBA, to raise awareness about the fish. *Finnley's great escape* is a children's book which raises awareness about the devastating impacts that tilapia can have on native fish and water quality. The book was written by 13 children from the Condamine catchment, with the assistance of a local author, Emma Mactaggart, and has been endorsed by Jackie French, the Australian National Children's Laureate for 2014–15.

The book was launched in May 2014 and 1,500 copies were distributed to schools, educational institutions and community groups. The Condamine Alliance also met with 42 stakeholder groups, distributed education material to 120 stakeholder groups, and held 28 engagement and community events which resulted in conversations with over 2,000 people

Showcasing river restoration

Joint government funds were provided for five demonstration reaches in the Basin to showcase the success and value of rehabilitating river reaches under the demonstration reach concept. A number of community engagement events were held, including the highly successful 'Day on the Kat' where more than 70 community members toured the Katfish Demonstration Reach. As a result of this promotion both the Dewfish and Upper Murrumbidgee Demonstration Reach have received funding from other sources to continue their restoration activities.

The website Finterest <www.finterest.com.au> was established to secure the legacy of the former Native Fish Strategy. It has become a central knowledge hub for the latest science and practice in native fish management. Finterest will also host the demonstration reach manual, which guides the future establishment of demonstration reaches. Five short videos capturing the outcomes and learnings of demonstration reaches have been produced and will be used to promote the demonstration reach concept through Finterest and other networks.

Managing salinity

Threats from salinity to Basin's assets and values have long been recognised as a significant issue in the Murray–Darling Basin. We coordinated the response to the salinity threat through a partnership with the Australian Government and Basin state governments. This partnership and consistent effort over 25 years has helped achieve the Basin salinity target at Morgan, which aims to maintain salinity below 800 EC for 95% of the time, see Table 2.2, and has had a positive impact on salinity levels, see Figure 2.2 on page 58.

Salt interception

A significant achievement of salinity management in the Basin has been commissioning strategically located salt interception schemes to divert hypersaline water from entering the River Murray system. In 2013–14 salt interception schemes diverted about 397,739 tonnes of salt from the River Murray, see Chapter 4 'Managing River Murray assets', page 95.

Table 2.2 Summary of salinity levels (EC) recorded at Morgan, South Australia

PERIOD	TIME INTERVAL	AVERAGE	MEDIAN	95TH PERCENTILE	PEAK	% TIME >800 EC
1 year	July 2013–June 2014	355	349	590	650	0
5 years	July 2009–June 2014	346	327	585	687	0
10 years	July 2004–June 2014	390	377	624	768	0
25 years	July 1989–June 2014	482	451	780	1087	4

Salinity registers

Under the Basin salinity management strategy actions that increase and decrease average river salinity are accounted as debits and credits which are recorded in a salinity register. For example, actions such as new irrigation developments may generate a debit on the register because they may increase salt loads to the River Murray. By comparison, actions such as commissioning salt interception schemes and improving irrigation practices may generate credits.

Each entry in the register covers material salinity impacts arising from recent actions (Register A) as well as from major historical land and water use decisions (Register B) in tributary valleys. Each year the Basin states inform the MDBA about reviews of existing register entries and new activities that have significant salinity effects.

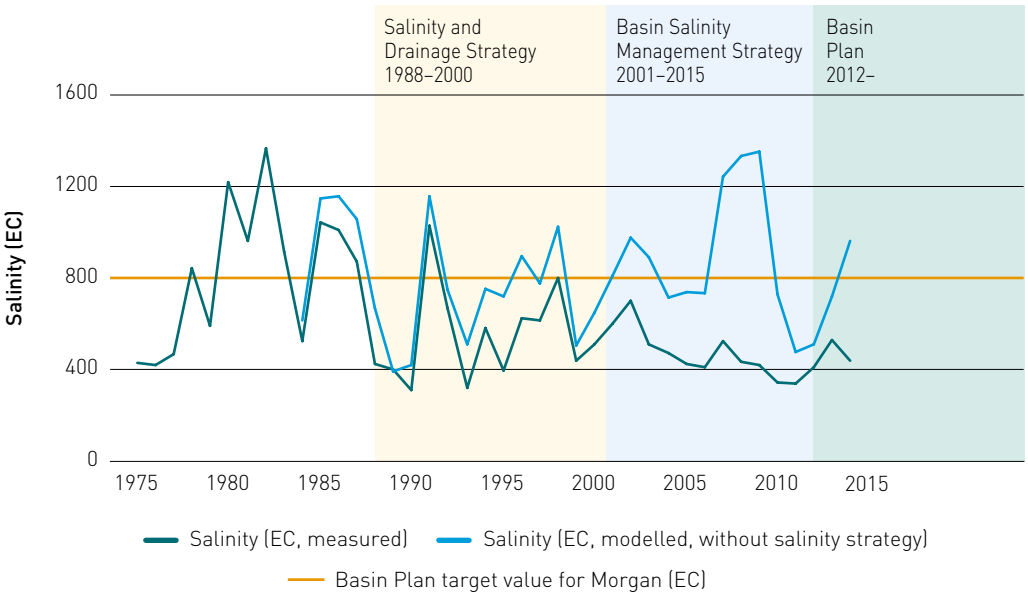
We calculate the salinity cost of these activities and update the salinity registers to be reviewed by independent salinity auditors. In November 2013 the auditors confirmed that the contracting governments of New South Wales, Victoria and South Australia remained in net credit on the salinity register (the Australian Capital Territory and Queensland do not have significant salinity impacts). These outcomes were reported to the Murray–Darling Basin Ministerial Council and published on our website <www.mdba.gov.au>.

Review of salinity management in the Basin

Partner governments requested a general review of salinity management activities because of emerging and expected significant changes in Basin salinity patterns associated with water recovery and use of water under the Basin Plan, as well as future development activities.

We successfully completed the review and presented to Ministerial Council the key findings which identified future salinity management requirements and recommended key elements to be considered in the next 15-year strategy.

Figure 2.2 Impact of salinity management strategies



Staff snapshots

Meet Madeline — why I work where I work

I was told that the Lachlan River many, many, years ago used to be a clear river. It was a river so clear that you could see right to the bottom. You could see the yellowbelly and cod, the yabbies and even the odd platypus from time to time.

I grew up on a small irrigation property north-west of Forbes, on a bend in the river. I spent most of my childhood swimming in the river and kayaking on the billabong. As I grew older, and water became scarce, the billabong dried up and the river started to expose more of itself. The flow in the river slowed, the water became murky, willows started to take over the banks and carp started to out-number the yellowbelly.

Now I am working at the MDBA in a team that helps deliver environmental water to the Booligal wetlands, Bong Bong Swamp and 'my' bend in the river.

I took this job because the Lachlan River many, many, years ago used to be a clear river.

Staff of the Murray–Darling Basin Authority are passionate about their work. For many this passion is a result of significant experiences in the Murray–Darling Basin — whether it's a part of their personal history, a love of the environment, making a living from the land, or a combination of all three.

Meet Heather

Heather grew up in Canberra and studied ecology and environmental science at the University of Canberra. Her interest in the natural environment led her to the Murray–Darling Basin Authority.

Heather works in our environmental works and measures team (see page 76) which aims to reconnect the River Murray and its floodplain by building water management structures, such as regulators, channels and pumps, to re-introduce a more natural flooding regime. (Photos by Rebecca Thornberry, MDBA)

Incorporating local knowledge into our work (photo by Charlotte Dennis, MDBA)

OBJECTIVE 3

CHAPTER 3
KNOWLEDGE INTO ACTION

To develop authoritative information, monitoring and research, in partnership with governments, scientists and communities, to underpin decision making and adaptive management

Our performance	p. 62
Informing joint decision-making	p. 64
Meeting Basin information needs	p. 64
Communications	p. 66
Strategic alliances	p. 70

Overview

This year implementing the Basin Plan has increased our need for information to support decision making. There has also been a growing public interest in data and information relating to the resources and management of the Basin. We have put significant effort into building our information resources and services. This included purchasing additional remote sensing data to improve the inundation models which will support the development of the sustainable diversion limit adjustment mechanism.

We also expanded our education program, connecting with over 22,000 students and community members. We developed our first app — *Run the river, a water sharing challenge* — which challenges players to deliver water in a balanced way to communities, industry and the environment, while keeping the river mouth connected to the ocean.

We updated over 70% of the content on our website which included developing a new Basin Plan water trading rules portal. This provides a central point of access for information on water trading rules across the Basin. Our website continues to be our key communication tool for providing information about the Basin. Again the live river data and the river operation weekly update were the most popular pages.

We continued to strengthen our relationship with the research and education sectors, demonstrated by our contribution to the Sir John Monash scholarship program. This resulted in providing a scholarship in water-related studies to Ben Mylius who will attend the Harvard Law School. We also worked closely with our advisory committee on social, economic and environmental sciences and finalised our top five knowledge and research priorities. We continued to build on our strategic alliances including meeting with international delegations to discuss water management and our progress in implementing the Basin Plan.

Challenges and the year ahead

Our challenge to be a source of authoritative information on water management will continue. This includes continuing to increase the amount of information we make publicly available, in particular information on the progress and benefits of implementing the Basin Plan and delivering our joint programs. We will continue to strengthen our collaborative partnerships with research and educational institutions which will be a critical element in helping us to achieve our goals.

Our top five knowledge and research priorities will be a key focus for the year ahead, along with the release of the Basin watering strategy in late 2014.

Highlights

- Procured Basin-wide LiDAR (remote sensing) data for rivers to assist with developing improved inundation models.
- Supported Australia's emerging leaders in water-related studies by providing for a scholarship through the John Monash scholarship program.
- Over 22,000 students and members of the public participated in education@MDBA events.
- Senator the Hon. Simon Birmingham, Parliamentary Secretary to the Minister for the Environment, launched *Run the river — a water sharing challenge*, a free app for smart devices, based on managing water in the Murray–Darling Basin.
- Use of our website grew with over one million pages downloaded.

Our performance

Program performance is measured against deliverables and key performance indicators in the *Portfolio Budget Statements 2013–14* of the Sustainability, Environment, Water, Population and Communities portfolio. A summary of our performance against the deliverables and indicators related to strategic goal 3 is provided in Table 3.1.

Table 3.1 Deliverables from the portfolio budget statements for goal 3 — Knowledge into action

DELIVERABLES	KEY PERFORMANCE INDICATORS	RESULTS	PAGE[8]
Develop partnerships with research institutions and agencies to give effect to the MDBA science and research strategy		High priority research needs that will form the focus of future strategic partnerships have been agreed and discussions with potential partners have begun	71
Progress the adoption of integrated water resource modelling to support the development and implementation of the Basin Plan	Adoption of integrated water resource modelling across the Basin	MDBA has continued to use the best available models and scientifically reviewed modelling methods for developing and implementing the Basin Plan	64
Complete stage 1 of the cultural flows research project		Stage 1 completed by the research panel and published on the website <www.culturalflows.com.au>	36
Establish information co-ordination and collaboration arrangements to enhance MDBA's access to the best data, information and knowledge	Knowledge gaps are identified and priority gaps are addressed	Data gaps associated with risks to meeting water quality and salinity targets in the Basin Plan were identified and progressed Access to externally held information and data was improved under agreements with Geoscience Australia, Bureau of Meteorology, Australian Bureau of Statistics and the Department of the Environment (Cwlth)	66
Establish the MDBA website as the primary source of information for stakeholders	Increased stakeholder access to data and information	Updated 70% of the content of our website. Key data, information and documents used for the Basin Plan, and other MDBA responsibilities, are publicly available using the MDBA's Knowledge and Information Directory <www.mdba.gov.au/kid/>. In 2013–14 over 2,600 items were available in the directory Continuing to work on improving the river data and water in storages information — to be finalised later in 2014	68
Develop communication products to promote availability of information to stakeholders	Increased stakeholder access to data and information	Communication products have been well received by stakeholders. We have sought advice on our communication products and how to make them more relevant and accessible to stakeholders	67

8 Some deliverables and key performance indicators go across goals so results will also be found in other chapters. The deliverable for developing indicators for monitoring and evaluation is reported under goal 1 where it more accurately fits.

Informing joint decision-making

The MDBA is responsible for providing the Murray–Darling Basin Ministerial Council and the Basin Officials Committee with advice and information that informs joint government decision-making about the Basin's water resources and related ecosystems.

Meeting Basin information needs

Modelling the Basin

We develop, operate and maintain river models to support river management, water sharing, salinity management and develop water resource policies, including the Basin Plan. Modelling is central to determining state water accounts and calculating state water shares through the water resources assessment.

Flood inundation modelling

Many planned environmental watering events aim to inundate the floodplains to provide benefits for the combined river–floodplain system. In cooperation with CSIRO we developed inundation models for the lower Murrumbidgee, lower Darling and Edward–Wakool which will give us more accurate information about the relationship between flow height and the area inundated. It will also permit us to target specific vegetation communities to determine how much water is needed to achieve optimal watering and will contribute to the constraints management strategy.

Floodplain vegetation

This year vegetation mapping was expanded to map the extent of river red gum, black box and coolabah across the entire Basin floodplain, see Chapter 2 'Restoring river and ecosystem health', page 54.

Basin Plan

During 2013–14 we provided hydrological modelling support for implementing the Basin Plan. This work included:

- providing technical assistance for the constraints management strategy, including providing floodplain inundation mapping products and engaging with communities, particularly in the Edward–Wakool. This work has expanded to help define environmental benefits from relaxing constraints in key valleys for input into the pre-feasibility phase of the constraints management strategy, see Chapter 2 'Restoring river and ecosystem health', page 46
- developing and implementing the overall modelling methodology for the sustainable diversion limit adjustment mechanism
- working with MDBA modellers and the multi-jurisdictional sustainable diversion limit assessment technical working group to develop the modelling benchmark for sustainable diversion limit adjustment purposes, see Chapter 2 'Restoring river and ecosystem health', page 31
- providing technical and spatial analysis to help develop the environmental outcomes for the Basin watering strategy.

River Murray

We developed a pilot blue-green algae mapping product for river operators to use when operating the River Murray system, and for communicating with states on future blue-green algae water quality events.

Knowledge and Information Directory

Key data, information and documents used for the Basin Plan, and our other responsibilities, including the sustainable rivers audit, native fish strategy and The Living Murray, are publicly available using our Knowledge and Information Directory <www.mdba.gov.au/kid/>. This directory helps to ensure that the information resources will remain readily available in the future. In 2013–14 over 2,600 items were available in the directory.

We are committed to sharing knowledge and information under the Australian Government Open Access and Licensing Framework and ensuring the least restrictive creative common licencing is used.

Cap on water diversions

The Cap on surface water diversions refers to a cap on diversions of surface water from the Murray–Darling Basin. Its creation in 1995 was seen as an essential first step in establishing management systems to achieve healthy rivers and sustainable water use. Cap monitoring and reporting arrangements are formalised in Schedule E to the Murray–Darling Basin Agreement, which now forms a Schedule to the Water Act.

With monitoring and reporting obligations under the Cap and section 71 of the Water Act in effect for the first time for the 2012–13 water year, we worked closely with the Basin states to ensure that both requirements could be met through one report. The Murray–Darling Basin water resource report 2012–13, which replaces the water audit monitoring report, will present information about the use of all Basin water resources, as well as including the updated Cap Register for that year.

All Cap river valleys remained in credit under the Cap Register for the 2012–13 water year. This register is the key mechanism for monitoring and reporting compliance against the use of surface water resources under the Cap until 2019 when the sustainable diversion limit comes into effect. In 2019 the use of all Basin water resources will be monitored and reported for compliance and a new register of take (Basin Plan) will commence.

Cap audit 2012–13

For the first time we audited the performance of the states in implementing the Cap and reporting under section 71 of the Water Act. Previously the Cap was audited by an independent audit group.

The key conclusions included:

- total diversions of 11,278 GL were the tenth highest on record (in 30 years of records, 1983–2013)
- diversions in all valleys were within the Cap.

Accrediting Cap models

Of the 23 Cap models required, 22 have been audited and 19 approved. The last three audited models: NSW Border Rivers, Queensland Border Rivers, and lower Darling have been recommended for approval. The Metro Adelaide Cap model was not yet ready for audit.

Delivering River Murray information

We work with the state governments to support the operation and maintenance of a number of hydrometric stations across the Basin. These stations are predominantly in the Murray, lower Murray and lower Darling and collect water quality and quantity data. Data and information is collated to underpin key operational responsibilities, including:

- sharing the waters of the River Murray system between New South Wales, Victoria and South Australia, in accordance with the Murray–Darling Basin Agreement
- storing, managing and delivering water to meet consumptive and environmental needs
- operating salt interception schemes
- enabling navigation and supporting recreation and tourism.

This information is used to direct daily releases from a number of structures along the River Murray, working closely with state agencies and constructing authorities (whose staff physically control the structures) to deliver consistent operations and reliable water supplies for all users in a fair and efficient way.

We regulate the River Murray's flow to ensure that the supply of water is reliable, even during severe drought. During floods our primary aim is to protect the safety of dams and other assets while maximising water availability

when flooding recedes. Our other aims include limiting flood damage to downstream communities and increasing the environmental benefits.

We share information with our stakeholders in a number of ways, including:

- regular meetings with Basin state government authorities
- close liaison with the Bureau of Meteorology, particularly before and during floods
- online publication of various information resources, including River Murray system daily, weekly and periodical data, see <www.mdba.gov.au>.

Library and geospatial services

This year we continued to have a greater focus on obtaining and managing digital resources. There are significant benefits and cost efficiencies with concentrating on digital resources. Although the library is now closed to the public, library staff continue to meet requests for reference material and inter-library loans. Work is continuing on digitising our hardcopy historical collection — including over 200 MDBA reports — to make it more accessible.

Our image gallery continues to be an important information resource and is constantly being upgraded. During the past year we received many requests for images, most of which came from outside the agency. We also received many search 'hits' from overseas, including Korea, Mexico, Sweden, New Zealand, Trinidad/Tobago, Russia, France, Peru, Malaysia and the USA.

In 2013–14 we completed 375 geospatial requests, 266 were internal MDBA requests and 95 were from external customers. This was an overall increase of 122 requests.

Significant geospatial-related highlights during 2013–14 included:

- collaborating with Geoscience Australia to manage and process over 65,000 km^2 of LiDAR (high resolution elevation data) and Landsat imagery over the major rivers of the northern Basin, to enable accurate modelling of environmental water flows and inundation of floodplains, as well as for use in other applications
- continuing to develop environmental information frameworks with the Australian Bureau of Statistics, and Bureau of Meteorology.

Enterprise information strategy

The enterprise information strategy establishes the framework for our information management and technology initiatives. The strategy outlines the capabilities and systems required to meet our information management, processing and archiving obligations under the Water Act.

During 2013–14 we began developing a new three year strategy, which we expect to finalise in late 2014.

Communications

Media and social media

Regional media and social media remain an important way for us to get out the latest information to Basin communities about our work. We continue to hold a fortnightly spot on ABC local radio to provide regular updates about River Murray conditions and operations, and the work we are doing under the Basin Plan.

In 2013–14 we focused on broadening our reach and generating a stronger presence in regional media. This has been achieved through increased contact with regional journalists and editors, regularly issuing media releases and op-eds, and having MDBA staff readily available to give radio and television interviews.

Our Chair, Craig Knowles, being interviewed for South Australia's 7.30 report at the Goolwa barrages, South Australia (photo by Alisha Caldwell)

We continue to use social media to promote our activities, to alert stakeholders to opportunities to provide feedback or input into our work, and to draw attention to new reports or information on our website. We make daily use of Twitter, post regular blogs on Freeflow and promote stories and photos on Facebook.

Our stories and news items about River Murray operations continue to attract the most interest, however other stories of interest over the past 12 months have included the consultation and regional meetings on the constraints management strategy, the launch of the MDBA's *Run the river* app on iTunes and Android, and the threat of tilapia in our waterways.

Communication products

The quality of our annual report was again recognised with the 2012–13 report receiving a silver award at the Australasian Reporting Awards.

Over the past twelve months we have made considerable efforts to communicate our work in a clear and accessible way. Given that we have significant scientific and technical information to communicate we understand the importance of providing straightforward explanations. Training sessions for our staff in plain English writing was rolled out, and we gave an all staff presentation on communicating science. We also employ strategies such as testing content with our community committees to improve the clarity of our communication products.

Four editions of *The Spillway* were published over the year, to over 1,100 subscribers. Articles included updates on what's happening in the Basin, educational events, conferences and showcasing the great work of our community partners.

We published the northern Basin newsletter on our website after each Northern Basin Advisory Committee meeting, to keep communities informed. We published four editions in 2013–14. We also began producing snapshots of northern Basin catchments — starting with the Barwon–Darling spotlight.

We supported a new website called Finterest <www.finterest.com.au> which shares the work accomplished through the first ten years of the native fish strategy.

Peer reviewed journals

To inform the academic world of the key work involved in developing and implementing the Basin Plan a list of priority journal papers was agreed and a strategy adapted to guide and support staff in contributing articles to academic journals.

Website

Our website <www.mdba.gov.au> is our primary communication vehicle for publishing information and reports. Following redevelopment in April 2013, we have continued to build our research and science holdings, educational resources, northern Basin information and community interest features. Basin people, for example, is about bringing to life the interesting stories from those who live and work in the Basin.

People are staying on our website longer and downloading over one million pages. The most visited part of our website continues to be those providing river data and the river operations weekly reports. Other popular pages include: about the Basin, water quality and salinity, and the Basin Plan.

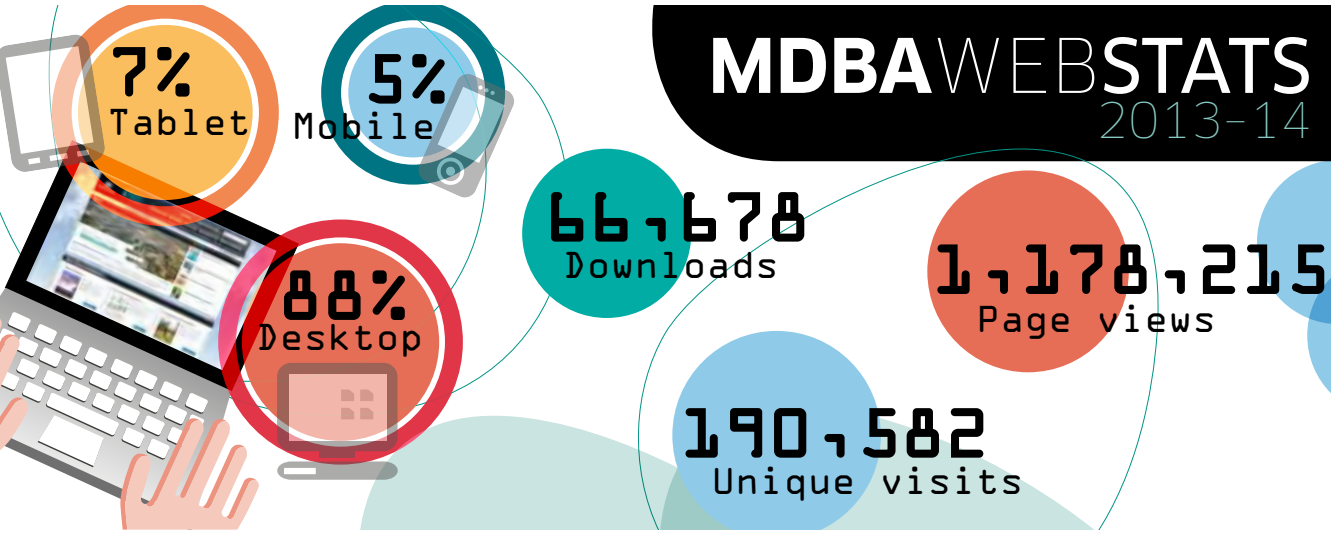
Our website is moving towards using more interactive online communication tools which showcase what we do while still meeting all accessibility guidelines.

Publications

Our publications in 2013–14 included:

- *2013–14 Murray–Darling Basin environmental watering priorities*
- *Basin environmental watering outlook 2014–15*
- *Constraints management strategy 2013–24*, and its accompanying public feedback report
- *Handbook for practitioners — water resource plan requirements*
- *The Living Murray environmental water delivery 2012–13*

For a full list of our publications see Appendix E, page 202.



Senator the Hon. Simon Birmingham launching the Run the river app, at Questacon, for World Water Day (photo by Brayden Dykes, MDBA)

education@MDBA

The education@mdba program had a successful year connecting people throughout the Basin, and wider Australia, with the work and staff of the MDBA. We used a variety of events, mediums, delivery methods and partnerships to directly connect with an estimated 22,354 students and members of the public.

Senator the Hon. Simon Birmingham, Parliamentary Secretary to the Minister for the Environment, launched *Run the river — a water sharing challenge*, an educational app for smart devices, in March 2014. This is the first app we have produced, challenging users to deliver water to consumers along the river while balancing water allocations for communities, industry and the environment. Over 1,570 people have installed the app since the launch, with many more downloads anticipated for 2014–15.

The education team worked with Questacon to develop a 30 minute science show *Trickle Down*. This hands-on science theatre show introduces the challenges of managing water in the Murray–Darling Basin in a fun, interactive way. Questacon staff performed the show 183 times to over 7,500 people from around Australia.

The Basin Champions digital videoconferencing program continued to successfully connect MDBA staff with students throughout the Basin. Students participating in the program investigated a local water-related issue over a school term. Weekly live videoconferencing events gave students access to MDBA technical staff to assist with their investigation or to learn more about water management. Where the timing of live events did not suit, teachers and students accessed pre-recorded material on YouTube.

We continued to provide funding for the Murray–Darling Basin natural resource management and environmental educators network. The network holds chapter and whole-of-Basin meetings, allowing natural resource management and environmental educators to coordinate activities, share best practice techniques as well as look at opportunities for joint activities.

Staff throughout the MDBA form an important part of the education@mdba program, promoting careers in water resource management, providing content and assisting with delivering education programs. Over 60 staff members assisted with education programs, participating at events such as:

- World Water Day at Questacon — the National Science and Technology Centre in Canberra
- the Basin Champions program
- teacher professional association meetings and conferences
- the Murray–Darling Basin science show *Trickle Down.*

Strategic alliances

International engagement

We continued to build strong relationships internationally, aligning with Australian Government priorities. Countries we engaged with included China, Southern Africa, India and the Mekong sub-region.

We met with a number of international delegations during 2013–14 to discuss water management issues and our experiences in implementing the Basin Plan. These meetings provided an opportunity for us to share our knowledge and to gain insights into current thinking in river basin management.

Program highlights for 2013–14 included:

- being one of four finalists shortlisted for the prestigious International 2013 Thiess Riverprize. The award recognises outstanding programs in river management. As a finalist, Australia's achievement in legislating the Basin Plan was internationally acknowledged
- participating in World Water Week, in Stockholm, in September 2013. Jody Swirepik represented the MDBA and participated in a panel discussion exploring global knowledge sharing. Following this event we were successful in applying to host a seminar in Stockholm in 2014. We are working with global partners to consider the challenges to managing water variability and competing demands in large river basins
- contributing to UNESCO's publication 'Freeflow', which was issued as part of the 2013 United Nations International Year of Water Cooperation.

Sponsorship

The MDBA is committed to supporting worthwhile initiatives that align with our work and to advance thinking in the field of water management.

An important part of our sponsorship focus is to build relationships with the research and education sector. This year we were pleased to have the opportunity to contribute to the General Sir John Monash scholarship program by providing for a scholarship in water-related studies. The scholarship demonstrates the importance we place on investing in future leaders of the water sector.

Ben Mylius was awarded the 2013 scholarship at a ceremony at the Sydney Opera House in November 2013.

The scholarship will support Ben in postgraduate study at the Harvard Law School where he will explore earth law and its benefits to the water industry in Australia (photo courtesy General Sir John Monash Foundation and Susan Gordon-Brown Photography).

In 2013 we partnered with the *One River* project as part of the Centenary of Canberra celebrations. *One River* was a multi-state and territory project, celebrating Basin communities' stories and their connection to river systems.

The MDBA is a principal sponsor of the 17th International Riversymsposium, which will be held in Canberra in September 2014. The theme for the Riversymposium is large river basins. It will provide us with the opportunity to share with domestic and international representatives key elements of our science management, policies and programs.

During the year we supported conferences, workshops and events including:

- the Australia and New Zealand Society for Ecological Economics Conference
- the 4th National Sulfate Soil Conference
- the Fairley Leadership Program
- the Loddon Murray Leadership Group
- the Australian Society of Fish Biology and Australian Society Limnology Congress 2014
- ABARES Regional Outlook Conference — Goondiwindi
- Healthy Rivers Australia.

Research partnerships

Many research institutions and organisations, including universities, state based agencies and CSIRO, contribute to our scientific, social and economic knowledge of the Basin and its diverse environments and communities.

We support relationships and partnerships that develop, improve, and refine the scientific understanding of the Basin. There are a number of partnerships underway and new strategic partnerships will be developed that align with our high priority research needs.

MDBA's priority research needs

Our top five knowledge and research needs to improve the management of the Basin's water resources, for all users, over the next ten years are to:

- build understanding of, and the capacity to predict and manage, the response of ecological communities to different flow regimes (where, when and how environmental water is delivered and what happened)
  Rationale: to continually adapt and improve environmental water planning and delivery in order to better meet environmental objectives
- improve understanding of the activities and patterns of water use by Murray–Darling Basin water users
  Rationale: to optimise the social, cultural and economic benefits of environmental water delivery
- improve understanding of the relationship between key external drivers (including climate, exchange rates, commodity prices, market changes), land management and Basin Plan social, economic and environmental outcomes
  Rationale: to improve the evaluation of the Basin Plan outcomes by better adjusting for external influences
- improve understanding of the scale, intensity and distribution of impacts of future climate change on Basin water resources
  Rationale: to support the development of practical approaches to sharing the burden of climate change between environment and consumptive use in future water sharing arrangements, and to assist all water users in long-term planning (informs investment decisions for consumptive users and informs long-term watering strategies for environmental water managers)
- improve the groundwater information base
  Rationale: to improve our understanding of groundwater in the Basin to improve our understanding of recharge and the associated ecological sustainable level of take method, to support implementation and any future reviews of the Basin Plan.

Murray–Darling Basin Futures

The Murray–Darling Basin Futures Collaborative Research Network (MDBfutures), based at the University of Canberra, is a partnership built on collaboration between cross-disciplinary research across four Australian universities (University of Canberra, Australian National University, Charles Sturt University, and the University of Queensland) the MDBA, CSIRO and other key government agencies.

MDBfutures is focused on building resilience in the Murray–Darling Basin through multi-disciplinary programs in environmental science, social and economic modelling, public policy, public health and urban and regional planning.

We provided funding to the University of Canberra to undertake the regional wellbeing survey to provide information about the lives and wellbeing of people living in rural and regional areas. The survey showed that there are a range of issues that influence the wellbeing of regional and rural communities (see page 31).

Murray–Darling Freshwater Research Centre

The MDBA is a partner with CSIRO and La Trobe University in the Murray–Darling Freshwater Research Centre. The research centre provides specialist skills and knowledge in riverine ecology in the southern Basin and the River Murray in particular. The research centre focuses on generating and communicating freshwater ecological knowledge and specialises in providing advice and solutions to optimise water management decisions.

This long-standing partnership has provided critical information and management advice around blue-green algae, blackwater, acid sulfate soils and the condition of The Living Murray's icon sites.

CSIRO

We continued to work with CSIRO through a number of established partnerships. We also worked with CSIRO on several key activities including developing a method to test for equivalent environmental outcomes for the sustainable diversion limit adjustment process, see page 32.

eWater

eWater is a publically owned not-for-profit partnership committed to ecologically sustainable water management in Australia and around the world. eWater's main function is to support the implementation and use of the SOURCE Integrated Modelling System as the new national hydrological modelling platform for Australia.

The MDBA and partner governments are supporting the SOURCE Integrated Modelling System development through representation on the National Hydrological Modelling Platform Steering Committee and technical working group. We are setting up a model for the River Murray and lower Darling systems using the SOURCE software. The model setup and calibration will be completed by 2015.

Aquatic ecosystem classification

We worked with the Commonwealth Environmental Water Office to finalise a classification of aquatic ecosystems in the Basin. This classification is the first step towards ensuring that the different types of ecosystems in the Basin can be represented in future management activities in a more systematic way.

OBJECTIVE 4

CHAPTER 4
MANAGING RIVER MURRAY ASSETS

To equitably, efficiently and effectively manage, operate and sustain the River Murray assets to deliver states' agreed water allocations and environmental outcomes in the River Murray system

Our performance	p. 74
Maintaining and improving assets	p. 76
Improving the physical assets base	p. 78
Delivering water	p. 82
Salt interception schemes	p. 95

Overview

Rainfall in 2013–14 was below-average in much of the northern Basin. Much of Queensland has now had below-average rainfall for over two years, with large portions of the state declared to be under drought conditions.

In contrast in the southern Basin wetter conditions returned in the second half of the year with many areas experiencing above-average rainfall from January to June 2014. Significant rainfall in early April virtually ceased irrigation demand for the remainder of the irrigation season.

Total inflows to the River Murray system for 2013–14 (*including* inflows to the Menindee Lakes but *excluding* releases from the Snowy Mountains Scheme) were around 5,700 GL, about 2,800 GL less than in 2012–13, and much less than the long-term mean inflow of 9,340 GL.

During 2013–14 operations for the River Murray system followed a similar pattern to those of 2012–13. During the early part of the year they were driven by high inflows, and upper storages were being managed to reduce the impact of potential flood events. As inflows decreased, high water availability combined with extremely hot and dry weather pushed demands and system losses to high levels.

Environmental water demands were also high with 600 GL of environmental water delivered throughout the year. This water benefitted sites including Barmah–Millewa Forest, the Edward–Wakool system, Broken Creek, Gunbower Creek, the Coorong and Murray Mouth.

A significant achievement was completing the construction of the $30 million buttress to support the spillway southern training wall at Hume Dam. Major water management structures, funded under The Living Murray program, were also completed during the year making it possible to water large floodplain forests more frequently and with less water.

Challenges and the year ahead

With substantial volumes of water now recovered for environmental use, a major focus for River Murray operations is to identify and implement smarter ways to deliver water. It is essential to be able to make the best use of the water available to maintain the health of the river system.

Highlights

- Completed the Sea-to-Hume Fishway Program, as well as upgrading the navigable passes at locks and weirs.
- Completed strengthening the southern training wall at Hume Dam, on schedule and under budget.
- Commissioned The Living Murray works at Hattah Lakes and Mulcra Island.
- Coordinated an 18 gigalitre-a-day trial to water Moira grassland.
- Completed major water management structures at Gunbower Forest and Chowilla Floodplain.
- Completed the first phase of the reconstruction of Mildura–Merbein salt interception scheme.
- Completed the review of the joint activities which included a review of River Murray Operations since 2001–02 see <www.mdba.gov.au/what-we-do/joint-activities/rmo-cost-changes/river-murray-operations-expenditure>.

Our performance

Program performance is measured against deliverables and key performance indicators in the *Portfolio Budget Statements 2013–14* of the Sustainability, Environment, Water, Population and Communities portfolio. A summary of our performance against the deliverables and indicators related to strategic goal 4 is provided in Table 4.1.

Table 4.1 Deliverables from the portfolio budget statements for goal 4 — Managing River Murray assets

DELIVERABLES	KEY PERFORMANCE INDICATORS	RESULTS	PAGE[9]
Carry out the annual planned maintenance and renewals program according to contemporary best practice	Annual inspection assesses all assets to have achieved a good or high standard of maintenance	All assets functioning as required and well maintained and presented	76, 81
Reduce the risks associated with joint venture assets to acceptable levels in accordance with jurisdictional dam safety regulations through the Dam Improvement Program	No adverse rulings from jurisdictional dam safety regulators	Further risk reduction achieved at Hume Dam (now falls below the Australian National Committee on Large Dams 'Limit of tolerability'). No adverse feedback from dam safety regulators	78
Progress and/or complete environmental works and measures projects	Environmental works and specific projects are managed efficiently to achieve their objectives and are maintained to contemporary standards	Completed construction at all sites except Mullaroo	76
Operate and maintain existing salt interception schemes in accordance with the corporate plan and agreed operating rules and operating and maintenance procedures	Positive annual performance report for all salt interception schemes	Annual reports completed	95
Conduct day to day operation of the River Murray system assets in accordance with the objectives and outcomes set by the Basin Officials Committee	Positive report on River Murray system operations of the Independent River Operations Review Group (IRORG) endorsed by the Basin Officials Committee	IRORG concluded that the MDBA had fulfilled its obligations A report on 2013–14 operations to be submitted on 30 September 2014	76
Transparently determine state water entitlements in accordance with the Agreement		All water resource assessments completed on time	87
Effectively maintain the River Murray system water accounts	Positive report on River Murray system operations of the IRORG endorsed by the Basin Officials Committee	All accounts prepared on time	88

9 Some deliverables and key performance indicators go across goals so results will also be found in other chapters.

Maintaining and improving assets

River Murray Operations assets are jointly controlled by the Australian Government and the governments of New South Wales, Victoria and South Australia. The governments' control is exercised through the Murray–Darling Basin Ministerial Council and the Basin Officials Committee. By agreement of the four asset controlling governments, the MDBA manages the River Murray Operations assets in accordance with the functions, powers and duties set out in the Murray–Darling Basin Agreement.

State constructing authorities are appointed by the respective governments to carry out these duties. The state constructing authorities comprise:

- State Water Corporation (State Water NSW) (the NSW Office of Water also undertakes significant works relating to salt interception schemes, river improvement, hydrometric and water quality monitoring, and the environment)
- Goulburn–Murray Water (Victoria)
- South Australian Minister for the River Murray, including the operating agents South Australian Water Corporation (SA Water) and the South Australian Department for Environment, Water and Natural Resources.

A strong relationship has developed between the MDBA and state constructing authorities, ensuring that maintenance is proactive, decision-making is generally by consensus and issues are raised sufficiently early to enable a quick resolution.

Environmental Works and Measures Program

The Environmental Works and Measures Program aims to improve the health of the River Murray system by building water management structures that deliver and manage water for The Living Murray's icon sites. For more information on The Living Murray program see Chapter 2 'Restoring river and ecosystem health' page 49.

Major water management structures are being constructed at six locations to assist in delivering water to environmentally significant areas within the icon sites.

Construction progress

High flows in the River Murray in spring of 2013 continued to delay construction. Despite this we made significant progress throughout the year completing construction at all sites except Mullaroo. The Mullaroo works are the final works under The Living Murray Program and will be completed by June 2015.

Significant progress throughout the year included:

- commissioning the water management structures at Hattah Lakes in winter–spring 2013. Hattah Lakes was again watered in winter 2014 to build on the previous event and to inundate about 6,000 hectares of the floodplain, including Lake Kramen which is located higher on the floodplain
- opening the Koondrook–Perricoota Forest water management scheme on 24 July 2013 by the Hon. Katrina Hodgkinson MP (NSW Minister for Primary Industries). The first watering is scheduled to occur in winter–spring 2014
- completing construction of the Hipwell Road project at Gunbower Forest in early 2014. This included constructing a new channel and regulator off Gunbower Creek, a weir on Gunbower Creek and a bridge over the channel. Wet commissioning of the regulator and weir was completed during February and March 2014. The first watering event at Gunbower Forest, utilising the Hipwell Road infrastructure, commenced in May 2014 to commission the works to their full design capacity and to inundate about 5,000 hectares of forest

The Hattah Lakes project was officially opened on 19 December 2013 by Senator the Hon. Simon Birmingham (Parliamentary Secretary to the Minister for the Environment) and the Hon. Peter Walsh MP (Victorian Minister for Water) (photo by Ben Dyer, MDBA).

- commissioning the structures at Mulcra Island in winter–spring 2013, which was a success and highlighted ways to increase the efficiency of operating the structures to achieve greater environmental benefits. The New South Wales Weir Pool Manipulation Project assisted in coordinating this event. The second stage commissioning will commence around August 2014 and will increase the water height at the structures
- starting construction of the Mullaroo structures in March 2014. Work was temporarily suspended to manage risks associated with the delays to construction and is scheduled to recommence in late spring 2014. This is the final component under the Lindsay project, which aims to improve in-channel and riparian habitat along the Lindsay River and Mullaroo Creek for native fish, specifically Murray cod
- completing construction at Chowilla, Pipeclay and Slaney creeks in May 2014. Testing the scheme will begin in spring 2014.

For information on the environmental benefits from the commissioning and watering events see Chapter 2 'Restoring river and ecosystem health' page 53.

Sea-to-Hume Fishway Program completed

The world-class Sea-to-Hume Fishway Program is re-establishing opportunities for fish to migrate over 2,000 km of the River Murray, by installing 16 new fishways and modifying one existing fishway. It is the first program anywhere in the world that allows for fish passage for the majority of native species in a migrating fish community rather than focusing on only one or two species of economic or social significance.

Monitoring shows that millions of native fish are using the new fishways, passing as many as 10,000 per day, with high diversity (13 species) and a wide range of sizes (from 30 mm in length).

The fishways at Lock 2 (Waikerie), Lock 4 (Bookpurnong), and Lock 15 (Euston) were finished this year, completing the Sea-to-Hume Fishway Program. The remaining task is to test the fishways to ensure that they are operated in the most efficient way for fish passage.

Counting fish

Passive integrated transponder (PIT) tag readers are now in place at all fishways from Lock 1 to Lock 9. PIT tag readers will be installed between Lock 10 and Yarrawonga Weir in 2014–15. PIT tag readers record when tagged fish pass through a fishway and provide valuable information for assessing the effectiveness of the fishways and monitoring fish movement along the River Murray and tributaries. The data from the PIT tag reader systems is being managed through a centralised database which enables up-to-date, remote monitoring of the fishways.

Detailed design has continued for the seven additional fishways at the Murray Mouth barrages as part of the Murray Futures Program. Construction is scheduled to begin in 2014–15. These fishways will provide a better connection for fish between the Lower Lakes and the Coorong by allowing them to move between fresh and estuarine areas. This is an important part of the breeding cycle for some native fish.

Complementary environmental works

The Environmental Works and Measures Program has provided support and input to environmental works programs that will impact on River Murray assets. These programs include:

- South Australian Riverland Floodplain Integrated Infrastructure Program — which seeks to improve the health of the River Murray floodplain below locks 4 and 5. New structures will use the level of the weir pools to direct water onto the floodplains. Other infrastructure projects will help to reduce the impacts of salinity on the floodplain and restore vegetation health. The MDBA will oversee this $155 million, seven year program that will be delivered by the South Australian Department of Water, Natural Resources and Environment. Planning for the investigation and design phase began this year
- Carrs, Cappits and Bunderoo creeks — the Murray Darling Wetlands Working Group Ltd and the Western Local Land Services are continuing the engineering feasibility study to upgrade existing structures near Lock 9. The project will help restore flow, aquatic connectivity, ecological condition and provide fish passage.

Improving the physical assets base

Hume Dam safety and flood upgrade

During 2013–14 significant progress was made on the dam safety upgrade program at Hume Dam. The mass concrete buttress, which increases the stability of the spillway southern training wall, was completed on schedule in November 2013 and the total project cost was well under budget. The overall dam safety risk for Hume Dam has been significantly reduced due to the completion of these works.

The third dam safety project in the upgrade program is to address the spillway flood capacity. In 2014–15 there will be additional geo-technical site investigations, testing and related studies which will inform the options for upgrading the flood capacity and used in preparing detailed design. The preferred option involves strengthening and raising the main embankment parapet wall along with minor modifications to other embankments at Hume.

We are continuing to investigate flood upgrade options, taking into account:

- the Australian National Committee on Large Dams guidelines
- the move towards a more risk-based strategy by the NSW Dams Safety Committee (the NSW dams regulator)
- results from the study into refining extreme rainfall characteristics
- a change in the operating strategy for extreme rainfall events to further increase flood-routing capacity, in addition to the recommended structural upgrade works.

Dartmouth Dam flood upgrade

The annual dam safety inspection of Dartmouth Dam in May 2014 confirmed that the dam is in good condition and performing as expected. Inspections are carried out annually at each of the MDBA's major dams in accordance with guidelines issued by the Australian National Committee on Large Dams. This year's inspection at Dartmouth Dam was a more extensive 'comprehensive inspection' to the committee's requirements, and is conducted at five year intervals.

We place a high priority on ensuring that our dam assets comply with contemporary standards including guidelines prepared by the Australian National Committee on Large Dams. Although the spillway capacity at Dartmouth was designed to meet flood standards in place at the time, changes in standards since then means that the existing spillway capacity does not meet the most conservative estimate of the probable maximum flood. The detailed design has been completed for the first stage of the flood capacity upgrade which includes refurbishing the dam crest at Dartmouth Dam.

Constructing the upgrade involves removing part of the existing dam crest and so, to satisfy dam safety requirements, construction cannot be carried out until the storage falls to below half full. This restriction on storage level at the start of construction has been set so that the overall dam safety risk during construction does not exceed the current risk level. Funding for the upgrade is expected to depend on partner governments first addressing higher priority dam safety risks within their states.

Lake Victoria safety improvement

Two significant dam safety improvement projects are currently underway for Lake Victoria. The first project is remedial works at the outlet regulator — a structure which has been in operation since 1925. Detailed design of the stage 1 remedial works at the outlet regulator was completed in the second half of 2013. In February 2014 construction began on the priority stage 1 works while the lake levels were at their lowest.

Dartmouth senior reservoir controller Peter Liepkalns demonstrating the newly completed low level outlet winch drive system. The winch raises and lowers the low level bulkhead, which weighs 25 tonnes. It is lowered to close off the reservoir's outlet tunnel so that inspections and maintenance can be carried out (photo by Andrew Beer, MDBA).

Key construction activities are scheduled to be completed by July 2014 but will be subject to suitable river and lake levels. The stage 2 remedial works at the outlet regulator, which require constructing a major cofferdam, will begin once funding and approvals have been obtained.

The second project at Lake Victoria involves remedial works at two creek crossings along the Frenchman's Creek inlet channel, and is scheduled for the second half of 2014. At the second creek crossing the area requiring remedial works is much larger and so, if similar risk reduction measures are used, the environmental and cultural heritage impacts will be much greater. A minimal impact option will be implemented in 2014–15.

Upgrading the locks and weirs

The program to construct new navigable passes at 11 locks and weirs was completed this year. The new navigable passes can be removed and reinstated in just a few hours compared with the three days needed to remove the original trestle, needle beams and Boulé panel navigable passes.

Lock 1 completed in 1922 (MDBA historic images collection) showing the Boule panels in place. With the upgrade of the navigable passes it is no longer necessary to use divers to reinstate the weirs after the floods have receded. This has eliminated a significant workplace safety risk.

What is a navigable pass?

The weirs along the River Murray are designed to be stripped during floods. This involves the complete removal of the weir structure except for the concrete columns. The cranes used to carry out this work are moved to specially constructed elevated areas where they are above the flood level. When the weir is stripped the lock becomes inoperable and a navigation pass is established. Historically this meant removing the weir and laying 'A' frames horizontal providing a section with enough depth to allow boats to pass. Once the floods receded divers were needed to help reinstate the weirs.

Work continued to replace the access deck across Tauwitchere Barrage. Decks at Ewe Island and Tauwitchere barrages will be progressively replaced up to 2021.

Hume to Yarrawonga reach — protecting the river banks

Work continued on protecting river banks from erosion between Hume Dam and Lake Mulwala, this included log revetment (using logs to protect river banks), which has proven to be a very effective technique for reducing erosion of the river banks. Common reed (*Phragmites spp.*) was planted within the log revetment to help stabilise the banks. Other methods included rock beaching, willow control, fencing and weed control which all included a re-vegetation component to provide long-term stability.

Rock beaching (placing rocks along river banks) was used in a flood runner, connecting the Kiewa River to the River Murray, to limit active erosion along the entire reach. Access to a number of floodplain properties was also refurbished. Access to the properties is impacted when anabranches flow all summer, because of regulated releases from Hume Dam.

Mitta Mitta River channel improvements

Work continued to help reduce bank erosion caused by moving large volumes of water between Dartmouth and Hume dams. A demonstration site, adjacent to Tallandoon Bridge, was established to showcase the aims of the project and erosion control methods.

Works along the reach included willow control, rock beaching, re-aligning fallen trees, fencing and revegetating river banks with native plants. These erosion control methods will maintain channel capacity and minimise the risk of significant erosion, while enhancing environmental values along the reach.

Inspecting the assets

Each year senior MDBA staff inspect all the River Murray Operations assets to assess their operational performance. Assessment criteria include:

- condition of the assets
- operations and maintenance documentation
- occupational health and safety documentation and performance
- achievement of the works program set for the year
- expenditure against budget in meeting the program.

Congratulations to the winners of the 2013 Collings Trophy Pat Doyle, Peter Klowss and Luke Cruikshank (from Goulburn–Murray Water), pictured here with Rhondda Dickson, Chief Executive of the MDBA (photo MDBA).

Senator Joseph Silver Collings

(1865–1955) was Minister of the Interior from 1941 to 1945 and President of the River Murray Commission.

Senator Collings Trophy

The Senator Collings Trophy has been awarded annually since 1943 to the team that has the most effectively maintained site on the River Murray. The major dams and barrages, including Yarrawonga Weir, have only been eligible for the award since 2003.

In 2013 Yarrawonga Weir was the winner. They have consistently been one of the top two or three performing assets since they were last awarded the trophy in 2008. We congratulate Peter Klowss and his team from Goulburn–Murray Water on the exemplary manner in which they have operated and maintained the weir and surrounding lands.

Yarrawonga Weir is the largest of the 16 weirs on the River Murray (photo by Michael Bell).

Delivering water

Agreed water shares delivered to states

The following key actions are undertaken to deliver agreed water shares in the River Murray system to the states, including in extreme conditions:

- regularly assess the water resources of the River Murray system to determine the volume of water available to New South Wales, Victoria and South Australia
- operate structures under the control of the MDBA and determine and review procedures for their efficient and effective operation
- establish, operate and maintain a system of continuous monitoring of the volumes and quality of stored water, and of flows in the River Murray and from its tributaries
- liaise with state and Australian Government authorities on matters related to the River Murray system to provide an up-to-date and comprehensive flow of information.

Rainfall

Rainfall in 2013–14 was below average in much of the northern Basin, contrasting with generally average or above-average totals in the southern catchments, Figure 4.1.

The first half of the year was characterised by dry conditions throughout large parts of the Basin, with markedly reduced rainfall in late winter and spring, Figure 4.2. In the northern Basin below-average rainfall continued throughout January, resulting in a failed summer wet season with particularly low inflows in the headwater catchments of the Darling River. Much of Queensland has had below-average rainfall for over two years, with large portions of the state declared to be under drought conditions.

Figure 4.1 Murray–Darling Basin rainfall deciles for 2013–14

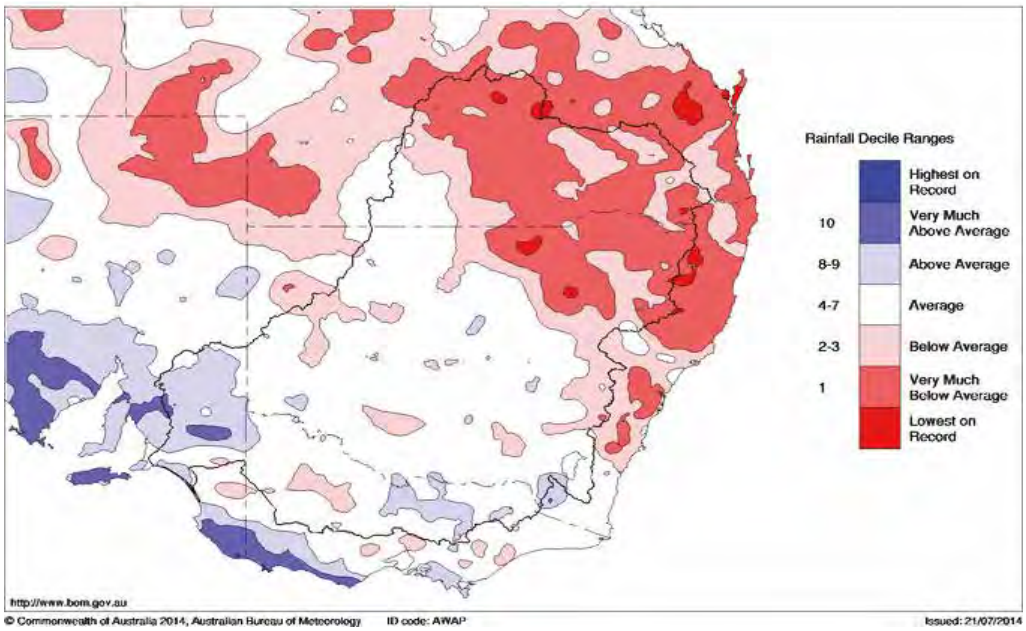
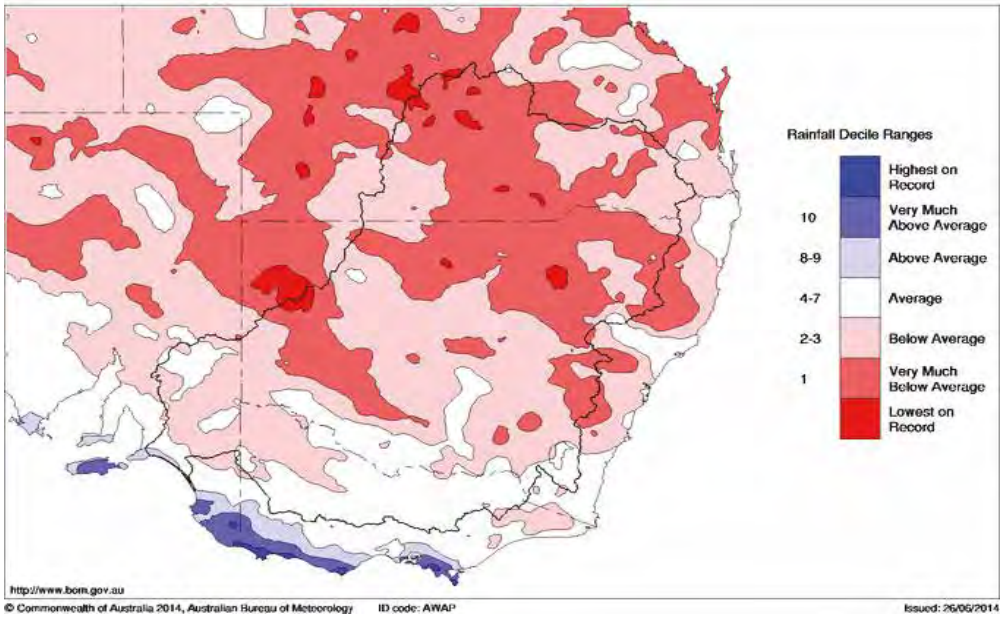


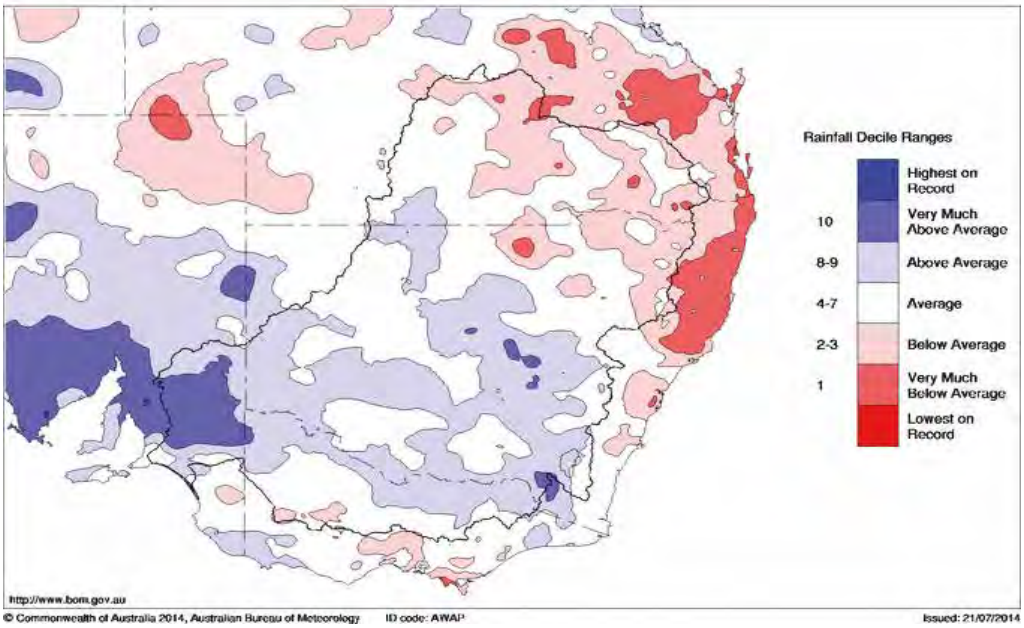
Figure 4.2 Murray–Darling Basin rainfall deciles from 1 July to 31 December 2013



In the southern Basin wetter conditions returned in the second half of the year with many areas experiencing above-average rainfall from January to June 2014, Figure 4.3. South Australia and the lower Murray received particularly high rainfall over this period, with a number of significant rainfall events. One event in mid-April delivered falls of up to 100 mm of rain along the length of the River Murray. This was followed by a significant drop in irrigation demand that then remained low until the end of the irrigation season in mid-May.

A significant portion of the high inflows was captured in headwater storages such as Hume Dam (photo by Andrew Beer, MDBA).

Figure 4.3 Murray–Darling Basin rainfall deciles from 1 January to 30 June 2014

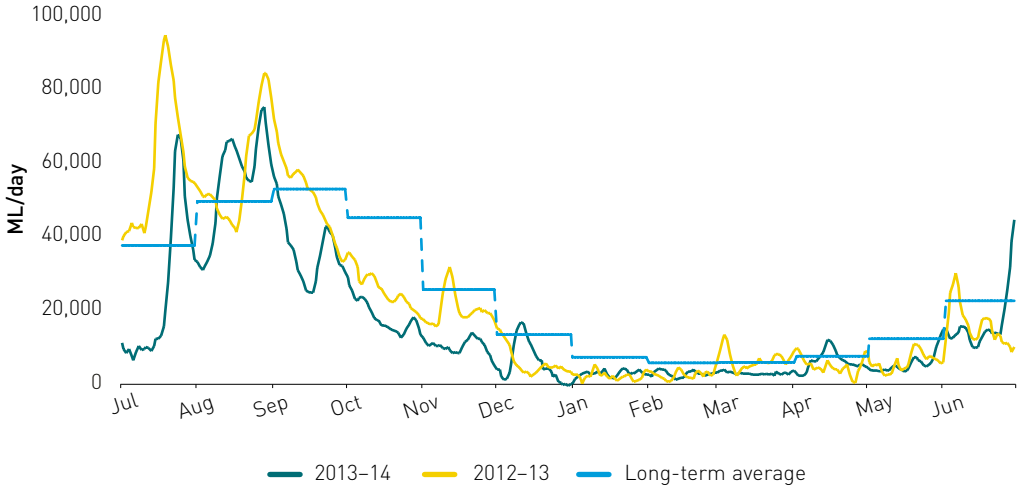


Inflows

The pattern of inflows into the River Murray system in 2013–14 was broadly similar to that of 2012–13, Figure 4.4. Wet catchments in the upper Murray system tributaries leading into 2012–13 resulted in high inflows during parts of July and August when good rains fell. A significant portion of these inflows was captured in headwater storages. Releases for airspace management were also required as Dartmouth and Hume reservoirs approached full supply level. Downstream flows did not reach minor flood level. Inflows fell away quickly during spring and into summer while the Basin experienced low rainfall and above-average temperatures.

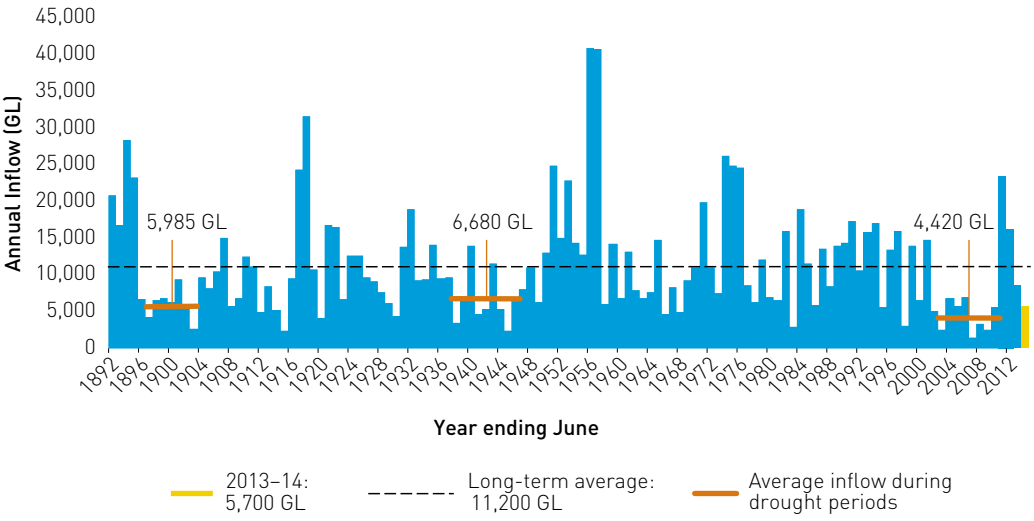
Despite wetter conditions returning to the southern Basin from February onwards, inflows remained below the long-term average through to June. A significant event in the last week of June brought heavy snowfall and high inflows into the upper Murray catchments. This is reflected in Figure 4.4 by the spike in inflows at the end of the year.

Figure 4.4 River Murray system daily inflows (excluding both inflows to Menindee Lakes and releases from the Snowy Mountains Scheme)



River Murray system inflows during 2013–14 (*including* inflows to Menindee Lakes, but *excluding* Snowy Mountains Scheme, inter-valley transfers and environmental water inflows) totalled around 5,700 GL, Figure 4.5. This volume was relatively low, with an Annual Exceedance Probability (AEP) of 80% (that is, there will be greater inflow in 80% of years). The long-term median for River Murray system inflows is 9,340 GL and the volume in 2012–13 was 8,540 GL.

Figure 4.5 Annual inflows to the River Murray system since 1892 (modelled current conditions, *including* inflows to Menindee Lakes, but *excluding* Snowy Mountains Scheme, inter-valley transfer and environmental water inflows)



Total inflows to the River Murray system (*excluding* inflows into Menindee Lakes, Snowy Mountains Scheme, inter-valley transfers and environmental water inflows) were around 5,660 GL. This volume has an AEP of 72%. The long-term median for this inflow calculation is 8,170 GL and the volume in 2012–13 was 7,020 GL.

The similarity in values between 2013–14 inflow volumes with and without inflows into Menindee Lakes demonstrates the very small contribution of flow from the Darling River this year. This was because of the hot, dry conditions experienced throughout the northern Basin over the past 24 months.

Active storage in the Murray–Darling Basin

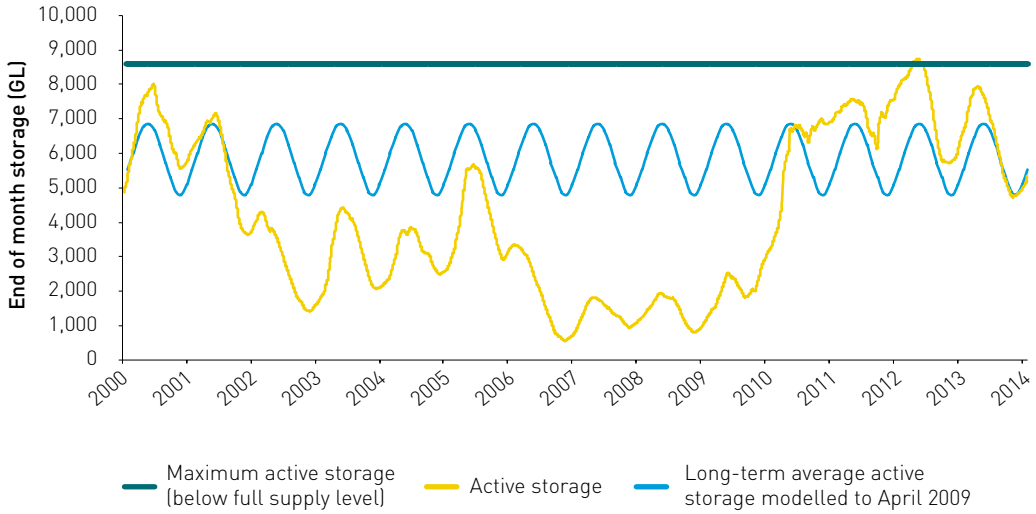
Active storage is the portion of the reservoir that can be utilised for flood control, power production, navigation and downstream releases. From late 2001 to late 2010 active storage was well below the long-term average due to drought conditions. From late 2010 to late 2013 storage levels remained well above the long-term average, until spring 2013 when high demands for water brought storage levels down to the long-term average, Figure 4.6.

Several weeks of extreme temperatures, during summer 2013–14, contributed to the high demands for water, with a period that featured some of the highest system losses ever observed. Water storage in Hume Reservoir was drawn down quickly during this time with the volume dropping to 36% capacity by early April.

Mid-April saw a return to wetter weather across large areas of the southern Basin, with particularly heavy rainfall across South Australia and the mid-Murray irrigation districts. This led to a rapid decline in system demands that was quite unlike any seen for many years. Storage levels in Hume and Dartmouth reservoirs began to rise slowly from late April onwards.

In contrast to 2012–13, there was very little inflow to the Menindee Lakes system over the last 12 months. Total inflow to Menindee Lakes was 40 GL, with an AEP of 99%, compared to last year's inflow of around 1,520 GL and an AEP of 36%. The low inflow from the Darling River in 2013–14 was a key factor in reducing the water available in the total system.

Figure 4.6 MDBA active storage June 2000 to June 2014



Who controls Menindee Lakes?

Menindee Lakes provide the water supply for the nearby towns of Broken Hill and Menindee. They also supply water for agricultural purposes in the lower Darling system and provide additional flow to the lower Murray when required.

At full supply level the lakes can store 1,731 GL of water, which can be raised to 2,050 GL during wetter periods. When the storage volume is below 480 GL New South Wales is in control of the lakes. When the volume increases above 649 GL the MDBA takes control.

MDBA have had control of Menindee Lakes since April 2010 while storage levels were high. In mid-February 2014 storage dropped below 480 GL and control returned to New South Wales.

New South Wales had previously controlled Menindee Lakes from March 2001 to April 2010 due to the extended drought.

The total MDBA active storage on 30 June 2014 was 5,320 GL. This is around 200 GL below the long-term end-of-June average. The Bureau of Meteorology has indicated (as at June 2014) that El Niño conditions are likely to develop during spring 2014 so the water in reserve may be very valuable if there is a return to drought in the southern Basin.

State water shares

The year 2013–14 marked the first time that South Australia deferred a portion of their entitlement flows for later use. Under Schedule G of the Murray–Darling Basin Agreement, which came into effect in 2011, South Australia may defer some of its entitlement flow, which is then stored in River Murray storages under specific provisions, in order to build a reserve for critical human water needs and private carryover. South Australia used these provisions to defer 50 GL of entitlement.

State water shares in MDBA storages at the beginning and end of 2013–14 are shown in Table 4.2.

Table 4.2 Water shares for New South Wales and Victoria — end of June 2013 and June 2014

	STORAGE AT END OF JUNE 2013 (GL)[a]			STORAGE AT END OF JUNE 2014 (GL)[a]			
STORAGE	NSW	VIC	TOTAL	NSW	VIC	SA[b]	TOTAL
Dartmouth Reservoir	1,762	1,878	3,640	1,547	1,928	43	3,505
Hume Reservoir	811	1,073	1,884	507	979	0	1,550
Lake Victoria	283	248	531	234	224	7	460
Menindee Lakes[c]	678	574	1,253	380	0	0	380
Total[d]	**3,534**	**3,773**	**7,308**	**2,671**	**3,130**	**50**	**5,895**

a. Data relates to total storage.

b. South Australia has deferred a portion of its entitlement flows. This volume exists in storage under specific provisions and does not contribute to the figure for total storage volume.

c. When the storage volume is less than 480 GL, water is not available to MDBA.

d. Accounts are based on the best available data, which may contain some unverified operational data that could change in the future. Figures are rounded to the nearest GL and that is why some calculations in this table appear slightly incorrect.

At the end of 2013–14, the following volumes were also available for use in the River Murray in 2014–15:

- about 230 GL of water in inter-valley trade accounts in the Murrumbidgee and Goulburn valleys
- 370 GL of River Murray Increased Flow environmental water (stored in the Snowy Mountains Scheme)
- 215 GL of water in the River Murray drought account. The drought account is a reserve held in Snowy storages that the states can call on to supply critical human water needs in times of severe shortage.

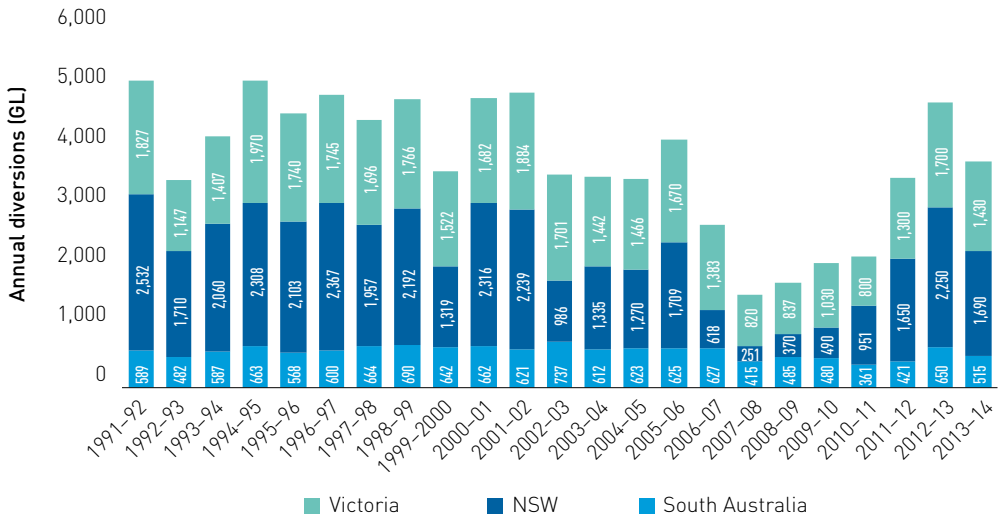
State water allocations, diversions and carryover

Water availability at the start of 2013–14 was relatively high. South Australia started the year with a 100% allocation for the third consecutive year. The New South Wales high security allocation started at 97% and New South Wales general security access licence holders started at 38%. General security licence holders also had access to, on average, about 12.5% allocation as carryover from the previous year.

In Victoria, Murray high reliability water shares started with an allocation of 42% compared with a starting allocation of 26% for the previous year. Victorian licence holders also carried over, on average, about 63% allocation into 2013–14. By early October 2013 allocations had increased to 100% for both New South Wales high and general security access licence holders, and 100% for high reliability water shares in Victoria. On the lower Darling River, both general and high security water holders had a 100% allocation for the whole of 2013–14.

With high water availability and early increases in allocations, total water diversions (not including environmental water) during 2013–14 for Victoria, New South Wales and South Australia were around 3,600 GL, see Figure 4.7. This volume was not quite as large as 2012–13, but was still the third highest year of usage since 2001–02. Demands for crop and pasture water were high during much of the spring–summer period because of hot and dry conditions across the southern Basin. However, usage was suppressed towards the end of the irrigation season following good rainfall throughout February to April.

Figure 4.7 State diversions River Murray system (not including environmental water) 1991–92 to 2013–14 (Diversions include the lower Darling and any inter-valley trade received by a state. 2013–14 figures are indicative only and may change as updated data becomes available).



Delivering environmental water

During 2013–14, we again assisted with delivering environmental water held by the Basin states, The Living Murray and the Commonwealth Environmental Water Holder to target a range of environmental outcomes.

Environmental water was delivered in every month of the year, see Chapter 2 'Restoring river and ecosystem health' page 50, with the largest volume being delivered throughout October and November following a period of natural high flows. These spring environmental releases were part of a co-ordinated action that aimed to achieve environmental benefits at multiple sites throughout the River Murray system. As part of this event we co-ordinated a two week trial of regulated releases at 18,000 ML/day from Yarrawonga Weir. The aim of this trial was to achieve critical inundation depths of the threatened Moira grass plains within Barmah–Millewa Forest.

In the latter half of the year we also assisted in delivering environmental water to commission new environmental water management structures at Mulcra Island, Hattah Lakes and Gunbower Forest. Watering these sites will continue into 2014–15 (see page 50).

Around 600 GL of environmental water was delivered throughout the year, with much of the water bringing benefits to sites including Barmah–Millewa Forest, the Edward–Wakool system, Broken Creek, Gunbower Creek, the Coorong and Murray Mouth.

Flow to South Australia

South Australia began the year with its full entitlement of 1,850 GL for the third consecutive year. No additional dilution flow was delivered to South Australia in 2013–14 as the required monthly trigger volume at Menindee Lakes was not met at any point throughout the year.

Flow across the border in the first weeks of July was at entitlement rates. Following increased rainfall and inflows in mid-July, MDBA announced 'unregulated flows' within the River Murray system on 17 July 2013.

Periods of unregulated flow are declared by the MDBA when it is forecast that flows in the River Murray system cannot be captured in Lake Victoria — because of operating rules, inlet capacity constraints or storage capacity constraints — and the flow passing through to South Australia will be in excess of its entitlement flow.

Further rain events and responsive catchments during July and August increased River Murray system inflows, resulting in unregulated flows being extended until 28 October. Although unregulated conditions lasted for over three months, the volume of additional flow passing to South Australia was not as large as in recent years, for example the peak flow across the border during this period was around 25,000 ML/day in late September, compared with a peak flow at the same time in 2012–13 of 50,000 ML/day.

Unregulated flows ceased on 29 October 2013 and the system has remained fully regulated since then. Between October 2013 and June 2014 South Australia's entitlement flow was further boosted by the delivery of environmental water that had been traded from upstream.

The total annual flow across the South Australian border, including unregulated flow, environmental water and traded water was about 3,570 GL (AEP 67%), compared with 7,020 GL total annual flow last year and the long-term median annual flow of 5,180 GL.

The Murray component of the Snowy Mountains Scheme

The Snowy Scheme terms of operation are defined in the Snowy Water Licence, which sets a minimum release that must be achieved by the licensee (Snowy Hydro Limited) over the course of the Snowy water year, which runs from 1 May to 30 April.

The required annual release volume may change during the Snowy water year and Snowy Hydro Limited is free to release volumes in excess of the required release. During the 2013–14 Snowy water year, the required annual release increased from a starting value of 67 GL to close at 822 GL.

The 2013–14 required annual release was adjusted by the within-year release requirements and through the course of the year (to March 1) by the changing dry inflow sequence volume. The within-year release requirements oblige Snowy Hydro Limited to release additional water to compensate for spill from Murray storages under certain conditions. The dry inflow sequence volume is a measure of how much the inflows to the Snowy scheme are below the level required to ensure a reliable supply through a repeat of drought conditions, and reduces the release obligation.

The accounted release to the Murray was 990 GL, comprising the 822 GL required annual release and 168 GL advanced on the 2014–15 required annual release. During the year 2 GL was credited to the drought reserve held in Snowy storages bringing the total held to 215 GL. The maximum volume allowed in the drought reserve is 225 GL.

Operating the River Murray system

During 2013–14 River Murray system operations followed a similar pattern to those of 2012–13. During the early part of the year operations were driven by high inflows, and upper storages were being managed to mitigate potential flood events. As inflows receded, high water availability combined with extremely hot and dry weather pushed demands and overall system losses to high levels.

Welcome rain arrived to the southern Basin in late summer, with average to wet conditions continuing over the following months. One particular rainfall event in early April delivered over 100 mm along the length of the Murray. This had a profound effect on water demand, which virtually ceased for the remainder of the irrigation season. With only minor demands throughout the system, releases from headwater storages were reduced to minimum flows from mid-April onwards in order to conserve water.

We again delivered a large volume of environmental water to sites throughout the River Murray system. The nature of environmental water delivery means that its timing and location of use can vary greatly between years. This in turn presents a range of operational challenges that we continue to work through with our partner jurisdictions and other stakeholders.

Upper Murray system

At the start of 2013–14 storage was 3,640 GL at Dartmouth Reservoir (94% of capacity) and 1,884 GL at Hume Reservoir (63% capacity). There were high flows at Jingellic on the upper Murray and Tallandoon on the Mitta Mitta River over July and August but they did not exceed minor flood levels on these tributaries.

Storage at Dartmouth Reservoir gradually increased from July through to mid-September 2013, when the reservoir reached 99% capacity and was considered to be 'effectively full'. The storage then remained effectively full (>99% capacity) until mid-November. From mid-August to early November 2013 releases were made to prevent flow over the spillway to avoid erosion issues. These releases were followed by Dartmouth to Hume 'harmony' transfers, resulting in the storage volume being drawn down to about 89% in mid-April. From late April through to the end of June releases remained at around minimum flow rates and storage levels began gradually rising. As of 30 June 2013 the storage volume was 3,505 GL (91% capacity).

Harmony transfers are used to provide additional airspace in Dartmouth Reservoir to reduce the risk of flooding for the coming winter and spring, without impinging on the security of supply to downstream water users. The transfers also benefit the operations of the Dartmouth power station, reduce the rate of fall of Hume Reservoir and provide higher in-channel flows in the Mitta Mitta River.

The total volume released from Dartmouth Reservoir during 2013–14 was around 950 GL. This was a significantly greater volume compared to the 500 GL released in 2012–13 and the 100 GL in 2011–12. Due to the prolonged length of time that Dartmouth was either effectively full or releasing harmony transfers, minimum releases of 200 ML a day were only in place from mid-April 2014 through to the end of May. Throughout most of June, AGL Hydro called on entitlement water for power generation which raised the release above minimums.

At Hume Reservoir the 2013–14 year began with releases at a minimum rate of 600 ML/day. High inflows during July and August resulted in Hume filling close to 99% and then effectively spilling from mid-August until late September. These spills were not sufficient to generate downstream flows above minor flood levels. Releases to meet environmental, irrigation and normal system demands from October to April resulted in Hume Reservoir being drawn down to 36% capacity by early April. Reduced demands from mid-April onwards combined with reasonable inflows caused the storage to begin gradually filling. As of 30 June 2013 Hume's storage volume had risen to 1,550 GL (51% capacity).

Mid-Murray

At Yarrawonga Weir the year started off with the pool level relatively low at 124.37 m AHD. Water was released at this time to provide downstream dilution flows during essential works at Mildura Weir. Higher inflows into Lake Mulwala during late July and August were passed through Yarrawonga Weir with a peak release of 44,000 ML/day on 24, 26 and 27 August 2013. Flows generally receded throughout the spring, and by mid-December the release was below downstream channel capacity (around 10,600 ML/day downstream of Yarrawonga).

Because of hot weather and high demands, the release from Yarrawonga Weir remained above 9,000 ML/day throughout all of summer before gradually reducing from mid-March onwards. A significant rain event along the Murray in early April caused a steep drop in demand along the system. This was reflected in the release from Yarrawonga Weir reducing to a minimum flow of 1,800 ML/day from mid-April through to the end of the irrigation season in mid-May.

Construction of Yarrawonga Weir in 1938 (MDBA historic images collection)

The Barmah Choke was not a major constraint on the delivery of water in 2013–14, even though there was limited water available in Menindee Lakes. This is partly because of the flexible approach used for delivering environmental water. The rule preventing trade of allocations from above to below the 'choke' has been relaxed since September 2007. Although we review the relaxation fortnightly, it has remained uninterrupted.

Inflow from the Goulburn River at McCoys Bridge totalled 910 GL for the year (AEP of 55%) with a peak flow during late September of 9,900 ML/day, which is well below the minor flood level. At Torrumbarry Weir flow exceeded 20,000 ML/day for eleven days in early September 2013 and then another eight days at the end of September. Flows of this magnitude remain within the River Murray channel and do not flow overbank into Gunbower or Koondrook–Perricoota forests. A peak flow downstream of Torrumbarry of 23,800 ML/day was recorded on 6 September 2013 (minor flood level occurs at about 39,000 ML/day).

Flows along the Murrumbidgee River were very low in 2013–14, with inflow to the Murray measured at Balranald totalling about 350 GL (AEP 90%). This is well below the long-term average of 1,260 GL and the median inflow of 880 GL. The flow peaked during early August at 4,100 ML/day.

At Euston, the flow exceeded 20,000 ML/day from early September to mid-October 2013 with a broad peak of about 27,000 ML/day at the end of September (minor flood level occurs at about 88,000 ML/day).

Downstream of the confluence of the Murray and Darling rivers the flow at Wentworth was primarily driven by Murray flows throughout 2013–14. The flow reached a peak in late September 2013 of 26,000 ML/day (minor flood level occurs at about 87,000 ML/day). The flow decreased to below 10,000 ML/day in early January and remained below this to the end of the year.

Menindee Lakes, lower Darling River and the Great Darling Anabranch

Total inflows to Menindee Lakes between July 2013 and June 2014 were extremely low, totalling only 40 GL (AEP 99%). This is well below the long-term median annual inflow of about 950 GL. These low inflows were due to poor rainfall throughout the northern Basin, in particular over the summer period, which led to only minor inflows into the Darling River.

Storage levels at the Menindee Lakes began the year at 1,253 GL (72% capacity). Flows in the Darling River at Wilcannia upstream of the Lakes were relatively stable at 1,200 ML/day for the first two months of the year, as the last water from an earlier rainfall event made its way down the system. From September 2013 the flow at Wilcannia began gradually receding and by the start of January 2014 there was barely any flow in the Darling from Bourke to Menindee.

Inflows into Menindee Lakes were effectively zero from December through to March. Extreme heat over this period also resulted in very high evaporation rates across the storage. We requested regulated releases averaging around 2,500 ML/day (measured at Weir 32) over the period from early-December to mid-January 2014, before gradually reducing the release towards a minimum summer flow rate in anticipation of handing control of Menindee Lakes over to New South Wales. In mid-February 2014 the combined storage of Menindee Lakes dropped below 480 GL, at which point MDBA no longer had access to call on water releases.

Welcome rain arrived to the north of the Basin in late March, generating significant stream-flow responses along the Condamine–Balonne and Moonie Rivers in Queensland, and along the Namoi River in New South Wales. The higher flows were quite short in duration, generating minor to moderate flooding for a few days. These flows entered the Darling and slowly made their way downstream, arriving at Menindee Lakes in late April with a small volume continuing to enter the lakes up until June. In total around 35 GL of inflow to Menindee Lakes was generated by this event.

As of 30 June 2014, Menindee Lakes total storage was relatively steady at about 380 GL (22% capacity). Minimum releases of 200 to 300 ML/day have been in effect since February 2014.

Lake Victoria

At the start of the year storage at Lake Victoria was 531 GL (78% capacity). The storage level rose steadily throughout July, and as of 17 July MDBA announced 'unregulated flows' within the River Murray system, indicating that flows in transit were greater than the volume that could be captured in Lake Victoria. Further rain events and responsive catchments during July and August extended the period of unregulated flows until 28 October.

Lake Victoria's storage volume peaked on 28 October at 671 GL (99% capacity, 26.95 m AHD). The lake was then drawn down to 600 GL by the end of November, and it stayed at around this volume through to mid-January 2014. From mid-January Lake Victoria's volume continued to be lowered, reaching its lowest level for the year of 405 GL (24.59 m AHD) on 21 April 2014. Following increased inflows from the River Murray, Lake Victoria's storage volume then began slowly refilling and by the end of June was 460 GL (68% capacity, 25.11 m AHD).

The normal target levels identified in the Lake Victoria operating strategy were not applicable in 2013–14 due to a conditional rule that removes the requirement to lower the lake level when MDBA ceases to have access to water in Menindee Lakes. This is designed to prevent impacts on state water entitlements during dry years. Lake Victoria levels remained below the normal end-of-February and end-of-March targets identified in the operating strategy. However, the level remained above 24.5 m AHD at the end of April and throughout May.

The circumstances in 2013–14 were unusual, as when storage in Menindee Lakes is low it is typical that Lake Victoria would be below the draw-down targets. Our modelling indicated that the conditional rule triggered this year would have occurred in only 16 out of the last 106 years.

Works were carried out on the Lake Victoria outlet regulator throughout 2013–14, see page 79. To assist with the works we aimed to keep the storage level of Lake Victoria as low as possible throughout May and June. In May several of the weir pools on the lower River Murray were surcharged above their normal full supply level (FSL), and then held at this level for the remainder of the year. Weir pools involved were Euston (raised to 47.80 m AHD or 20 cm above FSL), Wentworth (raised to 30.90 m AHD or 10 cm above FSL), Lock 9 (raised to 27.50 m AHD or 10 cm above FSL) and Lock 8 (raised to 24.90 m AHD or 30 cm above FSL).

Lower Lakes and barrage operation in South Australia

High lake levels and the delivery of significant volumes of environmental water allowed releases through the barrages to continue throughout the year, apart from during 'reverse head' periods. These occur when downstream water levels in the Coorong exceed upstream water levels in Lake Alexandrina, because of high tides and/or storms, requiring certain barrage gates to be closed to limit the inflow of sea water. The Murray Mouth remained open throughout the year, enabling significant volumes of salt to be exported.

The year started off with the Lower Lakes at 0.65 m AHD (5-day average level). The lakes were steadily filled throughout winter, reaching 0.75 m AHD in mid-August. With unregulated flows coming across the border, barrage releases were varied throughout September and October to target an average lake level of between 0.70 m AHD and 0.75 m AHD. The peak release through the barrages during this period was estimated to be around 42,000 ML/day in early October. Although flows into South Australia decreased from mid-spring, they were boosted by the delivery of significant volumes of environmental water that continued for several months.

In mid-November the lakes were at 0.78 m AHD and barrage releases were around 2,500 ML/day. At this point barrage releases were increased in order to promote flowering of the aquatic plant *Ruppia tuberosa*, which is considered a vital element of the Coorong's

ecology. These increased releases drew the average lake level down to 0.71 m AHD in early December. A prolonged heatwave throughout summer caused extensive evaporation from the lakes, and although releases from the barrages were held relatively low, the average lake level dropped to 0.60 m AHD by mid-February.

Extensive rainfall across South Australia in February and April helped increase the lake level to 0.65 m AHD. Releases through the barrages have averaged around 2,000 ML/day since late March, and at the end of June the average lake level was 0.68 m AHD.

Operations since 2011 to 'cycle' water by varying the water level in the lakes appears to have had a positive impact in reducing salinity levels in Lake Albert. At Meningie, salinity has decreased from 4,500 EC units in June 2012, to 3,000 EC units in June 2013, and was down to current levels of 2,500 EC in June 2014. At Milang Jetty, on Lake Alexandrina, salinity at the end of June 2014 was about 700 EC units, compared to 600 EC at this time in the past two years.

Barrage operations in 2013–14 continued to target fish passage to support movement and recruitment for a range of fish species. The fishways at Goolwa and Tauwitchere remained open and flows to encourage fish to enter the fishways were provided when conditions were suitable.

For much of the year regulated releases were predominantly directed out of the barrages at Tauwitchere to improve estuarine conditions in the southern lagoon of the Coorong and to provide suitable habitat for fish, invertebrate and waterbird communities. Salinity levels in the southern lagoon of the Coorong was around 45,000 EC in mid-June, which is within the target thresholds for key plants and animals.

Improving river operations

The River Operations improvement team was established in 2013, following the end of the five year operations review. It focuses on documenting and improving existing River Murray system operations against current and future requirements, as set out in the Murray–Darling Basin Agreement and the objectives and outcomes for River Murray system operations. The objectives and outcomes document is set by the Basin Officials Committee and provides a transparent decision making framework for operations. It is available on our website at <www.mdba.gov.au/media-pubs/publications/objectives-and-Outcomes-for-River-Operations>.

The river operations improvement team works closely with river operators and state agencies to identify efficient and effective ways to modernise river operating practices. Our work in 2013–14 included:

- revising our emergency action plan for the River Murray system
- commencing work on documenting river operating procedures
- reviewing the Murray–Darling Basin Agreement provisions for water accounting during periods of 'special accounting' (which apply during dry conditions), to ensure they continue to work effectively in extreme dry conditions
- reviewing processes and developing reference material on our obligations under the Basin Plan to 'have regard to' water quality targets and risk management strategies when making river operations decisions
- using adaptive management to learn and develop improved ways of operating the River Murray system, for example we:
    - trialled releasing water from Menindee Lakes to the River Murray in a flow pattern designed to support the spawning and recruitment of native fish in the lower Darling River, achieving multiple benefits from the release
    - tracked the movements of 25 adult Murray cod in the Mitta Mitta River. We will relate this data to the river's flow and water temperature regime, with a view to identifying ways to help protect and increase Murray cod numbers

- installed equipment that will allow us to test whether there is flexibility in an operating rule which limits the rate of river level fall downstream of Hume Dam, known as the 'six inch rule'. This knowledge could help us prevent undesirable flooding of the Barmah–Millewa Forest and save water in Hume Dam, without compromising riverbank stability
- holding the inaugural river managers' forum in November 2013 in Brisbane and expanding our virtual network for sharing information between operators.

New specific objectives and outcomes were developed during 2013–14, and existing specific objectives and outcomes were refined for:

- the Barmah–Millewa Forest environmental watering allocation
- the Dartmouth Dam minimum planned regulated release, to better achieve water conservation and protect the downstream environment in the Mitta Mitta River
- periods of tier 2 and tier 3 water sharing arrangements, to manage the risk to critical human water needs
- accounting for adjustments in flows to South Australia.

Salt interception schemes

The River Murray salt interception schemes are a significant component of the Basin Salinity Management Strategy 2001–15. By intercepting saline groundwater and drainage inflows before they reach the River Murray, or its tributaries, the salt interception schemes help us to achieve and maintain agreed salinity levels in the River Murray. The schemes are also operated to maximise environmental benefits to the Basin. About 397,739 tonnes of salt were diverted from the River Murray in 2013–14, see Table 4.3.

Table 4.3 Joint/shared salt interception scheme performance reporting 2013–14

SALT INTERCEPTION SCHEMES	VOLUME PUMPED (ML)	SALT LOAD DIVERTED (TONNES)	AVERAGE SALINITY (EC UNITS)	TARGET ACHIEVED (% OF TIME)	POWER CONSUMPTION KWH (TOTALS)
Pyramid Creek	1,155	29,241	40,971	100	202,753
Barr Creek	5,486	24,165	7,003	100	100,138
Mildura–Merbein (being re-built)	0	0	0	n/a	0
Mallee Cliffs	1,566	52,467	52,333	100	493,365
Buronga	2,175	61,505	44,183	100	465,864
Pike River	421	19,295	56,100	100	108,021
Bookpurnong	1,036	27,766	41,827	69	381,095
Loxton	1,009	14,762	24,545	86	398,473
Woolpunda	4,866	96,606	31,929	94	3,075,848
Waikerie	3,658	71,932	31,603	88	1,513,300
Rufus River	0	0	0	n/a	0
Total groundwater diversion	0	0			0
Total salt pumped during the year	**21,372**	**397,739**			

Table 4.4 shows the amount of salt diverted over the last five years. The amount of salt diverted in 2009–10 was significant because during the drought all schemes were operated to maximum efficiency to reduce salinity in the river system. In the years that followed a significant number of bores were flooded, or power was disconnected because of the floods. In northern Victoria the floods caused so much damage that one of the salt interception schemes was out of service for two years.

During 2013–14 the rehabilitation of the Mildura–Merbein salt interception scheme (stage 1) was completed. Development of the phase 2 bore field and disposal pipeline was still deferred as no agreement had been reached by partner governments. Phase 1 bores continued to dispose to Wargan Basin via Lake Ranfurly. The Rufus River salt interception scheme (NSW) was not operated during 2013–14 due to budget cuts.

There are now 18 salt interception schemes (including five state-owned schemes) in operation, Figure 4.8. This represents a significant achievement under the Basin salinity management strategy.

Although construction of the upper Darling salt interception scheme (30 kms downstream of Bourke) was completed in 2011–12, commissioning the works has been delayed pending clarification of the required disposal volumes and the ability of the disposal basin to manage these volumes. During 2013–14 the New South Wales Office of Water funded testing and evaluation of the upper Darling salt interception scheme. During the past year operating and maintaining salt interception schemes continued to focus on minimising running costs. By careful monitoring it was possible to maintain target groundwater levels while scheduling pumping times to coincide with periods of lower power tariffs.

More information about the Basin salinity management strategy is in chapter 2 'Restoring river and ecosystem health', see page 58.

Table 4.4 Total salt load diverted from the River Murray 2009–10 to 2013–14

	2009–10	2010–11	2011–12	2012–13	2013–14
Salt load diverted (tonnes)	489,101	324,162	362,508	322,686	397,739

Figure 4.8 Salt interception schemes along the River Murray

CHAPTER 5
MANAGEMENT AND ACCOUNTABILITY

Risk management	p. 101
Our people	p. 107
Our workforce	p. 110
Work health and safety	p. 116
Our planning and finances	p. 120
Our information resources	p. 125
Staff snapshots	p. 127

Overview

In 2013–14 we saw a continuing focus on strengthening the internal governance frameworks to improve the operation of the MDBA. In particular major work was involved in preparing for the introduction of the new financial framework, the *Public Governance, Performance and Accountability Act 2013,* which would commence on 1 July 2014. This was a major task with the preparation of new policies and procedures, development of new templates to assist in procurement practices and new authorisations across the agency.

We also tested and updated our disaster recovery and business continuity procedures, updated our risk management plan, approved a new fraud control plan and implemented new public interest disclosure arrangements. Our ongoing focus on risk management was also recognised with the achievement of our best result in the Comcover risk management benchmarking survey with a score of 8.4 out of 10.

Preparing for our new role as a regulator from 1 July 2014, when the water trade rules come into effect, was also a major area of activity. This saw the development of a Basin Plan compliance strategy and a strengthening of conflict of interest arrangements.

Highlights

- Supported the review of joint programs, including completing the reviews of cost shares, governance and salinity, and continuing with reviews of cost efficiency of river operations, The Living Murray and monitoring.
- Published the Basin Plan compliance strategy.
- Updated the risk framework and completed the fraud control plan 2014–16, including establishing arrangements to prevent potential conflicts of interest.
- Successfully tested and further enhanced the disaster recovery and business continuity arrangements.
- Improved our financial and procurement guidelines.

Senior management committees

During the year senior management committees continued to provide advice and assurance to the Chief Executive and to manage cross-agency aspects of MDBA business.

Executive Committee

The MDBA's Executive Committee, chaired by the Chief Executive, is the main forum in which cross-agency issues on policy and corporate governance are discussed. The committee meets on a weekly basis and comprises the executive directors of our four divisions (Policy and Planning, Environmental Management, River Management, and Corporate and Business Services), the General Manager, Communications, Engagement, Research and Compliance, and the Director Media Strategy and Relations.

During 2013–14 the committee considered strategic and critical management issues including:

- implementing the Basin Plan, including significant early milestones such as the constraints management strategy and water trading rules
- providing MDBA input into the review of joint program delivery options for the Basin Officials Committee and Ministerial Council
- building leadership capacity in the executive levels of the organisation
- continued high-level decision-making on strategic direction, risks and positioning
- fulfilling agency statutory and accountability obligations.

Information Management Committee

The Information Management Committee advises on, and provides strategic direction for our information management and information technology initiatives. It also discusses and endorses major projects which have information management or information technology components or impacts. The major

focus of the committee has been developing the next version of the enterprise information strategy to position and provide direction for our information management and technology.

The committee is chaired by the General Manager Policy and Coordination and Chief Information Officer, Policy and Planning Division. Its membership includes two additional senior executive service officers who have backgrounds in strategic ICT issues.

Health and Safety Committee

The Health and Safety Committee operates in accordance with the *Work Health and Safety Act 2011* and meets quarterly to oversee work health and safety matters across the MDBA. In 2013–14 the committee met in July, October, February and May. Committee members include: health and safety representatives from MDBA work groups, a representative from the Employee Consultative Committee, the Director, People, Planning and Performance, the Chief Emergency Warden and the Work Health and Safety Coordinator. The Chair for 2013–14 was the General Manager, Constraints Management Taskforce.

Work health and safety issues considered by the committee during the year included:

- health week activities
- further embedding arrangements to comply with the new work health and safety legislative framework
- new and revised policies, procedures and guidelines, including rehabilitation policy, sit-stand work arrangements, emergency response procedures and safe work practices guidelines
- compensation and non-compensation rehabilitation issues and statistics
- strategies to reduce the incidence and impact of musculoskeletal disorders and psychosocial injury issues
- workplace inspections and workplace incident and injury reports
- statistics provided by the employee assistance provider
- reports from first aid officers, emergency wardens and harassment contact officers
- accommodation issues with work health and safety implications.

Workman with an injured hand at Hume Dam in 1953 (MDBA historic collection)

Employee Consultative Committee

The Employee Consultative Committee was established under the MDBA Enterprise Agreement 2011–14.

The committee comprises an elected employee representative from each division, three elected employee organisation representatives (from Professionals Australia, the Community and Public Sector Union, and the Media Entertainment and Arts Alliance), the Chief Executive and two other management representatives.

The Employee Consultative Committee provides a forum for:

- staff consultation and input into the decision making process in relation to changes to existing policies, guidelines or procedures or developing new policies, guidelines or procedures referred to in the Enterprise Agreement

- consultation and agreement prior to the Chief Executive commencing a formal variation process under the *Fair Work Act 2009* in relation to changes in any current conditions or entitlements included in the Enterprise Agreement
- providing advice to the Chief Executive on matters arising from the operation of the Enterprise Agreement.

The committee generally meets quarterly, or more frequently if significant issues arise, to communicate, consult and cooperate with employees on matters affecting the workplace and the operation of the Enterprise Agreement. In 2013–14 the Employee Consultative Committee met in August, November, February and May.

During 2013–14 the committee reviewed MDBA policies, staff accommodation, organisational restructuring, change management support programs, response to the State of the Service Employee Census and the implementation of initiatives and commitments contained in the Enterprise Agreement, such as job streams and leadership development. There was also significant work completed in updating and implementing significant human resource policies and initiatives.

Audit Committee

The Audit Committee was established by the Chief Executive to provide independent assurance and assistance to her on the MDBA's risk, control and compliance framework and its financial statement responsibilities.

The Audit Committee met four times during the financial year, in October 2013 and in February, April and June 2014.

The Committee's membership changed on 31 March 2014, with the independent chair and three members completing their terms of appointment. The membership of the Committee prior to 31 March 2014, and number of meetings attended, was:

- Paul McGrath (independent Chair) — two meetings
- David Dreverman (Executive Director, River Management Division, deputy Chair) — two meetings
- Jody Swirepik (Executive Director, Environmental Management Division, member) — one meeting
- Frank Nicholas (Executive Director, Corporate and Business Services Division, member) — two meetings
- Tony McLeod (General Manager, Water Resource Planning, member) — two meetings.

From 31 March 2014 the membership of the committee and number of meetings attended was:

- Jenny Morison (independent Chair) — two meetings
- David Dreverman (Executive Director, River Management Division, deputy Chair) — two meetings
- Russell James (Executive Director, Policy and Planning Division, member) — two meetings
- Andrew Reynolds (General Manager, River Management, member) — two meetings
- Jo Kneebone (General Manager, Environmental Water, member) — two meetings.

Audit Committee meetings considered the internal audit work plan, internal audit reports, implementation of audit report recommendations, reports from the Australian National Audit Office, progress with the MDBA annual financial statements and Certificate of Compliance, as well as reports on risk management, fraud control and business continuity management.

Presentations were received from program areas of MDBA to provide the committee with insight into their operational issues and risk management. The October 2013 meeting of the committee focused on the MDBA's financial statements.

Risk management

The effective management of risk is a key area of the control framework for which the Chief Executive has responsibility under the *Financial Management and Accountability Act 1997*. Risk management is an integral part of our operations, including in our corporate and business planning and reporting, procurement, project management, performance management and work health and safety responsibilities.

Our policies and approach to risk management are set out at high level in the Chief Executive's Instruction 1 — Managing risk and internal accountability and, in more detail, in our risk management policy, which includes the risk management framework. The risk management framework includes a range of policies and procedures for managing risks, including the fraud control policy and plan, the business continuity plan and the ICT disaster recovery plan.

The MDBA's risk management plan 2013–14 sets out our risk appetite, strategic and enterprise risks, controls and proposed risk treatments. The plan addresses risks at the strategic and enterprise level to achieving MDBA's objectives. These include high level risks across the organisation as well as risks to achieving major program outcomes. Lower level risk management plans address risks to individual programs and activities within the MDBA.

Workers replacing a bridge section at Lock 7 in 1970 (MDBA historic collection)

The Audit Committee and the Executive Committee monitor the risk management framework and implementation of enterprise risk treatments, and the Health and Safety Committee monitors work health and safety risks and treatments. Risk management at sub-program level is monitored as part of quarterly corporate planning and reporting to the Executive, the Authority and, through the Basin Officials Committee, to the Ministerial Council.

In 2013–14 we began updating the risk management policy and framework to align with new requirements under the *Public Governance, Performance and Accountability Act 2013*, including the new Commonwealth risk management policy.

Comcover

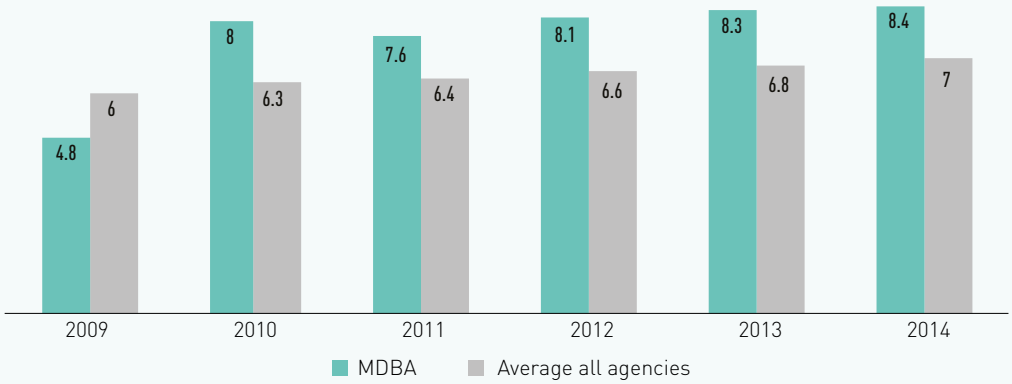
Comcover provides insurance cover to the MDBA. Identifying and assessing MDBA's insurable risks is done annually through Comcover's insurance renewal process. The MDBA is separately insured by Comcare for worker's compensation for employees.

A positive risk culture

In 2014 we again participated in the annual Comcover risk management benchmarking survey. The survey, which includes 135 Australian Government agencies (75% of the Comcover fund), provides an opportunity for agencies to review and measure how successfully risk management has been integrated into their business operations.

We achieved an overall result of 8.4 out of 10, our best result since we began participating in 2009, see Figure 5.1. This result led to a reduction of 9% in Comcover's 2014–15 insurance premium.

Figure 5.1 MDBA survey results compared with average scores of all participating agencies 2009 to 2014.



The Comcover survey determined that our strengths in risk management were accountability and responsibility, integration, and a positive risk culture. In some areas we received either the highest score or were among the top three agencies. We achieved significant improvement in business continuity management.

Our lowest scores were in the areas of risk profiling and reporting, communication and training, and resourcing. To address this we will focus on targeted risk training and online training in ethics, conflict of interest and fraud.

Fraud control and investigations

Our fraud control policy is set out in the MDBA fraud control plan, on our intranet and external website and in our contract documents. In 2013–14 our fraud risk assessment and fraud control plan were updated for the period 2014–16. This included a range of actions to identify and manage conflicts of interest, both for individuals and the organisation.

Our management of fraud and implementing the fraud control plan is monitored by the Audit Committee. All employees with financial delegations are required to address their compliance with the Commonwealth fraud control guidelines and report any actual or potential fraud related occurrences through the quarterly Certificate of Compliance process.

Fraud investigations

No incidences of fraud were identified in 2013–14.

Business continuity and ICT disaster recovery plans

During 2013–14 our internal auditors, KPMG, tested our arrangements for recovering from a business disruption. These are set out in the River Murray system emergency action plan and the MDBA business continuity and ICT disaster recovery plans. After considering their report we worked on improving these documents as well as our business impact assessment.

Internal audit

In 2013–14 KPMG provided internal audit services. The internal audit plans are developed in light of the MDBA risk management plan and following consultation with senior managers. In 2013–14 there was a slightly greater concentration on compliance audits, with the 2014–15 plan providing a balance between compliance and performance audits. KPMG also updated the MDBA fraud risk assessment and fraud control plan.

The following internal audit reports were finalised in 2013–14:

- environmental water
- internal audit framework (relating to water auditing)
- testing the River Murray system emergency action plan and MDBA business continuity and ICT disaster recovery plans
- corporate credit cards
- travel management
- IT general controls.

No serious matters were raised in the reports, with most recommendations focusing on enhancing internal controls.

We began work on an internal audit of budget management and updating our risk management plan. We also began preparatory work on two audits which will begin in 2014–15. These relate to information management and the South Australian Riverland Floodplains Integrated Infrastructure Program.

Implementing internal audit report recommendations is monitored by the Audit Committee.

Certificate of Compliance

The MDBA Certificate of Compliance system forms a key element of our corporate governance. Compliance monitoring seeks to ensure that the quality of the MDBA's financial management is both safeguarded and subject to ongoing improvement.

The Certificate represents the Chief Executive's report on the MDBA's compliance with the Australian Government's financial management framework. The results are provided to the Minister for the Environment and the Minister for Finance, by 15 October each year.

While the Certificate provides for external accountability, it also aims to improve on the organisation's capabilities surrounding the financial management framework, by further strengthening internal processes, following an analysis of non-compliance issues and implemented actions to improve processes and compliance.

Compliance performance for the 2013–14 financial year was assessed against:

- *Financial Management and Accountability Act 1997*
- Financial Management and Accountability Regulations 1997
- Financial Management and Accountability (Finance Minister to Chief Executives) Delegation
- Australian Government's foreign exchange risk management requirements
- legal and financial requirements for the management of special accounts
- Australian Government's financial management policies.

The scope of the Certificate is extensive and requires that all staff holding financial delegations, including senior executives, complete the assessments which provide input to the reported results. During 2013–14 the MDBA identified 75 reportable breaches, down from 77 last year. None of the matters reported were a significant risk to the MDBA.

During 2013–14 the MDBA carried out further training in financial management compliance. The training included a focus on the prescriptive elements of the financial management framework, as well as key behavioural aspects (for example feedback loops and the need for follow-up education and training). Periodic internal reviews were also carried out to corroborate the results of staff self-assessments.

The number of non-compliance instances reported by the MDBA is considered modest and can be readily contrasted with the substantial number, scope and complexity of our financial activities, with an annual expenditure of around $169 million and assets managed in excess of $2.5 billion.

Secretariat services

The Secretariat team provide support to the Authority and a range of committees established to support the MDBA in the delivery of our business. The team also supports the Murray–Darling Basin Ministerial Council and the Basin Officials Committee which are established under the Murray–Darling Basin Agreement, under which the joint programs operate (see Appendix A, page 188).

During 2013–14 the Secretariat provided support to over 40 committee meetings, under these arrangements, three of which were meetings of the Ministerial Council. We provided support to a new committee — the Basin Plan Implementation Committee — as well as providing establishment and secretariat support for the new term (term 2) Basin Community Committee members. We also provided support to sub-committees, including working groups and technical panels across the agency.

The Secretariat also worked with branches and divisions across the agency to create a high-level timeline of obligations, processes and commitments to reduce the risks of gaps and to better align work planning with committee meetings.

Appendix A, from page 188, includes a summary of committee meetings.

External scrutiny

Auditor-General reports

The MDBA's financial statements are audited by the Auditor-General. No additional audits carried out by the Auditor-General specifically involved the MDBA in 2013–14.

The Audit Committee monitors the implementation of recommendations made by the Auditor-General in its audit of the financial statements and any other audits it undertakes involving the MDBA. The committee also reviews all cross-agency audit reports, better practice statements and guides issued by the Auditor-General, where these are relevant to MDBA operations.

Commonwealth Ombudsman

The Commonwealth Ombudsman made no formal reports relating to the MDBA during 2013–14.

Parliamentary committees

There were no matters in relation to the MDBA, referred to House of Representatives or Senate committees during 2013–14.

Judicial decisions and tribunals

On 2 May 2014, Justice North of the Federal Court dismissed a challenge to the constitutional validity of the *Water Act 2007* in *Lee and Gropler v Commonwealth of Australia and MDBA* [2014] FCA 432. The matter is currently the subject of an appeal to the full Federal Court.

Legal services

The MDBA's legal services are provided mainly through an in-house legal team. We also use legal services through the Legal Services Multi-use List established by the Attorney-General's Department.

During 2013–14 internal demand for legal services included:

- advising all MDBA divisions in relation to implementing the Basin Plan
- coordinating preparation of the MDBA's case in relation to a constitutional challenge to the validity of provisions of the *Water Act 2007*
- contributing to the development of regulations under the Water Act
- providing advice to MDBA staff about program delivery and legislative obligations
- updating agency policies, procedures and documentation to implement public interest disclosure reforms, and providing related training to staff.

Privacy

The MDBA treats the personal information we handle in the course of our business in accordance with the *Privacy Act 1988*, including the Australian privacy principles which set out how we must collect, store, use or disclose, allow access to, and correction of, personal information. Our Australian privacy principle notice is available on our website <www.mdba.gov.au/privacy>.

Reforms to the Privacy Act, that began on 12 March this year, were the biggest seen in 25 years and contained some new and expanded privacy obligations on the way we must handle the personal information of our staff and stakeholders. Significant strategies were developed and implemented to ensure that we were able to meet the new privacy obligations from March 2014. Strategies included updating our privacy policy, practices and procedures, and providing training for staff.

The MDBA registered with the Office of the Australian Information Commissioner as a partner in Privacy Awareness Week 2014, which ran from 4 to 10 May 2014. It is the primary privacy and education event in the Asian Pacific region. One of the themes this year was the new privacy obligations due to the March 2014 reforms to the Privacy Act.

Freedom of information

The *Freedom of Information Act 1982* gives individuals the right to access copies of documents held by Australian Government ministers and agencies, with some exceptions.

During 2013–14 we received three freedom of information requests. We updated our freedom of information policy and procedures in line with the Australian Information Commissioner's freedom of information guidelines.

Under the Freedom of Information Act we must publish a range of information on our website as part of the Information Publication Scheme. This information includes our structure, what we do and how we do it, appointments, annual reports and consultation arrangements, and contact details for our freedom of information officer.

Details of how to obtain information released following freedom of information requests and information routinely provided to parliament are also published online. Our Information Publication Scheme agency plan outlines our approach to the scheme and what we include in our entry and publish online. Our Information Publication Scheme can be found at <www.mdba.gov.au/about-mdba/corporate-documents/information-publication-scheme>.

Documents we hold

The MDBA holds the following types of documents:

- working files, including correspondence, analysis and advice
- internal administrative records, such as personnel files, staffing and financial records and office procedures
- submissions and comments from the public and stakeholders
- papers relating to new and amending legislation, drafting instructions and draft legislation
- briefing papers and submissions prepared for the Commonwealth minister responsible for water
- documents relating to meetings and committees (such as agenda, minutes and reports)
- copies of questions asked in parliament, together with related replies
- tender documents
- government (including agency) policy statements, communiqués, guidelines and media releases
- contracts
- educational materials
- reports on research, water audits and MDBA activities.

How to lodge a freedom of information request

Your request must:

- be in writing
- state that the request is an application for the purposes of the Freedom of Information Act
- provide information about the document(s) to assist us to process your request
- provide an address for reply.

Please note charges may apply.

For more information, contact the MDBA's freedom of information officer:

FOI Officer
Murray–Darling Basin Authority
GPO Box 1801
CANBERRA ACT 2601
email: foi@mdba.gov.au
Phone: 61+2 6279 0100
Fax: 61+2 6248 8053

Table 5.1 Volume of ministerial advice 2009–10 to 2013–14

TYPE OF ADVICE	2009–10	2010–11	2011–12	2012–13	2013–14
Ministerial correspondence	21	6	0	0	0
Briefs	87	34	32	11	42
Question time briefs	6	10	0	0	0
Senate Estimates questions on notice	27	45	199	68	260

Directions under section 175 of the Water Act

No directions were given by the Commonwealth Minister under section 175 of the Water Act.

Advice to government

We provided advice to the Parliamentary Secretary for the Environment through briefings and the ministerial workflow system of the Department of the Environment to ensure the minister received timely advice. Table 5.1 sets out the volume of advice provided during 2013–14 compared to previous years.

Our people

Highlights

- The MDBA was voted 35th in the Australian Association of Graduate Employers' top graduate employers for 2014 and in the top five of Australian Public Service agencies.
- We continued our focus on enhancing leadership capability with the successful delivery of executive level 1 and executive level 2 MDBA leadership programs.
- We increased the rate of employee participation in learning and development activities provided in-house.
- We continued to upgrade the CHRIS21 payroll system to enhance performance.
- We placed four new graduates into ongoing positions within the MDBA and placed one former cadet into our graduate program.
- We implemented the executive level 1 mentoring program.
- We reviewed and updated our online induction system.
- We strengthened our early rehabilitation intervention by providing increased resources.

Learning and development

The MDBA is committed to the continuous development of all employees, and offers diverse training opportunities throughout the year. Courses held in-house this year included: effective performance feedback, writing skills for subject matter experts, personal efficiency program, manager as coach, and risk management, as well as a variety of work health and safety workshops.

During 2013–14 there was a noted increase in employee uptake and attendance at Australian Public Service Commission facilitated courses, including subjects such as: policy implementation, minute taking, executive level transition and strategic thinking. There was also continued demand for external IT computer training.

We continue to support employees who choose to study at a tertiary level. During 2013–14, 25 employees were approved students under the study assistance policy. The most popular areas of study were business, financial management, environmental management, public relations, communications and hydrology.

The MDBA also participated on the Ricegrowers' Association of Australia leadership development program which aims to develop emerging leaders within the rice industry and partner organisations across the Riverina.

Leadership

During 2013–14 one cohort of executive level 2 employees and two cohorts of executive level 1 employees participated in the MDBA leadership development program. This three month program combines structured learning in a series of facilitated workshops with experiential learning in the form of on the job projects relevant to our operational needs. The key objectives of the program are to:

- build a strong leadership cohort across the organisation with the flexibility to support a matrix workforce structure
- recognise and develop talented executive level staff for succession to senior executive service within the MDBA.

All executive level 2 employees have participated in the program. Over the next year the final cohort of executive Level 1 employees will complete the program which will offer them the opportunity to prepare for future leadership roles within the MDBA by shaping their strategic thought and leadership style.

Manager as coach

The MDBA offered a pilot training session to 18 executive level 2 employees to participate in a new initiative called manager as coach. It is expected that managers at every level are able to coach their staff. A successful coaching relationship between a manager and staff member requires both parties to be willing and committed to the process and the desired outcome. The program aims to equip managers with the tools of coaching and how to apply various coaching styles and skills to enhance staff engagement and increase the likelihood that an effective coaching relationship can be established. This in turn leads to happier and more productive staff.

A leadership development initiative under the executive level 1 leadership development program established a framework for executive level 1 staff to access mentors from within the MDBA. This pilot mentoring program also provided opportunities for executive level 2 staff, or above, to develop executive level 1 staff by sharing knowledge and experiences.

The MDBA also focused on developing senior executive service leadership with a number of staff participating in leadership programs. These included learning groups that brought together senior executive service staff from similar agencies to share ideas and issues.

Internal seminars

The MDBA internal seminar series continued to focus on supporting the professional development of our staff. This year we had many international speakers as well as internal staff presenting on a wide range of topics, including adaptive management, valuing our ecosystems, delivering politically sustainable water reform — insights from California, the Murray–Darling Basin and Israel, Indigenous policy-making, upland farmers and the Murray–Darling Basin salinity control effort.

This year we also ran a staff education program called 'Understanding our business'. The program provided an opportunity for staff across the organisation to learn more about MDBA's business and history. The program has four overarching topics:

- history and water policy reform
- the Basin Plan
- how the Basin works
- stakeholder engagement and communication.

Over 216 staff attended the five 'Understanding our business' seminars.

Coaching program

Executive coaching is offered to staff at the executive level 1 and executive level 2 levels as a way to improve leadership capability and team management, as well as to enhance effectiveness.

Executive coaching is also an essential part of the leadership development program. The MDBA offers one coaching session to each participant in the executive level 1 program and two coaching sessions for each participant in the executive level 2 program.

The employee coaching program has been strengthened by using training providers that consist of professional organisations with a range of specialities. Once a staff member is approved for coaching, they are matched to a suitable coach to provide the outcomes they are looking for.

Performance management

All MDBA employees are required to participate in the annual performance management and development scheme to assist the MDBA achieve our organisational goals and meet employee expectations.

The performance management plan seeks to:

- establish realistic and meaningful individual performance objectives for MDBA employees
- connect with individual and team goals with the strategic objectives of the MDBA
- act as a mechanism for seeking and providing feedback to employees, supervisors and managers that is constructive, fair and honest
- promote continual informal and formal communication relating to work goals.

In 2013–14 the MDBA conducted five workshops for staff on effective performance feedback which were aimed at:

- understanding their responsibilities in giving performance feedback
- developing strategies required for meaningful performance feedback conversations
- identifying the value of feedback in building capability
- developing the strategies and skills necessary to talk to staff when their performance is not matching the original agreed performance management plan
- assisting and providing advice in development needs and longer career aspirations.

The MDBA encourages employee participation in the performance management process. The human resources team actively supports and assists employees and managers to resolve conflict and maintain workplace relationships by ensuring disputes do not escalate.

Our workforce

Workforce planning

During 2013–14 the human resources team worked with line managers to better understand operational workforce issues and to implement actions from the strategic plan. We continued to implement the revised organisational structure taking into account the transition from developing the Basin Plan to implementing it.

In October 2013 interim recruitment arrangements were introduced for the Australian Public Service (APS). The arrangements were aimed at maximising the use of existing APS staff while avoiding new engagements wherever possible. The primary approach for recruitment for the remainder of 2013–14 was to redeploy existing staff in the first instance, and consult the APS redeployment register, coordinated by the Australian Public Service Commission. The MDBA also sought approval for external advertising from the Commission on five occasions, with approval granted for four.

In order to maintain the longer term structural capability of the APS, the Australian Government has agreed to continue targeted recruitment programs for graduates and Indigenous employees. During 2013–14 we started the process for recruiting graduates for 2015. Our entry-level cadetship and graduate programs are critical for responding to our workforce needs.

The MDBA actively participates in the Australian Public Service Commission's service-wide recruitment efforts to attract Indigenous graduates, cadets and trainees but has not yet employed any Indigenous employees through these programs. During 2013–14, we agreed to participate in the Indigenous Australian Government Development Program, coordinated by the departments of employment and education with a view to placing at least one Indigenous trainee.

We reviewed our performance development and management arrangements during 2013–14 to trial a 360 degree feedback process for executive directors. This will see the feedback process being implemented for all senior executive service employees in 2014–15. After further evaluation the process may be extended to the executive level 2 cohort in the following year.

Australia Day achievement awards

The MDBA recognises high performance by individual employees and teams. The Australia Day awards are hosted by the Chief Executive annually and are a formal way to celebrate outstanding achievements and acknowledge employee performance. We recognise that building a culture that values its employees and recognises and rewards outstanding performance is a critical element in attracting and retaining the best people.

In 2014 awards were presented at an all staff meeting to celebrate Australia Day. A total of 28 nominations were received with 10 individual and 18 team nominations.

Individual recipients were Heleena Bamford, Anastasia Stramarcos, Andrew Keogh, Paula Becker and Megan Douglas. Team Awards recognised the ICT client services team, groundwater planning, members of the operations review team, environmental watering plan implementation and the people, planning and performance team.

Determining senior executive service employee remuneration

The MDBA had 11 senior executive service employees at 30 June 2014, which does not include the Chief Executive who is employed as a statutory office holder.

Rates of pay for senior executive service employees are set by the Chief Executive after consultation with individual employees and in accordance with the senior executive service remuneration policy. All senior executive service employees are covered by determinations made under Section 24(1) of the *Public Service Act 1999*.

Performance pay

Senior executive service and non-senior executive service employees are not eligible for performance pay. However, a non-senior executive service employee at the top or penultimate increment point in their salary range may be eligible for a one-off bonus as a result of achieving an 'outstanding performance' rating at the end of the performance cycle.

Individual non-senior executive service terms and conditions

In certain circumstances, and where appropriate, terms and employment conditions may be agreed to make an individual flexibility arrangement between the Chief Executive and a non-senior executive service employee.

Enterprise agreement

The Enterprise Agreement 2011–2014 has a nominal expiry date of 30 June 2014. Following the release of the Australian Government Public Sector Workplace Bargaining Policy on 28 March 2014, the MDBA formally commenced consultation and bargaining with employee representatives in May 2014 to develop a replacement Enterprise Agreement.

The bargaining team held two formal meetings during the year and meetings will continue in 2014–15 to finalise negotiations and achieve a replacement Enterprise Agreement.

Staffing profile

The following tables and figures summarise MDBA staffing statistics for 2013–14

Table 5.2 MDBA staff by employment agreement as at 30 June 2014

CATEGORY	2011–12	2012–13	2013–14
Enterprise agreement	306	287	276
Non-SES individual flexibility agreements	13	14	14
SES individuals s. 24 (1) determinations	14	12	11
Chief Executive (CE)	1	1	1
Total	**334**	**314**	**302**

Note: The Chair and the other four part-time members of the Authority are not included.

Table 5.3 Salary range for MDBA employees, and gender, as at 30 June 2014

CLASSIFICATION	SALARY RANGE ($)	FEMALE	MALE	TOTAL
APS 1	43,307–47,133	0	0	0
APS 2	49,868–54,271	2	0	2
APS 3	57,355–62,310	5	2	7
APS 4	64,055–69,587	21	5	26
APS 5	71,921–79,154	26	8	34
APS 6	81,721–89,943	44	31	75
EL 1	97,867–111,271	45	49	94
EL 2	113,845–165,102	13	39	52
SES	187,076–264,537	3	8	11
CE		1	0	1
Total		**160**	**142**	**302**

Note: The Chair and the other four part-time members of the Authority are not included.

Figure 5.2 MDBA classification profile by gender as at 30 June 2014

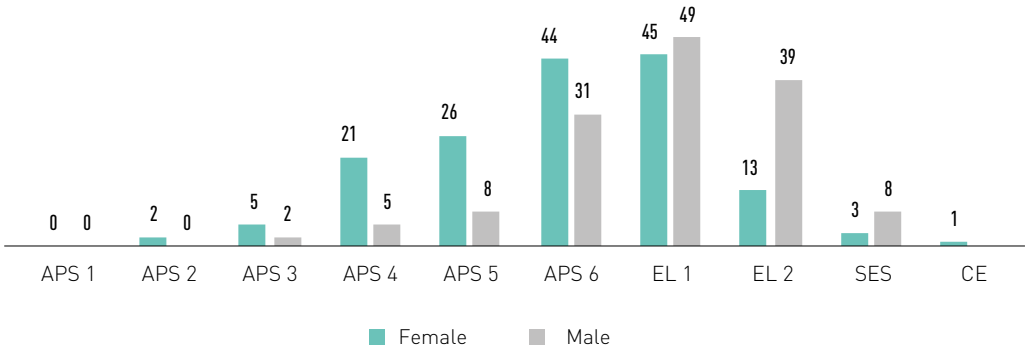


Table 5.4 Salary range for MDBA non-SES employees on individual flexibility arrangements as at 30 June 2014

CLASSIFICATION	SALARY RANGE ($)
EL 1	111,271
EL 2	139,775–165,102

Figure 5.3 Age profile of MDBA staff by employment type as at 30 June 2014

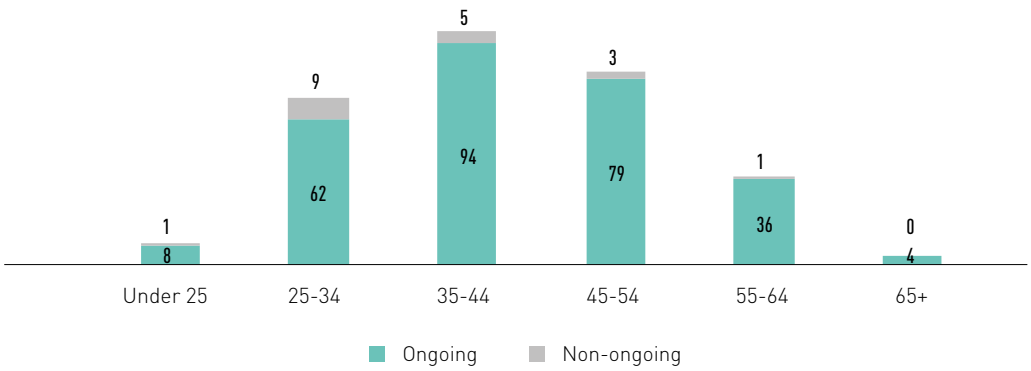


Table 5.5 Number of ongoing and non-ongoing staff from 2009–10 to 2013–14

YEAR	2009–10	2010–11	2011–12	2012–13	2013–14
Ongoing staff	253	260	299	289	283
Non-ongoing staff	61	54	35	25	19
Total	**314**	**314**	**334**	**314**	**302**

Figure 5.4 MDBA employment category and gender as at 30 June 2014

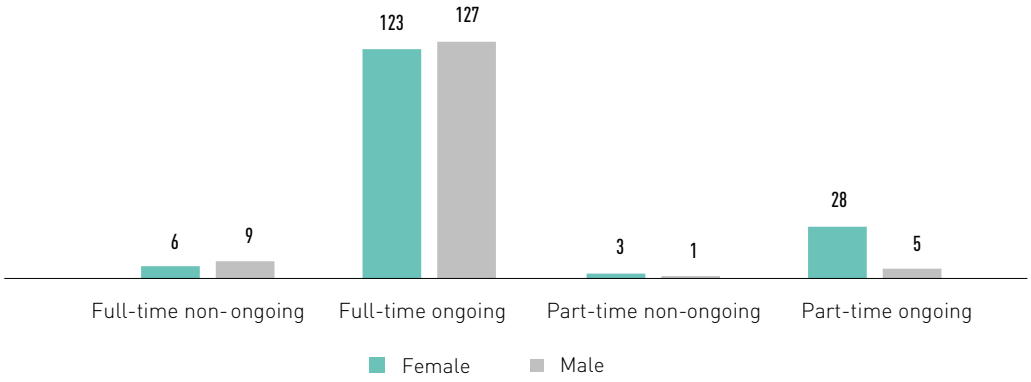


Table 5.6 MDBA staff by equal employment opportunity group as at 30 June 2014

	FEMALE	NON-ENGLISH SPEAKING BACKGROUND	INDIGENOUS	PEOPLE WITH A DISABILITY
Ongoing	151	9	0	4
Non-ongoing	9	2	0	1
Total	160	11	0	5
	(53%)	(3.6%)		(1.7%)
Volunteered personal data	100%	100%	0	100%

Recruitment

Since the Australian Public Service Commission interim recruitment arrangements were announced in October 2013, there has been minimal recruitment within the MDBA.

From 1 July 2013 to 31 October 2013 we advertised 14 ongoing roles and completed the selection process for nine of these. The other five positions were identified as critical to business so supporting briefs were forwarded to the Australian Public Service Commission for approval to continue the processes. As at 30 June 2014 the Commission has approved four of these positions.

Since October 2013 there have been 16 critical non-ongoing contract extensions reported to the Australian Public Service Commission.

We continued to improve the online induction program which provides new employees with a comprehensive introduction to the MDBA. We included a new work health and safety module and the Australian Public Service employment principles. We also updated the Australian Public Service values, and code of conduct.

Graduate program

The MDBA was voted 35th in the Australian Association of Graduate Employers' top 75 graduate employers for 2014. This positioned the MDBA in the top five Australian Public Service agencies, voted by graduates. This listing is based on feedback from graduates about the program and the support provided by the employer. This is a clear indication that the MDBA values and supports our graduates.

Our graduates for 2013–14 are (from left to right) Joel, Kristy, Meera, Laura and Melissa. They have diverse qualifications including hydrology, ecology, economics, international relations, journalism and environmental engineering (photo by Brayden Dykes, MDBA)

Seven graduates completed the Australian Public Service Commission's whole-of government graduate development program in December 2013, gaining a Diploma of Government.

Five graduates began the MDBA's structured 11-month graduate program in February 2014, which provides graduates with exposure to the broad range of work the MDBA does. One of these graduates came from our cadetship program.

The 2013 MDBA graduates continue to participate in the Australian Public Service Commission Graduate Development Program. Graduates are supported in their professional development through a mentoring program and provided with additional training, including in-house seminars and a field trip, arranged by the graduates. The training is designed to equip graduates with the skills and knowledge they will need to make a meaningful contribution to the MDBA and the Australian Public Service.

The field trip is an opportunity for graduates to further develop their understanding of the MDBA's responsibilities and activities. For the 2013 trip the graduates arranged visits to industry, agriculture, state government, local government and non-government organisations. The group presented their findings in the internal seminar series.

MDBA continued to engage with the Australian Public Service's Pathways Program and participated in the graduate employment careers fair.

Cadet and trainee programs

The MDBA Cadetship Program continued in the first half of 2013–14 with one cadet employed. The cadet finished her studies in 2013 and advanced through the MDBA cadet broadband and entered the 2014 graduate program.

The MDBA implemented this program to address our demographic and classification imbalance and as a part of our workforce planning.

Diversity

We continue to support equity and diversity within the workplace through our workplace diversity program, the Indigenous employment strategy and disability strategy and action plan.

We are committed to embracing the principles of equity and diversity in our daily business by providing an inclusive work environment that is fair, harmonious and safe and offers opportunities for all employees to achieve their full potential.

The MDBA is actively involved in all APS pathways entry level programs particularly as a means to engage Indigenous graduates, trainees or cadets. During 2013–14 we participated in the Indigenous Australian Government Development Program to attract Indigenous employees. The program offers a 15 month development opportunity for Indigenous trainees while they complete a Diploma of Government. If successful, the MDBA will engage trainees through this program in 2014–15.

We continue to work in partnership with Aboriginal Nations throughout the Murray–Darling Basin. During Reconciliation Action Week we launched the process to begin developing our first Reconciliation Action Plan. Since 2006 Reconciliation Australia has assisted Australian public and private sector organisations to develop meaningful and practical plans to help develop relationships, show respect and increase opportunities for Aboriginal and Torres Strait Islander people. In 2014–15 a working party will be established to build the content of the Reconciliation Action Plan, which is expected to be completed later that year.

We participated in developing the first environment portfolio multicultural plan for 2013–15. The plan provides a framework for the MDBA to reflect on the diverse interests and needs of our clients and stakeholders and be responsive to the needs of culturally and linguistically diverse communities.

We have identified and directly linked to the plan on our website as well as identified a senior executive service officer, Executive Director Corporate and Business Services, to champion our commitment and implementation of multicultural access and equity obligations.

Languages we speak

MDBA staff come from around the Basin, around Australia and around the world. We come from more than 30 countries and speak a variety of languages including: Arabic, Bengali, Burmese, French, German, Hakka, Hindi, Italian, Japanese, Malay, Mandarin, Norwegian, Persian, Portuguese, Romanian, Spanish, Urdu and a smattering of Pitjantjatjara.

Disability

The MDBA's disability strategy and action plan identifies strategies and support measures that assist people with disability to access our programs, policies and information.

We continue our commitment to provide people with disability the same access to information and opportunities to participate and contribute to our workplace and our programs as the rest of the community.

The MDBA complies with the Australian Government accessibility requirements for online access and publishing, and we are proactive in recruitment processes by using assistive technology, furniture and equipment to assist employees with their duties.

Work health and safety

Executive commitment, work health and safety structure and oversight

The MDBA comprises two 'persons conducting a business or undertaking' under the *Work Health and Safety Act 2011*, the six member Authority and the MDBA. Both the Authority and the MDBA have responsibilities under the Work Health and Safety Act for the safety of their workers and workplaces.

All MDBA's senior executive service employees are 'officers' under the Work Health and Safety Act and have been provided with information and training to assist them in carrying out their responsibilities. Executive commitment to the maintenance of safe and healthy MDBA workplaces is set out in the MDBA health and safety management arrangements. The commitment of all parties to workplace safety is also set out in the MDBA Enterprise Agreement 2011–14. Management of work health and safety arrangements is overseen by the MDBA Health and Safety Committee.

Effective communication and consultation

Communication and consultation with MDBA staff continued during 2013–14 through:

- quarterly meetings of the Health and Safety Committee
- notices on the daily updates on the intranet, email, posters and signage
- a campaign regarding office hygiene
- mandatory work health and safety induction and training
- consultations with health and safety representatives
- procedures to consult with 'persons conducting a business or undertaking' that share responsibilities for MDBA workers and worksites.

Initiatives ensuring workers' health and safety

Initiatives to ensure workers' health and safety have continued to be put in place during 2013–14. These included:

- regular workplace inspections, risk assessments and monitoring by the Health and Safety Committee
- offering influenza vaccinations to all employees
- providing an annual health and wellbeing allowance and an annual health and wellbeing week
- providing health and safety information and policies
- providing workstation assessments by qualified occupational therapists and providing ergonomically suitable equipment recommended as part of these assessments
- providing early intervention services to prevent or mitigate development of chronic injury or illness
- maintaining and supporting a network of harassment contact officers, first aid officers, health and safety representatives and emergency wardens
- maintaining and developing a range of policies to encourage and maintain health and safety of MDBA workers and workplaces
- providing training.

In 2013–14 new work health and safety policies relating to sit-stand working and rehabilitation were developed. Trained occupational therapists conducted office walk-arounds to help staff understand and better configure their workspaces. This complemented a broad program of trained MDBA staff providing initial advice and assistance. Training was provided in specific issues including preventing and responding to workplace bullying, as well as safe manual tasks.

Health and safety outcomes achieved as a result of initiatives

All issues identified through hazard and incident reports and regular workplace inspections were investigated and action taken. The Health and Safety Committee monitors incidents as well as the use of harassment contact officers and the Employee Assistance Program. In 2013–14 there was a decrease in the number of approaches to harassment contact officers and the number of employees and family members making use of the Employee Assistance Program.

The number of incidents reported increased by 40%. This is most likely because of an increase in educational awareness raising activities during the year.

Work health and safety statistics comparison

Table 5.7 compares work health and safety statistics from 2010–11 to 2013–14.

Table 5.7 Work health and safety statistics

	2010–11	2011–12	2012–13	2013–14
Internal reports on workplace hazards and incidents	24	59	50	70
Lost time caused by incident and injury not reported to Comcare (staff days)	10.5	2	8	26.25
Lost time caused by incident and injury reported to Comcare (staff days)	4	17	0	0
Incidents reported to Comcare	2	5	0	0
Lost time because of rehabilitation cases (staff days)	91.47	47.47	166	376
Lost weeks per 1,000 full time employees	42.9	31.81	110.67	254.91

Comcare investigations conducted or notices issued

Comcare did not conduct any investigations or issue any notices to the MDBA under the Work Health and Safety Act during 2013–14.

Comcare premiums

The agency premium rate for each employer provides an indication of the employer's effectiveness in preventing injury or illness and in helping its employees return to work quickly and safely after a work-related injury or illness. The overall premium rate for Australian Government agencies increased from 1.77% in 2012–13 to 2.12% in 2014–15. Our MDBA premium rate since 2010–11 has increased more rapidly than the average premium rate. Our efforts over the last few years on implementing early intervention strategies are achieving results with our premium increases now slowed to a level below the increases shown by other agencies, see Figure 5.5 and Table 5.8.

Figure 5.5 MDBA compensation premium rate compared to premium rates for all other agencies combined

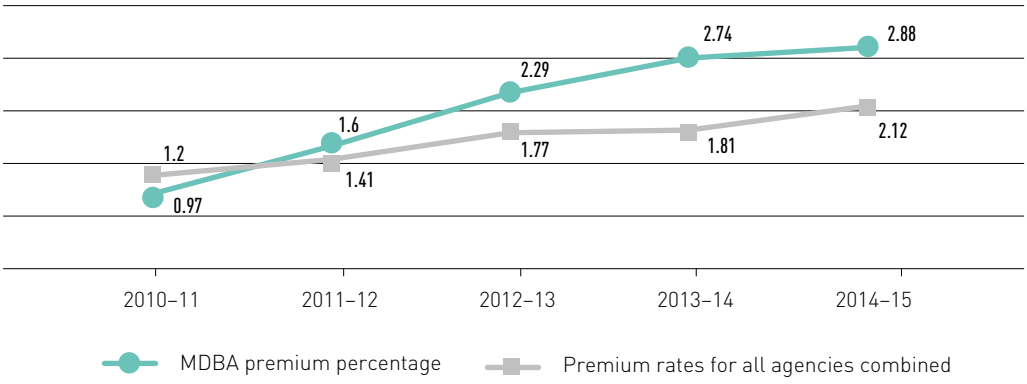


Table 5.8 A comparison between Comcare claims and premiums

	2011–12	2012–13	2013–14
Number of claims	5	4	4
Total cost of claims ($)	124,407	105,682	61,754
Average cost of claims ($)	24,882	26,421	10,292
Claim frequency per $1 million payroll	0.29	0.21	0.16
Comcare premium ($)	408,828	628,621	1,094,118
Premium percent of payroll	1.60	2.29	2.74
Premium rates for all agencies combined	1.41	1.77	1.81

Accident and dangerous occurrence statistics

Table 5.9 shows the number of accident and dangerous incidents notified from 2009–10 to 2013–14.

Table 5.9 MDBA incidents notified from 2009–10 to 2013–14

	2009–10	2010–11	2011–12	2012–13	2013–14
Deaths	0	0	0	0	0
Serious personal injury	2	2	5	0	0
Dangerous occurrences	0	0	0	0	0
Incapacity >30 working days/shifts	0	0	0	0	0

Our planning and finances

Highlights

- Managed the implementation of key foundational elements of the *Public Governance Performance and Accountability Act 2013* to commence from 1 July 2014. This included:
  - preparing key policy related material (such as accountable Authority Instructions, authorisations, frameworks, financial policies and guidance)
  - revising templates, including contract documentation, to reflect the MDBA's new standing as a corporate Commonwealth entity
  - establishing revised banking and investment facilities from 1 July 2014
  - delivering whole-of-project integrated organisational level planning, acknowledging the staggered implementation and subsequent phases of implementing the Public Governance Performance and Accountability Act during 2014–15 and beyond.
- Implementated a new on-line Certificate of Compliance system.
- Contributed to the development of new funding and governance arrangements in respect of the South Australian Riverland Floodplains Integrated Infrastructure Program, a $155 million program over seven years, reflecting the MDBA's first Administered Item.

Business planning

The MDBA undertakes complex cross-jurisdictional activities requiring high levels of collaboration and program planning. The efficient and effective delivery of these activities is supported by our integrated planning and reporting framework and annual business planning process. Our strategic framework incorporates a multi-year strategic plan, a corporate plan which outlines our planned activity for the next financial year and the three out years, and business plans at the sub-program level. Individual performance discussions complete the loop by linking individual activity and performance with broader program and organisational plans, see Figure 5.6. We are planning to develop a new strategic plan early in 2015 to ensure it is in place before 1 July 2015.

Figure 5.6 The relationship of key planning processes within the MDBA

Responsibility for setting MDBA's strategic direction, outlined formally through our strategic plan, rests with the MDBA Executive and consultation with key stakeholders. The MDBA Executive take account of obligations under the Water Act, including Schedule 1 (the MDBA Agreement) and decisions of the Ministerial Council.

Business planning is critical to the success of our programs, and in an effort to strengthen our standard in planning, program management and delivery, we are developing an enterprise-wide electronic planning and reporting system. During 2013–14 we analysed our business to gather and document requirements for an automated system to be designed and developed in mid- 2014–15.

Corporate plan

Section 213A of the Water Act requires the MDBA to prepare a corporate plan each year and provide it to the Minister.

The Plan covers a period of four years and sets out:

- the objectives of the MDBA
- the planned activities of the MDBA for the current financial year, and three out years, relating to its functions. This includes new capital works and operational and maintenance programs to be carried out under the Murray–Darling Basin Agreement
- the budget for those planned activities.

The MDBA's 2013–14 to 2016–17 corporate plan was adopted by the Authority on 4 July 2013, in respect of Australian Government-funded activities, and Ministerial Council on 5 August 2013, for jointly-funded activities.

The 2013–14 to 2016–17 corporate plan took into account a further reduction of $4.5 million in contributions to the jointly funded programs, NSW by $3.53 million and Queensland by $0.944 million.

The Public Governance Performance and Accountability Act has introduced new requirements for reporting and corporate planning that will need to be understood and incorporated into existing planning arrangements as we move into 2014–15.

Review of the Joint Activities Taskforce

We continue to provide support and advice to the partner governments to assist in reaching a new agreement on funding for the joint programs. We have provided modelling and budget scenarios for the Basin Officials Committee to assist Ministerial Council. We also provided input to two independent reviews being conducted on behalf of the Basin Officials Committee:

- a review of how the costs are shared between the partner governments (completed in April 2014)
- an efficiency review of River Murray operations which encompasses the state constructing authorities (Goulburn–Murray Water, NSW State Water Corporation, the NSW Office of Water and SA Water) and the river operations branch of the MDBA. This review began in May 2014 and will be completed by February 2015. The review will also develop a building blocks pricing model which will enable us to develop additional sets of accounts and reports for River Murray operations, to be included on the MDBA website from 2015–16. This will improve the reporting of cost information for stakeholders and bulk-water customers in the southern-connected Basin.

We are also further developing reports on the costs of running the natural resource management-based joint programs, to put this information on the MDBA website in early 2014–15. This, along with reporting on the costs of River Murray operations, will improve the availability of information on the costs of delivering the joint programs.

Performance reporting

Organisational performance reporting is an important part of Commonwealth and joint program governance within the MDBA. It provides a mechanism for the MDBA and partner governments to review program activity and provide feedback to support managing and improving program performance.

Monitoring activity within each program goes for the life of the program with formal performance reporting provided to the MDBA Executive and relevant parties on a monthly (financial) and quarterly (financial and non-financial) basis.

The MDBA places special importance on ensuring that reports are succinct and relevant to the decision-making priorities of partner governments.

Throughout 2013–14 performance reports were submitted to the MDBA Executive, the six member Authority and to the Basin Officials Committee. Additional reporting was requested by the Ministerial Council, and so the MDBA is working with partner governments to develop and refine a report that meets the specific needs of the Council.

The MDBA has committed to timely delivery of relevant reports and to distribute these within a six week period following the end of each quarter. To improve our reporting further we are developing an electronic reporting system as part of the project to implement an enterprise-wide planning and reporting system. This system will be developed and implemented during 2014–15.

Project management framework

During 2013–14 the project management framework, supported by the electronic project registration and reporting system, continued to support the initiation and management of MDBA projects, and 169 have been formally approved in the system since it was implemented in December 2010.

The usefulness and capabilities of the project management framework is promoted through the graduate and leadership development programs, as well as providing internal group project management training sessions and individual mentoring.

Financial management

During the year our focus remained on enhancing the standards of our reporting, monitoring and evaluation systems. We also maintained a robust internal control framework which, together with risk management, represents a key theme underpinning the new Public Governance Performance and Accountability Act resource management framework.

The need to be 'PGPA Act ready' from 1 July 2014 created parallel processes where we needed to maintain existing internal controls and reporting processes under the *Financial Management and Accountability Act 1997* to 30 June 2014. This included finalising the end-of-year financial reporting. We also needed to implement a markedly different resource management business model, which would see the MDBA operate as a corporate Commonwealth entity, defined under the Public Governance Performance and Accountability Act, from 1 July 2014.

A critical aspect of the project was to manage change for about 300 staff and ensure that the necessary tools and policies, procedures and new authorisations were in place by 1 July 2014, while ensuring that the responsibilities and accountabilities were not neglected in terms of meeting the requirements of the Financial Management and Accountability Act. Raising awareness and training staff will continue to be of prime importance in successfully making the necessary changes under the new legislation.

Financial performance

Revenues

During 2013–14, the MDBA received $47.8 million (compared to $50.7 million in 2012–13) in Australian Government appropriations.

This sum included $42.6 million for Basin Plan functions. Other revenues included $5.2 million in interest from funds held in the Murray–Darling Basin Special Account.

All MDBA revenue is credited to the MDBA Special Account, as outlined in section 210 of the Water Act. All expenses are debited from the account, as outlined in section 211 of the Act.

Expenditures

The MDBA's total expenditure for 2013–14 was $169.3 million (compared to $204.7 million in 2012–13). Table 5.10 outlines the main features of our financial performance.

Table 5.10 MDBA financial performance from 2010–11 to 2013–14

	MDBA	2010–11 ACTUALS $'000	2011–12 ACTUALS $'000	2012–13 ACTUALS $'000	2013–14 ACTUALS $'000	2013–14 VARIANCE $'000
Outcome 1 and total departmental	Revenue	175,687	172,170	155,802	137,434	18,368
	Expenses	218,588	199,512	204,729	169,274	35,455
	Surplus (deficit)	(42,901)	(27,342)	(49,126)	(31,876)	(17,250)

Financial position

The MDBA's net equity position was reduced in 2013–14 by $31.876 million, to $74.27 million. This reduction was caused by an operating deficit of $31.876 million, funded from equity. The operating deficit and reduction in cash resources reflects planned activity relating to Environmental Works and Measures Program projects (see page 76).

Assets and asset management

The MDBA's financial and non-financial assets at the end of 2013–14 were $97.191 million and $10.847 million respectively. Our financial assets consist of cash and cash equivalents, trade and other receivables. Our non-financial assets consist of ICT infrastructure and office fit-out and equipment.

Liabilities

Liabilities administered directly by the MDBA at the end of 2013–14 amounted to $33.768 million. Our liabilities mainly consist of amounts owing to suppliers and provisions for employee entitlements.

Total equity

The MDBA ended the year with a total equity of $74.27 million (see Table 5.11), consisting mainly of cash resources, minor fixed assets offset by trade creditors and employee liabilities.

Table 5.11 MDBA equity as at 30 June 2010–11 to 2013–14

MEASUREMENT	2010–11 $'000	2011–12 $'000	2012–13 $'000	2013–14 $'000
Assets	227,653	207,879	154,456	108,038
Liabilities	45,039	52,607	48,310	33,768
Total equity	182,614	155,272	106,146	74,270

Discretionary grant programs

The MDBA did not make any discretionary grants during 2013–14.

Managed assets: joint ventures

The MDBA is the appointed manager for the following classes of assets:

- River Murray Operations assets
- water entitlements under The Living Murray program.

The assets are controlled through two unincorporated joint ventures established to hold jurisdictional assets. The joint ventures were established through two agreements between partner governments:

- the Asset Agreement for River Murray Operations Assets
- Further Agreement on Addressing Water Overallocation and Achieving Environmental Objectives in the Murray–Darling Basin — Control and Management of The Living Murray Assets.

At 30 June 2014, the River Murray Operations joint venture held net assets of $2.589 billion. The Living Murray joint venture held net assets of $430.058 million comprising gross investment in water recovery measures of $692.97 million and an impairment loss of $262.912 million.

Procurement, grants and contract administration activities

Procurement

The MDBA conducted procurement activities in 2013–14 in accordance with the Commonwealth Procurement Rules.

We follow a devolved procurement framework that places responsibility for procurement with the appropriate financial delegate. To support these delegates the MDBA has in place a series of policies and guidance, including Chief Executive's Instructions, which have specific references for procurement. During the year the Procurement and Contracts Unit updated the procurement guidance and contract templates to improve the level of information available and enhance the useability of the templates. Ongoing training was also provided to staff on the procurement process.

The MDBA's Procurements and Contracts Unit provides advice and assistance to staff conducting procurements, which ensures compliance with relevant Commonwealth Procurement Rules, Chief Executive's Instructions, and other policies and processes.

As well as fulfilling the requirements of the Financial Management and Accountability Act, we redeveloped the financial frameworks, policies and guidance, and updated key templates required in readiness for the Public Governance, Performance and Accountability Act which would take effect on 1 July 2014.

The unit, which is part of the Finance and Administration Section, also advises MDBA staff on probity and maintaining standard tender and contract templates.

Performance against core purchasing policies

During 2013–14 we complied with all mandatory procurement procedures in the Commonwealth Procurement Rules.

Tender opportunities were advertised using the AusTender website at <www.tenders.gov.au>.

The annual procurement plan for 2013–14 was published on the AusTender site in June 2013 and was updated as required on an ongoing basis during the year.

Reporting

All contracts with a value of $10,000 or more were reported on AusTender during 2013–14. The MDBA also met the relevant requirements to report on the Senate Order on Government Agency Contracts for the calendar year 2013 and the financial year 2013–14.

All contracts with a value of $100,000 or more were listed on our website at <www.mdba.gov.au/about-mdba/tenders-grants>. This included the requirement to report to the Department of Finance on authorisations to spend public money under Regulation 10 of the *Financial Management and Accountability Act (Regulations) 1997*.

Consultancy services

The MDBA procures consultancy services in accordance with the Commonwealth Procurement Rules and the Chief Executive Instructions (based on the Department of Finance model chief executive instructions). Consultants are selected using the value-for-money principle.

Expenditure on consultancy contracts

During 2013–14 we entered into 87 new consultancy contracts, involving total actual expenditure of $2.894 million. In addition to new contracts, 24 ongoing consultancy contracts were active during the year, with a total actual expenditure of $1.659 million.

Details of contracts let by MDBA in 2013–14 to the value of $10,000 or more are available on the AusTender website at <www.tenders.gov.au>.

The list of consultancy contracts let in 2013–14 to the value of $100,000 or more is on our website <www.mdba.gov.au/about-mdba/tenders-grants>.

If you cannot access this list, please contact us and we will provide it to you in a suitable alternative format. You can contact us via our website <www.mdba.gov.au/contact-us> or in the following ways:

Address: Level 4, 51 Allara Street, Canberra ACT
Mail: GPO Box 1801, Canberra ACT 2601
email: procurement@mdba.gov.au
Phone: 61+2 6279 0100
Fax: 61+2 6248 8053

Exempt contracts

During 2013–14 no standing offers or contracts in excess of $10,000 (GST inclusive) were exempted by the Chief Executive from publication on AusTender under the *Freedom of Information Act 1982*.

Access by the Auditor-General

The MDBA's consultancy agreements comply with Australian National Audit Office (ANAO) requirements. The standard long-form consultancy agreement allows for ANAO access. The short-form agreement does not include a specific provision allowing ANAO access, but does provide for an MDBA nominee to conduct audits of those contracts. Other agreements may include a requirement for ANAO access depending on the nature of the services.

Accommodation

The MDBA has two offices in Canberra, located at 40 and 51 Allara Street, Canberra City. We also maintain small offices at 213 Greenhill Road, Eastwood, Adelaide, South Australia and at 123 Margaret Street, Toowoomba, Queensland. The combined premises are managed to meet the MDBA's existing and foreseeable accommodation needs.

Our information resources

Information communications technology and records management

During 2013–14 the information communication technology and records management area completed major upgrades and improvements to the corporate server infrastructure, internal and external internet sites, staff desktop computers and records management systems.

Key activities and achievements included:

Client services and infrastructure sections

- completing a major upgrade to the corporate file storage systems and servers, increasing performance and reliability and decreasing power usage
- implementing Phase 1 of the unified communications project, which will replace the existing PABX phone system with an integrated voice, video and messaging system
- trialling the new system across the corporate desktop and mobile platforms
- completing the rollout of new mobile communications and document sharing system using Apple iPads. Through this system MDBA staff have secure remote access through a content management system to edit and share documents on the corporate servers, and connect via encrypted email and remote software virtualisation services to the MDBA corporate software applications and systems
- replacing one third of the organisations desktop computers in line with the three-year MDBA desktop hardware rotation schedule. The new desktop systems have improved performance and implement energy star V5 compliance for reduced power consumption
- replacing a third of the desktop monitor screens with more efficient screens for improved contrast and colour reproduction to reduce eye strain for staff.

Web section

- deploying major content and functional improvements across the external and internal web sites. Updates have been made to the content management system for the external web site which includes implementing text to speech technology, RSS feed connections and other features to improve accessibility in line with the updated Australian Government web accessibility guidelines
- developing a new Basin Plan trading rules internet portal providing a central point of access to information on water trading rules across the Murray–Darling Basin. This portal comprises over 80 pages and incorporates interactive maps and a trading rules comparison tool which allows users to visualise trade in/out zones and compare trading products within the Basin
- updating over 70% of the content on the external web site with new pages and information
- deploying automated workflows and shared document libraries for internal business areas.

Records management section

- increasing the percentage of MDBA records stored in records management systems, including SharePoint (17,000 documents) and Trim/Records Manager 8 (60,000 documents)
- testing and deploying the new version of the corporate records management system, Records Manager 8
- supporting the implementation and development of over 50 intranet team information sites for MDBA sections.

Staff snapshots

Meet Michael

Michael grew up in Myanmar (Burma), in the city of Yangon (Rangoon). Michael's interest in working overseas led him to Australia, via China and Kenya.

Michael started work with the Murray–Darling Basin Commission in 1995 and has been working here ever since. He works in the Procurement and Contracts Unit providing professional advice and support to staff to assist in achieving the strategic outcomes of the MDBA.

Meet the toastmasters

In June 2014 MDBA staff commemorated becoming an officially chartered toastmasters club. We are part of Toastmasters International, which is a not-for-profit organisation that is dedicated to improving the communication and leadership skills of each member.

At our meetings each participant has an opportunity to speak either as a prepared speech, or an ad-hoc table topic where they are asked to speak for between 1 or 2 minutes on a topic that is given to them. We laugh a lot at meetings and have great fun while achieving our professional goals.

Our toastmasters group meets every Friday lunchtime (photo by Brayden Dykes).

Lake Bonney, Barmera, South Australia (photo by Jessie Boyd)

FINANCIALS

Statement by Chief Executive and Chief Finance Officer	p. 130
Independent Auditor's report	p. 131
Statement of comprehensive income	p. 133
Statement of financial position	p. 134
Statement of changes in equity	p. 135
Cash flow statement	p. 136
Schedule of commitments	p. 137
Schedule of contingencies	p. 139
Notes to and forming part of the financial statements	p. 144

Murray-Darling Basin Authority

STATEMENT BY THE CHIEF EXECUTIVE AND CHIEF FINANCE OFFICER

In our opinion, the attached financial statements for the year ended 30 June 2014 are based on properly maintained financial records and give a true and fair view of the matters required by the Finance Minister's Orders made under the *Financial Management and Accountability Act 1997*, as amended.

Signed

Rhondda Dickson
Chief Executive

15 October 2014

Signed

Harish Madan
Acting Chief Finance Officer

15 October 2014

Australian National Audit Office

INDEPENDENT AUDITOR'S REPORT

To the Parliamentary Secretary to the Minister for the Environment

I have audited the accompanying financial statements of Murray-Darling Basin Authority for the year ended 30 June 2014, which comprise: a Statement by the Chief Executive and Chief Finance Officer; Statement of Comprehensive Income; Statement of Financial Position; Statement of Changes in Equity; Cash Flow Statement; Schedule of Commitments; Schedule of Contingencies; Administered Schedule of Comprehensive Income; Administered Schedule of Assets and Liabilities; Administered Cash Flow Statement; Schedule of Administered Commitments and Notes comprising a Summary of Significant Accounting Policies and other explanatory information.

Chief Executive's Responsibility for the Financial Statements

The Chief Executive of the Murray-Darling Basin Authority is responsible for the preparation of financial statements that give a true and fair view in accordance with the Finance Minister's Orders made under the *Financial Management and Accountability Act 1997*, including the Australian Accounting Standards, and for such internal control as is necessary to enable the preparation of financial statements that give a true and fair view and are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

My responsibility is to express an opinion on the financial statements based on my audit. I have conducted my audit in accordance with the Australian National Audit Office Auditing Standards, which incorporate the Australian Auditing Standards. These auditing standards require that I comply with relevant ethical requirements relating to audit engagements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgement, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Murray-Darling Basin Authority's preparation of the financial statements that give a true and fair view in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Murray-Darling Basin Authority's internal control. An audit also includes evaluating the appropriateness of the accounting policies used and the reasonableness of accounting estimates made by the Chief Executive of the Murray-Darling Basin Authority, as well as evaluating the overall presentation of the financial statements.

GPO Box 707 CANBERRA ACT 2601
19 National Circuit BARTON ACT 2600
Phone (02) 6203 7300 Fax (02) 6203 7777

I believe that the audit evidence I have obtained is sufficient and appropriate to provide a basis for my audit opinion.

Independence

In conducting my audit, I have followed the independence requirements of the Australian National Audit Office, which incorporate the requirements of the Australian accounting profession.

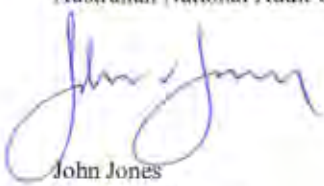
Opinion

In my opinion, the financial statements of the Murray-Darling Basin Authority:

(a) have been prepared in accordance with the Finance Minister's Orders made under the *Financial Management and Accountability Act 1997*, including the Australian Accounting Standards; and

(b) give a true and fair view of the matters required by the Finance Minister's Orders, including the Murray-Darling Basin Authority's financial position as at 30 June 2014 and its financial performance and cash flows for the year then ended.

Australian National Audit Office



John Jones
Executive Director

Delegate of the Auditor-General

Canberra
16 October 2014

Statement of Comprehensive Income
for the period ended 30 June 2014

	Notes	2014 $'000	2013 $'000
NET COST OF SERVICES			
EXPENSES			
Employee benefits	3A	**37,534**	37,013
Suppliers	3B	**130,066**	165,477
Depreciation and amortisation	3C	**1,622**	2,179
Finance costs	3D	**36**	41
Write-down and impairment of assets	3E	**3**	19
Losses from asset sales	3F	**13**	-
Total expenses		**169,274**	204,729
OWN-SOURCE INCOME			
Own-source revenue			
Contributions from jurisdictions	4A	**84,303**	100,187
Other revenue	4B	**5,305**	4,960
Total own-source revenue		**89,608**	105,147
Gains			
Sale of Assets	4C	**-**	1
Total gains		**-**	1
Total own-source income		**89,608**	105,148
Net cost of services		**(79,666)**	(99,581)
Revenue from Government	4D	**47,826**	50,654
Share of deficit of joint ventures accounted for using the equity method	3G	**(36)**	(112)
Deficit attributable to the Australian Government		**(31,876)**	(49,039)
OTHER COMPREHENSIVE INCOME			
Changes in asset revaluation surplus		**-**	(87)
Total comprehensive loss attributable to the Australian Government		**(31,876)**	(49,126)

The above statement should be read in conjunction with the accompanying notes.

Statement of Financial Position
as at 30 June 2014

	Notes	2014 $'000	2013 $'000
ASSETS			
Financial Assets			
Cash and cash equivalents	6A	**91,427**	5,320
Trade and other receivables	6B	**5,454**	136,585
Investments accounted for using the equity method	6C	**310**	346
Total financial assets		**97,191**	142,251
Non-Financial Assets			
Land and buildings	7A,C	**1,585**	2,185
Property, plant and equipment	7B,C	**752**	849
Intangibles	7D,E	**8,228**	8,875
Other non-financial assets	7F	**282**	296
Total non-financial assets		**10,847**	12,205
Total Assets		**108,038**	154,456
LIABILITIES			
Payables			
Suppliers	8A	**14,370**	33,133
Other payables	8B	**9,268**	5,321
Total payables		**23,638**	38,454
Provisions			
Employee provisions	9A	**9,461**	9,223
Other provisions	9B	**669**	633
Total provisions		**10,130**	9,856
Total liabilities		**33,768**	48,310
Net assets		**74,270**	106,146
EQUITY			
Contributed equity[1]		**(11,199)**	(11,199)
Retained surplus		**85,469**	117,345
Total equity		**74,270**	106,146

The above statement should be read in conjunction with the accompanying notes.

1. Please refer to the Statement of Changes in Equity for more information.

Statement of Changes in Equity
for the period ended 30 June 2014

	Retained earnings		Asset revaluation surplus		Contributed [1] equity/capital		Total equity	
	2014	2013	**2014**	2013	**2014**	2013	**2014**	2013
	$'000	$'000	**$'000**	$'000	**$'000**	$'000	**$'000**	$'000
Opening balance								
Balance carried forward from previous period	**117,345**	166,384	**-**	87	**(11,199)**	(11,199)	**106,146**	155,272
Adjusted opening balance	**117,345**	166,384	**-**	87	**(11,199)**	(11,199)	**106,146**	155,272
Comprehensive income								
Deficit for the period	**(31,876)**	(49,039)					**(31,876)**	(49,039)
Other comprehensive income	**-**	-	**-**	(87)	**-**	-	**-**	(87)
Total comprehensive income	**(31,876)**	(49,039)	**-**	(87)	**-**	-	**(31,876)**	(49,126)
Closing balance as at 30 June	**85,469**	117,345	**-**	-	**(11,199)**	(11,199)	**74,270**	106,146

The above statement should be read in conjunction with the accompanying notes.

1. The negative contributed equity is a historical legacy relating back to the transition of the Murray-Darling Basin Commission (MDBC) to the MDBA on 15 December 2008. As part of the transition arrangement, all cash held by the MDBC in the sum of $441.488m was paid back to the Official Public Account (OPA) before being appropriated to the Authority. Once appropriated to the MDBA these funds were recorded as revenue in the Authority's accounts.

   The remaining net assets of the MDBC in the sum of -$11.199m represented by assets of $7.981m and liabilities of $19.180m were transferred to the Authority during the 2008-09 financial year. This continues to be shown in the financial statements of the Authority as negative contributed equity of $11.199m.

Cash Flow Statement
for the period ended 30 June 2014

		2014 $'000	2013 $'000
OPERATING ACTIVITIES			
Cash received			
Appropriations		**47,826**	50,654
Drawdown from Special Account		**131,318**	61,417
Contributions from Jurisdictions		**88,519**	100,187
Net GST received		**14,085**	16,997
Other		**5,217**	3,176
Total cash received		**286,965**	232,431
Cash used			
Employees		**37,193**	36,686
Suppliers		**163,168**	185,441
Other		**202**	111
Total cash used		**200,564**	222,238
Net cash from operating activities	10	**86,402**	10,193
INVESTING ACTIVITIES			
Cash used			
Purchase of property, plant and equipment		**237**	750
Purchase of intangible assets		**58**	7,844
Total cash used		**295**	8,594
Net cash used by investing activities		**(295)**	(8,594)
Net increase in cash held		**86,107**	1,599
Cash and cash equivalents at the beginning of the reporting period		**5,320**	3,721
Cash and cash equivalents at the end of the reporting period	6A	**91,427**	5,320

The above statement should be read in conjunction with the accompanying notes.

Schedule of Commitments
as at 30 June 2014

	2014	2013
BY TYPE	**$'000**	$'000
Commitments receivable		
Net GST recoverable on commitments	**(1,263)**	(1,682)
Total commitments receivable	**(1,263)**	(1,682)
Commitments payable		
Capital commitments		
Property, plant and equipment	**-**	88
Total capital commitments	**-**	88
Other commitments		
Operating leases	**6,975**	9,110
Other	**6,923**	9,407
Total other commitments	**13,898**	18,517
Total commitments payable	**13,898**	18,605
Net commitments by type	**12,635**	16,923
BY MATURITY		
Commitments receivable		
Operating lease income		
Within 1 year	**(221)**	(211)
Between 1 to 5 years	**(413)**	(617)
Total operating lease income	**(634)**	(828)
Other commitments receivable		
Within 1 year	**(416)**	(794)
Between 1 to 5 years	**(213)**	(60)
Total other commitments receivable	**(629)**	(854)
Total commitments receivable	**(1,263)**	(1,682)
Commitments payable		
Capital commitments		
Within 1 year	**-**	88
Total capital commitments	**-**	88
Operating lease commitments		
Within 1 year	**2,428**	2,327
Between 1 to 5 years	**4,548**	6,783
Total operating lease commitments	**6,976**	9,110
Other commitments		
Within 1 year	**4,575**	8,742
Between 1 to 5 years	**2,347**	665
Total other commitments	**6,922**	9,407
Total commitments payable	**13,898**	18,605
Net commitments by maturity	**12,635**	16,923

Note: Commitments are GST inclusive where relevant.

The nature of capital commitments are purchase of data sets and software.

The nature of other commitments are payable to suppliers.

The MDBA in its capacity as a lessee held the following Leases and licences for office accommodation:

Canberra, ACT
Commencing on 1 January 2007 a 10 year and 3 months lease was initiated in respect of premises at 51 Allara Street. Lease payments are subject to fixed annual increases of 3.5% on review date (January each year).

Commencing on 1 May 2011 a 5 year and 11 months lease was initiated in respect of premises at 40 Allara Street. Lease payments are subject to fixed annual increases of 4% on review date (May each year).

Eastwood, SA
Commencing on 20 June 2011 a 12 month lease was initiated in respect of premises at 213 Greenhill Road. A new lease agreement has now been entered into to extend the arrangement until 20 December 2014.

Operating leases and licences held by the MDBA are effectively non-cancellable.

Schedule of Contingencies
as at 30 June 2014

	2014 $'000	2013 $'000
Contingent liabilities		
Claims for damages or costs	-	5,200
Total contingent liabilities	-	5,200
Net contingent (liabilities)	-	(5,200)

Details of each class of contingent liabilities and contingent assets listed above are disclosed in Note 11, along with information on significant remote contingencies and contingencies that cannot be quantified.

During 2013-14, the MDBA gave no financial guarantee.

The above schedule should be read in conjunction with the accompanying notes.

Administered Schedule of Comprehensive Income
for the period ended 30 June 2014

	Notes	2014 $'000	2013 $'000
NET COST OF SERVICES			
EXPENSES			
Grants	16A	**3,000**	-
Total expenses		**3,000**	-
Net cost of services		**3,000**	-
Total comprehensive loss		**3,000**	-

The above schedule should be read in conjunction with the accompanying notes.

Administered Schedule of Assets and Liabilities
as at 30 June 2014

There are no assets or liabilities administered by the Authority as at 30 June 2014.

Administered Reconciliation Schedule
as at 30 June 2014

	2014	2013
	$'000	$'000
Opening assets less liabilities as at 1 July	**-**	-
Net cost of services		
Expenses		
Payments to Non-CAC Act bodies	**(3,000)**	-
Transfers from the Australian Government:		
Appropriation transfers from Official Public Account		
Annual appropriations		
Payments to Non-CAC Act bodies	**3,000**	-
Closing assets less liabilities as at 30 June	**-**	-

The above schedule should be read in conjunction with the accompanying notes.

Administered Cash Flow Statement
for the period ended 30 June 2014

	Notes	2014 $'000	2013 $'000
OPERATING ACTIVITIES			
Cash used			
Grants		**3,000**	-
Total cash used		**3,000**	-
Net cash used by operating activities	17	**(3,000)**	-
Net decrease in Cash Held		**(3,000)**	-
Cash and cash equivalents at the beginning of the reporting period		**-**	-
Cash from Official Public Account			
Appropriations		**3,000**	-
Total cash from official public account		**3,000**	-
Cash and cash equivalents at the end of the reporting period		**-**	-

This schedule should be read in conjunction with the accompanying notes.

Schedule of Administered Commitments
as at 30 June 2014

	2014 $'000	2013 $'000
BY TYPE		
Commitments payable		
Other commitments		
Other	**9,365**	-
Total other commitments	**9,365**	-
Total commitments payable	**9,365**	-
Net commitments by type	**9,365**	-
BY MATURITY		
Commitments payable		
Other commitments		
Within 1 year	**7,000**	-
Between 1 to 5 years	**2,365**	-
Total other commitments	**9,365**	-
Total commitments payable	**9,365**	
Net commitments by maturity	**9,365**	-

Note: Commitments are GST inclusive where relevant.

The nature of commitments relate to grant amounts payable under an agreement in which the funding recipient is yet to provide the services required.

SA Riverland Floodplain Integrated Infrastructure Project (SARFIIP)

This project has an overall budget of $155 million over 7 years. SARFIIP aims to enhance the effectiveness of improved environmental flows to South Australia in particular at the Pike and Katarapko – Eckert's Creek (Katfish Reach) Floodplains.

The above schedule should be read in conjunction with the accompanying notes.

Table of Contents - Notes

Note 1: Summary of Significant Accounting Policies
Note 2: Events After the Reporting Period
Note 3: Expenses
Note 4: Own-Source Income
Note 5: Fair Value Measurements
Note 6: Financial Assets
Note 7: Non- Financial Assets
Note 8: Payables
Note 9: Provisions
Note10: Cash Flow Reconciliation
Note 11: Contingent Assets and Liabilities
Note 12: Senior Executive Remuneration
Note 13: Remuneration of Auditors
Note 14: Financial Instruments
Note 15: Financial Assets Reconciliation
Note 16: Administered - Expenses
Note 17: Administered - Cash Flow Reconciliation
Note 18: Appropriations
Note 19: Special Accounts
Note 20: Compensation and Debt Relief
Note 21: Reporting of Outcomes
Note 22: Net Cash Appropriation Arrangements
Note 23: Compliance with Statutory Conditions for Payments from the Consolidated Revenue Fund
Note 24: Economic Dependency

Note 1: Summary of Significant Accounting Policies

1.1 Objectives of the Murray-Darling Basin Authority

The Murray-Darling Basin Authority (the Authority) is an Australian Government controlled entity established by the *Water Act 2007, as amended*. It is a not-for-profit entity. The principal objective of the Authority is to manage the Basin's water resources in the national interest so that there may be an equitable and sustainable use of the Basin's resources.

The Authority is structured to meet the following outcomes:

Outcome 1*: Equitable and sustainable use of the Murray-Darling Basin by governments and the community including through the development and implementation of a Basin Plan, operation of the River Murray system, shared natural resource management programs, research, information and advice*.

The continued existence of the Authority in its present form and with its present programs is dependent on:

- funding contributions from Basin jurisdictions towards meeting the cost of Murray-Darling Basin Agreement functions; and
- Government policy and on continuing funding by Parliament for the Authority's administration and programs relating to the Basin Plan and Murray-Darling Basin Agreement functions.

Authority activities contributing toward these outcomes are classified as departmental. Departmental activities involve the use of assets, liabilities, income and expenses controlled or incurred by the Authority in its own right.

From 1 July 2013, the Authority became responsible for administered activities in respect of the South Australian Riverland Floodplains Integrated Infrastructure Project (SARFIIP). SARFIIP aims to enhance the effectiveness of improved environmental flows to South Australia in particular at the Pike and Katarapko - Eckert's Creek (Katfish Reach) Floodplains and is expected to extend over 7 years, with an estimated cost of $155 million. While these activities are not controlled by the Authority it exercises effective project oversight and funding on behalf of the Commonwealth.

1.2 Basis of Preparation of the Financial Statements

The financial statements are general-purpose financial statements and are required by section 49 of the *Financial Management and Accountability Act 1997, as amended* (FMA Act).

The financial statements have been prepared in accordance with:

- Finance Minister's Orders (FMOs) for reporting periods ending on or after 1 July 2011 and;
- Australian Accounting Standards and Interpretations issued by the Australian Accounting Standards Board (AASB) that apply for the reporting period.

The financial statements have been prepared on an accrual basis and in accordance with the historical cost convention except for the certain assets and liabilities at fair value. Except where stated, no allowance is made for the effect of changing prices on the results or the financial position.

The financial statements are presented in Australian dollars and values are rounded to the nearest thousand dollars unless otherwise specified.

Unless an alternative treatment is specifically required by an accounting standard or the FMOs, assets and liabilities are recognised in the balance sheet when and only when it is probable that future economic benefits will flow to the Authority, or a future sacrifice of economic benefits will be required and the amounts of the assets or liabilities can be reliably measured. However, assets and liabilities arising under executor contracts are not recognised unless required by an accounting standard. Liabilities and assets that are unrecognised are reported in the schedule of commitments or the schedule of contingencies.

Unless alternative treatment is specifically required by an accounting standard, income and expenses are recognised in the *Statement of Comprehensive Income*, when and only when the flow, consumption or loss of economic benefits has occurred and can be reliably measured.

1.3 Significant Accounting Judgements and Estimates

In the process of applying the accounting policies listed in this note, the Authority has not made any significant judgements that will have a significant impact on the amounts recorded in the financial statements, other than:

- employee provisions have been calculated based on the short-hand method as prescribed by the FMOs and have been discounted using the 10-year government bond rate as at 30 June 2014; and
- the fair value of non-financial assets. Leasehold improvements were last revalued by the Australian Valuation Office as at 30 June 2010.

Further, there are no accounting assumptions and estimates that have been identified that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next reporting period.

1.4 New Australian Accounting Standards

No accounting standard has been adopted earlier than the application date as stated in the standard.

Adoption of New Australian Accounting Standard Requirements

Revised standards that were issued prior to the sign-off date and are applicable to the current reporting period did not have a material effect, and are not expected to have a future material effect, on the Authority's financial statements.

No accounting standard has been adopted earlier than the application date as stated in the standard. For this financial year, AASB13 *Fair Value Measurement* was applied for the first time.

Future Australian Accounting Standard Requirements

The following new, revised or amending standards were issued by the Australian Accounting Standards Board prior to the sign-off date and are expected to have a financial impact on the Authority's financial statements for future reporting periods:

AASB 1055	*Budget Reporting*
AASB 1031	*Materiality*

All other new, revised or amending standards that were issued prior to the sign-off date and are applicable to future reporting periods are not expected to have a future material impact on the Authority's financial statements.

1.5 Revenue

Revenue from rendering of services is recognised by reference to the stage of completion of contracts at the reporting date. The revenue is recognised when:

- the amount of revenue, stage of completion and transaction costs incurred can be reliably measured; and
- the probable economic benefits associated with the transaction will flow to the Authority.

The stage of completion of contracts at the reporting date is determined by reference to the proportion that costs incurred to date bear to the estimated total costs of the transaction.

Receivables for goods and services, which have 30 day terms, are recognised at the nominal amounts due less any impairment allowance account. Collectability of debts is reviewed at end of the reporting period. Allowances are made when collectability of the debt is no longer probable.

Interest revenue is recognised using the effective interest method as set out in AASB 139 *Financial Instruments: Recognition and Measurement*.

Resources Received Free of Charge

Resources received free of charge are recognised as gains when, and only when, a fair value can be reliably determined and the services would have been purchased if they had not been donated. Use of those resources is recognised as an expense.

Resources received free of charge are recorded as either revenue or gains depending on their nature.

Revenue from Government

Amounts appropriated for departmental appropriations for the year (adjusted for any formal additions and reductions) are recognised as Revenue from Government when the Authority gains control of the appropriation, except for certain amounts that relate to activities that are reciprocal in nature, in which case revenue is recognised only when it has been earned. Appropriations receivable are recognised at their nominal amounts. Also refer to Note 2.

Contributions from Jurisdictions

The Authority receives contributions from jurisdictions based on an agreed Contributions Model (the Model). The Model, which has been carried forward from the Authority's predecessor agency, the Murray-Darling Basin Commission, is based on a number of different requirements including specific provisions under the Murray-Darling Basin Agreement continues to operate. The jurisdictions and the Australian Government are reviewing the model with a view to settling a longer-term arrangement. Also refer to Note 2.

1.6 Transactions with the Government as Owner

Equity Injections

Amounts appropriated which are designated as 'equity injections' for a year (less any formal reductions) and Departmental Capital Budgets (DCBs) are recognised directly in contributed equity. No equity or DCB injections were made during 2013-14 (2012-13 Nil).

Economic dependency

The continued existence of the Authority in its present form and with its present programs is dependent on Government policy and on continuing funding from by the Commonwealth and the State Governments of New South Wales, Victoria and South Australia for the Authority's administration and programs.

Other Distributions to Owners

The FMOs require that distributions to owners be debited to contributed equity unless it is in the nature of a dividend. In 2013-14, there were no distributions to owners (2012-13 Nil).

1.7 Employee Benefits

Liabilities for 'short-term employee benefits' (as defined in AASB 119 *Employee Benefits*) and termination benefits due within twelve months of the end of reporting period are measured at their nominal amounts.

The nominal amount is calculated with regard to the rates expected to be paid on settlement of the liability.

Other long-term employee benefits are measured as net total of the present value of the defined benefit obligation at the end of the reporting period minus the fair value at the end of the reporting period of plan assets (if any) out of which the obligations are to be settled directly.

Leave

The liability for employee benefits includes provision for annual leave and long service leave. No provision has been made for sick leave as all sick leave is non-vesting and the average sick leave taken in future years by employees of the Authority is estimated to be less than the annual entitlement for sick leave.

The leave liabilities are calculated on the basis of employees' remuneration at the estimated salary rates that will be applied at the time the leave is taken, including the Authority's employer superannuation contribution rates to the extent that the leave is likely to be taken during service rather than paid out on termination.

The liability for long service leave is recognised and measured at the present value of the estimated future cash flow to be made in respect of all employees at 30 June 2014. The estimate of the present value of the liability takes into account attrition rates and pay increases through promotion and inflation.

Superannuation

The Authority's staffs are members of the Commonwealth Superannuation Scheme (CSS), the Public Sector Superannuation Scheme (PSS), the PSS accumulation plan (PSSap) or other employee nominated superannuation funds.

The CSS and PSS are defined benefit schemes for the Australian Government. The PSSap is a defined contribution scheme.

The liability for defined benefits is recognised in the financial statements of the Australian Government and is settled by the Australian Government in due course. This liability is reported in the Department of Finance and Deregulation's administered schedules and notes.

The Authority makes employer contributions to the employees' superannuation scheme at rates determined by an actuary to be sufficient to meet the current cost to the Government of the superannuation entitlements of the Authority's employees. The Authority accounts for the contributions as if they were contributions to defined contribution plans.

The liability for superannuation recognised as at 30 June represents outstanding contributions for the final fortnight of the year.

The Authority also contributes to a number of complying funds to discharge the Authority's liability in regard to individual employees and the *Superannuation Guarantee (Administration) Act* 1992 as well as to facilitate the salary sacrifice options of employees.

1.8 Leases

Operating lease payments are expensed on a straight-line basis which is representative of the pattern of benefits derived from the leased assets.

1.9 Borrowing costs

All borrowing costs are expensed as incurred.

1.10 Cash

Cash is recognised at its nominal amount. Cash and cash equivalents include:

- cash on hand;
- demand deposits in bank accounts with an original maturity of 3 months or less that are readily convertible to known amounts of cash and subject to insignificant risk of changes in value;
- cash held with outsiders; and
- cash in special accounts.

1.11 Financial Assets

The Authority classifies its financial assets in the loan and receivables.

The classification depends on the nature and purpose of the financial assets and is determined at the time of initial recognition. Financial assets are recognised and derecognised upon trade date.

Effective Interest Method

The effective interest method is a method of calculating the amortised cost of a financial asset and of allocating interest income over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash receipts through the expected life of the financial asset, or, where appropriate, a shorter period.

Income is recognised on an effective interest rate basis except for financial assets that are recognised at fair value through profit or loss.

Loans and Receivables

Trade receivables, loans and other receivables that have fixed or determinable payments that are not quoted in an active market are classified as 'loans and receivables'. Loans and receivables are measured at amortised cost using the effective interest method less impairment. Interest is recognised by applying the effective interest rate.

Impairment of Financial Assets

Financial assets are assessed for impairment at the end of each reporting period.

The Authority has not recognised any impairment of financial assets during 2013-14.

1.12 Jointly Controlled Entities

The Authority is a joint venture partner in Murray-Darling Freshwater Research Centre (MDFRC), an unincorporated joint venture between La Trobe University, CSIRO and the Authority (refer see Note 6C).

The MDFRCs research focuses on the generation and communication of freshwater ecological knowledge in the Murray-Darling Basin, in particular providing advice and solutions to water managers to optimise their management decisions.

1.13 Financial Liabilities

Financial liabilities are classified as either financial liabilities 'at fair value through profit or loss' or other financial liabilities. Financial liabilities are recognised and derecognised upon 'trade date'.

Other Financial Liabilities

Other financial liabilities, including borrowings, are initially measured at fair value, net of transaction costs. These liabilities are subsequently measured at amortised cost using the effective interest method, with interest expense recognised on an effective yield basis.

The effective interest method is a method of calculating the amortised cost of a financial liability and of allocating interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments through the expected life of the financial liability, or, where appropriate, a shorter period.

Supplier and other payables are recognised at amortised cost. Liabilities are recognised to the extent that the goods or services have been received (and irrespective of having been invoiced).

1.14 Contingent Liabilities and Contingent Assets

Contingent liabilities and contingent assets are not recognised in the balance sheet but are reported in the relevant schedules and notes. They may arise from uncertainty as to the existence of a liability or asset or represent an asset or liability in respect of which the amount cannot be reliably measured. Contingent assets are disclosed when settlement is probable but not virtually certain and contingent liabilities are disclosed when settlement is greater than remote.

1.15 Acquisition of Assets

Assets are recorded at cost on acquisition except as stated below. The cost of acquisition includes the fair value of assets transferred in exchange and liabilities undertaken. Financial assets are initially measured at their fair value plus transaction costs where appropriate.

Assets acquired at no cost, or for nominal consideration, are initially recognised as assets and income at their fair value at the date of acquisition, unless acquired as a consequence of restructuring of administrative arrangements. In the latter case, assets are initially recognised as contributions by owners at the amounts at which they were recognised in the transferor's accounts immediately prior to the restructuring.

1.16 Property, Plant and Equipment

Asset Recognition Threshold

Purchases of property, plant and equipment are recognised initially at cost in the balance sheet, except for purchases costing less than $2,000, which are expensed in the year of acquisition (other than where they form part of a group of similar items which are significant in total).

The initial cost of an asset includes an estimate of the cost of dismantling and removing the item and restoring the site on which it is located. This is particularly relevant to 'make good' provisions in property leases taken up by the Authority where there exists an obligation to restore the property to its original condition.

These costs are included in the value of the Authority's leasehold improvements with a corresponding provision for the 'make good' recognised.

Revaluation

The Authority's leasehold improvements are recorded at fair value in accordance with AASB 116 *Property, Plant and Equipment* and AASB 13 *Fair Value Measurement*.

Fair value of leasehold improvement has been measured using the depreciated replacement cost approach, which is based on the amount that would be required to replace the service potential of an asset.

The Authority's property plant and equipment is measured using the cost approach or the assets depreciated cost less any accumulated depreciation or impairment.

The Authority's intangible assets comprise internally developed software and data-sets acquired for internal use or software licenses. There are no active markets for these assets, so in accordance with AASB 138 and FMOs the Authority measures these assets using the cost approach or the assets' amortised cost less any accumulated impairment losses.

Depreciation

Depreciable property, plant and equipment assets are written-off to their estimated residual values over their estimated useful lives to the Authority using, in all cases, the straight-line method of depreciation. Depreciation rates (useful lives), residual values and methods are reviewed at each reporting date and necessary adjustments are recognised in the current, or current and future reporting periods, as appropriate.

Depreciation and/ or Amortisation rates applying to each class of asset are based on the following useful lives:

	2013-14		2012-13	
	Years	**% pa**	Years	% pa
Computers and IT equipment	**3-4**	**25-33**	3-13	8-33
Office equipment	**2-5**	**20-50**	2-13	8-57
Art	**Indefinite**	**-**	-	-
Furniture, Fixtures and Fittings	**No longer used**	**-**	3-20	5-20
Leasehold improvements	**Length of lease but within range of 6-10**	**11-15**	6-10	11-15
Data sets	**3- indefinite**	**33-100**	3	33
Software applications	**3- indefinite**	**33-100**	3	33
Software licences	**Length of licence but within range of 1-3**	**33-100**	3	33

All assets were assessed for impairment at 30 June 2014. Where indications of impairment exist, the asset's recoverable amount is estimated and an impairment adjustment made if the asset's recoverable amount is less than its carrying amount.

The recoverable amount of an asset is the higher of its fair value less costs to sell and its value in use. Value in use is the present value of the future cash flows expected to be derived from the asset. Where the future economic benefit of an asset is not primarily dependent on the asset's ability to generate future cash flows, and the asset would be replaced if the Authority were deprived of the asset, its value in use is taken to be its depreciated replacement cost.

Derecognition

An item of property, plant and equipment is derecognised upon disposal or when no further future economic benefits are expected from its use or disposal.

1.17 Investment Properties

The Authority does not hold any investment properties.

It does, however, receive economic benefits in the form of cottage rents, which form part of the revenues of the Authority (refer Note 4B). The assets which deliver these rents are jointly controlled by the jurisdictions and the Commonwealth, but the revenues earned from these assets have been assigned to the Authority.

1.18 Intangibles

The Authority's intangibles comprise internally developed software; acquired data-sets for internal use and software licences. These assets are carried at cost less accumulated amortisation and accumulated impairment losses (also refer paragraph 1.19).

Software is amortised on a straight-line basis over its anticipated useful life. All software assets were assessed for indications of impairment as at 30 June 2014.

1.19 Taxation/Competitive Neutrality

The Authority is exempt from all forms of taxation except Fringe Benefits Tax (FBT) and the Goods and Services Tax (GST).

Revenues, expenses and assets are recognised net of GST except:

- where the amount of GST incurred is not recoverable from the Australian Taxation Office; and
- for receivables and payables.

1.20 Reporting of Administered Activities

Administered revenues, expenses, assets, liabilities and cash flows are disclosed in the schedule of administered items and related notes

Except where otherwise stated below, administered items are accounted for on the same basis and using the same policies as for departmental items, including the application of Australian Accounting Standards.

Administered Cash Transfers to and from the Official Public Account

Revenue collected by the Authority for use by the Government rather than the Authority is administered revenue. Collections are transferred to the Official Public Account (OPA) maintained by the Department of Finance and Deregulation. Conversely, cash is drawn from the OPA to make payments under Parliamentary appropriation on behalf of Government. These transfers to and from the OPA are adjustments to the administered cash held by the Authority on behalf of the Government and reported as such in the statement of cash flows in the schedule of administered items and in the administered reconciliation schedule.

Grants

The Authority administers one program on behalf of the Government, being the 'South Australian Riverland Floodplains Integrated Infrastructure Program (SARFIIP).

Grant liabilities are recognised to the extent that (i) the services required to be performed by the grantee have been performed or (ii) the grant eligibility criteria have been satisfied, but payments due have not been made. A commitment is recorded when the Government enters into an agreement to make these grants but services have not been performed or criteria satisfied.

SA Riverland Flood plain Integrated Infrastructure Project (SARFIIP)

The aims are to enhance the effectiveness of improved environmental flows to South Australia in particular at the Pike and Katarapko – Eckert's Creek (Katfish Reach) Floodplains.

The major elements of the project involve installation of infrastructure to enable broader and more natural floodplain inundation at the Pike Floodplain (near Renmark) and the Katarapko Floodplain (focusing on Katfish Reach near Berri). In addition salt interception schemes are also required to manage high levels of groundwater salinity found in this region.

The Authority will have key responsibilities in areas such as project management, governance and reporting.

Note 2: Events After the Reporting Period

Departmental

On the 1 July 2014, the Authority became a corporate Commonwealth entity for the purposes of the *Public Governance, Performance and Accountability Act, 2013 as amended* (PGPA Act). While the objectives and core business of the Authority is not altered by the PGPA Act there are key changes to the resource management framework within which it operates.

Notwithstanding, the 'Events After Reporting Date' changes associated with the implementation of the PGPA Act also impacted the financial statements for 2013-14. In particular funds were required to be fully drawn-down in respect of the Departmental Murray-Darling Basin Special Account (established by s209 Water Act 2007) as at 30 June 2014 in order to provide for a subsequent transfer of the funds to a new operating account - the Murray-Darling Basin Special Account, which operates outside of the Official Public Account (OPA), from 1 July 2014. Refer also to Notes 6A, 6B and 19.

Administered

There was no subsequent event that had the potential to significantly affect the ongoing structure and financial activities of the Authority.

Note 3: Expenses

	2014 $'000	2013 $'000
Note 3A: Employee Benefits		
Wages and salaries	**26,676**	26,462
Superannuation:		
Defined contribution plans	**2,595**	2,678
Defined benefit plans	**3,056**	2,580
Leave and other entitlements	**4,734**	4,684
Separation and redundancies	**473**	609
Total employee benefits	**37,534**	37,013
Note 3B: Suppliers		
Goods and services supplied or rendered		
Expenditure by State Constructing Authorities*	**97,705**	127,577
Water Licence Fee	**2,034**	3,313
Consultants#	**10,199**	14,788
Communication & IT services	**1,809**	1,209
Other employment expenses	**1,438**	1,458
Committee expenses	**1,452**	1,200
Grants	**9,727**	10,628
Travel	**1,635**	1,220
Other provision of goods & services	**1,240**	1,629
Total goods and services	**127,239**	163,022
Goods supplied in connection with		
Related entities	**8**	9
External parties	**478**	535
Total goods supplied	**486**	544
Services rendered in connection with		
Related entities	**2,569**	7,569
External parties	**124,183**	154,909
Total services rendered	**126,752**	162,478
Total goods and services supplied or rendered	**127,238**	163,022
Other suppliers		
Operating lease rentals in connection with		
External parties:		
Minimum lease payments	**1,819**	1,876
Workers compensation expenses	**1,008**	579
Total other supplier expenses	**2,827**	2,455
Total supplier expenses	**130,066**	165,477

* Includes:

- $0.999 million (2012-13 $2.305 million) in expenses incurred relating to unavoidable third party contractual commitments from interruptions attributable to flooding conditions; and
- An adjudicated amount of $13.786 million paid by the MDBA in respect of the Environmental Works and Measures project. Refer Note 11.

These expenses are not related to contracts in which the Authority is a direct party and are not recoverable through the Authority's existing insurance cover with Comcover.

Consultants and contractors.

Note 3: Expenses - continued

	2014 $'000	2013 $'000
Note 3C: Depreciation and Amortisation		
Depreciation:		
Property, plant and equipment	**320**	327
Buildings	**600**	571
Total depreciation	**920**	898
Amortisation:		
Intangibles	**702**	1,281
Total amortisation	**702**	1,281
Total depreciation and amortisation	**1,622**	2,179
Note 3D: Finance Costs		
Unwinding of discount	**36**	34
Other interest payments	**-**	7
Total finance costs	**36**	41
Note 3E: Write-Down and Impairment of Assets		
Impairment on financial instruments	**-**	19
Impairment of property, plant and equipment	**3**	-
Total write-down and impairment of assets	**3**	19
Note 3F: Losses from Asset Sales		
Property, plant and equipment:		
Proceeds from sale	**(1)**	-
Carrying value of assets sold	**14**	-
Total losses from asset sales	**13**	-
Note 3G: Share of deficit in the joint ventures accounted for using the equity method		
Share of deficit in the joint ventures accounted for using the equity method	**(36)**	(112)
Total other expenses	**(36)**	(112)

Note 4: Own-Source Income

Own-Source Revenue	2014 $'000	2013 $'000
Note 4A: Contributions from Jurisdictions		
Australian Government	**18,772**	19,320
New South Wales	**13,706**	16,230
Victoria	**27,451**	34,150
South Australia	**23,976**	29,145
Queensland	**100**	1,044
Australian Capital Territory	**298**	298
Total contributions from jurisdictions	**84,303**	100,187
Note 4B: Other Revenue		
Hydropower generation	**2,504**	2,023
Contributions by States - Salinity program	**941**	1,670
Land and cottage rents	**370**	369
Other	**1,421**	829
Resources received free of charge	**69**	69
Total other revenue	**5,305**	4,960
Gains		
Note 4C: Gains from Sale of Assets		
Property, plant and equipment:		
Proceeds from sale	**-**	1
Total gains from sale of assets	**-**	1
Revenue from Government		
Note 4D: Revenue from Government		
Appropriations:		
Departmental appropriations	**47,826**	50,654
Total revenue from government	**47,826**	50,654

Note 5: Fair Value Measurements

The following tables provide an analysis of assets and liabilities that are measured at fair value.
The different levels of the fair value hierarchy are defined below.

Level 1: Quoted prices (unadjusted) in active markets for identical assets or liabilities that the entity can access at measurement date.
Level 2: Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly.
Level 3: Unobservable inputs for the asset or liability.

Note 5A: Fair Value Measurements

Fair value measurements at the end of the reporting period by hierarchy for assets and liabilities in 2014

		Fair value measurements at the end of the reporting period using		
	Fair value	Level 1 inputs	Level 2 inputs	Level 3 inputs
	$'000	$'000	$'000	$'000
Non-financial assets				
Leasehold improvements	**1,585**	**-**	**-**	**1,585**
Total non-financial assets	**1,585**	**-**	**-**	**1,585**
Total fair value measurements of assets in the statement of financial position	**1,585**	**-**	**-**	**1,585**

Fair value measurements - highest and best use differs from current use for non-financial assets (NFAs)

The highest and best use of all non-financial assets are the same as their current use.

Note 5B: Level 1 and Level 2 Transfers for Recurring Fair Value Measurements

There have been no transfers between the levels of the hierarchy during the reporting period.

Note 5C: Valuation Technique and Inputs for Level 2 and Level 3 Fair Value Measurements

Level 2 and 3 fair value measurements - valuation technique and the inputs used for assets and liabilities in

	Category (Level 2 or Level 3)	Fair value $'000	Valuation technique(s)[1]	Inputs used	Range (weighted average)[2]
Non-financial assets					
Leasehold improvements	**3**	**1,585**	**Depreciated replacement cost**	**Cost per square metre**	**0%**

Level 3 fair value measurements - valuation process.

The MDBA asset register has been reviewed and it has been assessed that if the Authority were deprived of leasehold improvements they would be replaced. As such these assets should continue to be measured using the depreciated replacement cost, which is the remaining service potential of an asset that is determined to equate to the depreciated (i.e. written-down) replacement cost of the asset after any impairment is recognised.

There is no change in the valuation technique since the prior year.

Significant Level 3 inputs utilised by MDBA are derived and evaluated as follows:

The most recent independent valuation of MDBA leasehold improvements was undertaken at 30 June 2010 by the Australian Valuation Office (AVO). The fair value is determined using the observed price adjusted for depreciation over the office lease term.

Note 5: Fair Value Measurements - continued

Note 5C (Cont'd): Valuation Technique and Inputs for Level 2 and Level 3 Fair Value Measurements

Level 3 fair value measurements – sensitivity of inputs
The significant unobservable inputs used in the fair value measurement of MDBA leasehold improvements is the useful life of the assets that is determined by the office lease duration. Significant increases (decreases) in any of these inputs in isolation would result in a significantly higher (lower) fair value measurement.

Note 5D: Reconciliation for Recurring Level 3 Fair Value Measurements

There were no gains, losses, purchases, sales or transfers into or out of the level 3 hierarchy.

Note 6: Financial Assets

	2014 $'000	2013 $'000
Note 6A: Cash and cash equivalents		
Cash on hand or on deposit	**91,427**	5,320
Total cash and cash equivalents	**91,427**	5,320
Note 6B: Trade and other receivables		
Goods and services receivables in connection with		
Related entities	**93**	17
External entities	**207**	475
Total goods and services receivables	**300**	492
Appropriations receivable:		
Special Account cash held in the OPA	**-**	131,318
Total appropriations receivable	**-**	131,318
Other receivables:		
GST receivable from the Australian Taxation Office	**2,455**	2,370
Other	**2,708**	2,424
Total other receivables	**5,163**	4,794
Total trade and other receivables (gross)	**5,463**	136,604
Less impairment allowance		
Goods and services	**9**	19
Total impairment allowance	**9**	19
Total trade and other receivables (net)	**5,454**	136,585
Trade and other receivables (net) expected to be recovered		
No more than 12 months	**5,454**	136,585
Total trade and other receivables (net)	**5,454**	136,585
Trade and other receivables (gross) aged as follows		
Not overdue	**5,223**	134,130
Overdue by:		
0 to 30 days	**224**	2,410
31 to 60 days	**2**	-
61 to 90 days	**-**	-
More than 90 days	**14**	64
Total trade and other receivables (gross)	**5,463**	136,604
Impairment allowance aged as follows		
More than 90 days	**9**	19
Total impairment allowance	**9**	19

Credit terms for goods and services were within 30 days (2013: 30 days).
The Authority has not provided any loans (2013: no loans)

Note 6: Financial Assets - continued

Reconciliation of the Impairment Allowance

Movements in relation to 2014

	Goods and services	Other receivables	Total
	$'000	$'000	$'000
Opening balance	**19**	**-**	**19**
Amounts written off	**-**	**-**	**-**
Amounts recovered and reversed	**-**	**-**	**-**
Increase/(Decrease) recognised in net cost of services	**(10)**	**-**	**(10)**
Closing balance	**9**	**-**	**9**

Movements in relation to 2013

	Goods and services	Other receivables	Total
	$'000	$'000	$'000
Opening balance	-	-	-
Amounts written off	-	-	-
Amounts recovered and reversed	-	-	-
Increase/(Decrease) recognised in net cost of services	19	-	19
Closing balance	19	-	19

	2014	2013
	$'000	$'000
Note 6C: Investments accounted for using the equity method		
Investments in jointly controlled entities:		
Murray-Darling Freshwater Research Centre	**310**	346
Total equity accounted investments	**310**	346
Investments in equity accounted investments are expected to be recovered in:		
More than 12 months	**310**	346
Total equity accounted investments	**310**	346

Details of investments accounted for using the equity method

Name of entity	**Ownership**	
	2014	2013
	%	%
Jointly controlled entities:		
Murray-Darling Freshwater Research Centre	**33.33%**	33.33%

Note 6: Financial Assets - continued		
Summarised financial information of jointly controlled entities:		
	2014	2013
	$'000	$'000
Balance sheet:		
Current assets	**2,704**	2,765
Non-current assets	**740**	930
Current liabilities	**2,298**	2,416
Non-current liabilities	**218**	240
Statement of comprehensive income:		
Income	**5,966**	5,442
Expense	**6,076**	5,380
Net surplus/(deficit)	**(110)**	62
Share of jointly controlled entities' net deficit:		
Share of net deficit before tax	**(36)**	0
Income tax expense	**-**	-
Share of jointly controlled entities' net deficit after tax	**(36)**	21

Dividends received from jointly controlled entities: **NIL** (2013: NIL).

The Murray-Darling Freshwater Research Centre Joint Venture (MDFRC JV) is expected to be wound up in the later part of 2014. It is expected that the Authority will transfer its right, title and interest in the MDFRC JV for no consideration to MDFRC Pty Limited, which will hold this in trust for the new JV between CSIRO and La Trobe University, that will replace the existing MDFRC JV. It is expected that the Authority will have an ongoing but different role in the new Joint Venture supported by a Collaboration Agreement.

Note 7: Non-Financial Assets

	2014 $'000	2013 $'000
Note 7A: Land and Buildings		
Leasehold improvements:		
Fair value	**3,452**	3,452
Accumulated depreciation	**(1,867)**	(1,267)
Total leasehold improvements	**1,585**	2,185
Total land and buildings	**1,585**	2,185

No indicators of impairment were found for land and buildings.
The land and buildings class was last revalued at 30 June 2010.
No land and buildings are expected to be sold or disposed of within the next 12 months.

Note 7B: Property, Plant and Equipment		
Other property, plant and equipment:		
At cost	**2,047**	1,902
Accumulated depreciation and impairment	**(1,295)**	(1,053)
Total other property, plant and equipment	**752**	849
Total property, plant and equipment	**752**	849

Some indications of impairment were found for property, plant and equipment (see Note 7C).
Some property, plant or equipment are likely to be sold or disposed of within the next 12 months.

Note 7C: Reconciliation of the Opening and Closing Balances of Property, Plant and Equipment 2014

	Buildings $'000	Total land and buildings $'000	Other property, plant & equipment $'000	Total $'000
As at 1 July 2013				
Gross book value	**3,452**	**3,452**	**1,902**	**5,354**
Accumulated depreciation and impairment	**(1,267)**	**(1,267)**	**(1,053)**	**(2,320)**
Net book value 1 July 2013	**2,185**	**2,185**	**849**	**3,034**
Additions:				
By purchase	**-**	**-**	**240**	**240**
Impairments recognised	**-**	**-**	**(3)**	**(3)**
Depreciation expense	**(600)**	**(600)**	**(320)**	**(920)**
Disposals:				
Other	**-**	**-**	**(14)**	**(14)**
Net book value 30 June 2014	**1,585**	**1,585**	**752**	**2,337**
Net book value as of 30 June 2014 represented by:				
Gross book value	**3,452**	**3,452**	**2,047**	**5,499**
Accumulated depreciation and impairment	**(1,867)**	**(1,867)**	**(1,295)**	**(3,162)**
Net book value 30 June 2014	**1,585**	**1,585**	**752**	**2,337**

Note 7: Non-Financial Assets - continued

Note 7C (Cont'd): Reconciliation of the Opening and Closing Balances of Property, Plant and Equipment 2013

	Buildings $'000	Total land and buildings $'000	Other property, plant & equipment $'000	Total $'000
As at 1 July 2012				
Gross book value	3,240	3,240	1,379	4,619
Accumulated depreciation and impairment	(696)	(696)	(740)	(1,436)
Net book value 1 July 2012	2,544	2,544	639	3,183
Additions:				
By purchase	212	212	539	751
Depreciation expense	(571)	(571)	(313)	(884)
Disposals				
Other	-	-	(16)	(16)
Net book value 30 June 2013	2,185	2,185	849	3,034
Net book value as of 30 June 2013 represented by:				
Gross book value	3,452	3,452	1,902	5,354
Accumulated depreciation and impairment	(1,267)	(1,267)	(1,053)	(2,320)
Net book value 30 June 2013	2,185	2,185	849	3,034

	2014	2013
	$'000	$'000
Note 7D: Intangibles		
Assets in-use		
Computer software purchased	**1,334**	873
Accumulated amortisation and impairment.	**(982)**	(645)
Net book value computer software purchased	**352**	228
Computer software internally developed	**4,827**	4,873
Accumulated amortisation and impairment.	**(3,974)**	(3,609)
Net book value computer software internally developed in use	**853**	1,264
Total Intangibles in use	**1,205**	1,492
Work in Progress		
Software applications	**22**	463
Data Sets	**7,001**	6,920
Total Intangibles - Work in Progress	**7,023**	7,383
Total Intangibles	**8,228**	8,875

No indicators of impairment were found for intangible assets.
No intangibles are expected to be sold or disposed of within the next 12 months.

Note 7: Non-Financial Assets - continued

Note 7E: Reconciliation of the Opening and Closing Balances of Intangibles 2014

	Computer software internally developed $'000	Computer software purchased $'000	Total $'000
As at 1 July 2013			
Gross book value	**11,793**	**1,336**	**13,129**
Accumulated amortisation and impairment	**(3,609)**	**(645)**	**(4,254)**
Net book value 1 July 2013	**8,184**	**691**	**8,875**
Additions:			
By purchase or internally developed	**35**	**22**	**57**
Amortisation	**(365)**	**(337)**	**(702)**
Disposals:			
Other	**-**	**(2)**	**(2)**
Net book value 30 June 2014	**7,854**	**374**	**8,228**
Net book value as of 30 June 2014 represented by:			
Gross book value	**11,828**	**1,356**	**13,184**
Accumulated amortisation and impairment	**(3,974)**	**(982)**	**(4,956)**
Net book value 30 June 2014	**7,854**	**374**	**8,228**

Note 7E (Cont'd): Reconciliation of the Opening and Closing Balances of Intangibles 2013

	Computer software internally developed $'000	Computer software purchased $'000	Total $'000
As at 1 July 2012			
Gross book value	4,165	1,120	5,285
Accumulated amortisation and impairment	(2,579)	(394)	(2,972)
Net book value 1 July 2012	1,586	726	2,313
Additions:			
By purchase or internally developed	7,628	216	7,844
Amortisation	(1,030)	(251)	(1,282)
Net book value 30 June 2013	8,184	691	8,875
Net book value as of 30 June 2013 represented by:			
Gross book value	11,793	1,336	13,129
Accumulated amortisation and impairment	(3,609)	(645)	(4,254)
Net book value 30 June 2013	8,184	691	8,875

Note 7: Non-Financial Assets - continued

	2014	2013
	$'000	$'000
Note 7F: Other Non-Financial Assets		
Prepayments	**282**	296
Total other non-financial assets	**282**	296
Total other non-financial assets - are expected to be recovered in:		
No more than 12 months	**279**	281
More than 12 months	**3**	15
Total other non-financial assets	**282**	296

No indicators of impairment were found for other non-financial assets.

Note 8: Payables

	2014 $'000	2013 $'000
Note 8A: Suppliers		
Trade creditors and accruals	**14,108**	32,915
Operating lease rentals	**262**	218
Total suppliers	**14,370**	33,133
Suppliers expected to be settled		
No more than 12 months	**14,370**	33,133
Total suppliers	**14,370**	33,133
Suppliers in connection with		
Related parties	**90**	1,194
External parties	**14,280**	31,939
Total suppliers	**14,370**	33,133

Settlement was usually made within 30 days.

Note 8B: Other Payables		
Wages and salaries	**980**	907
Superannuation	**169**	139
Lease Incentive	**482**	657
Prepayments received/unearned income	**7,637**	3,618
Total other payables	**9,268**	5,321
Other payables expected to be settled		
No more than 12 months	**9,268**	5,321
Total other payables	**9,268**	5,321

Note 9: Provisions

	2014 $'000	2013 $'000
9A: Employee Provisions		
Leave	**9,461**	9,064
Separations and redundancies	**-**	159
Total employee provisions	**9,461**	9,223
Employee provisions are expected to be settled		
No more than 12 months	**3,208**	3,137
More than 12 months	**6,253**	6,086
Total employee provisions	**9,461**	9,223
Note 9B: Other Provisions		
Provision for restoration	**669**	633
Total other provisions	**669**	633
Other provisions are expected to be settled		
More than 12 months	**669**	633
Total other provisions	**669**	633

	Provision for restoration $'000	Total $'000
Carrying amount 1 July 2013	**633**	**633**
Unwinding of discount or change in discount rate	**36**	**36**
Closing balance 2014	**669**	**669**

	Provision for restoration $'000	Total $'000
Carrying amount 1 July 2012	598	598
Unwinding of discount or change in discount rate	35	35
Closing balance 2013	633	633

The Authority currently has 2 (2012-2013: 2) agreements for the leasing of premises which have provisions requiring the Authority to restore the premises to their original condition at the conclusion of the lease. The Authority has made a provision to reflect the present value of this obligation.

Note 10: Cash Flow Reconciliation

	2014 $'000	2013 $'000
Reconciliation of cash and cash equivalents as per statement of financial position to cash flow statement		
Cash and cash equivalents as per:		
Cash flow statement	**91,427**	5,320
Statement of financial position	**91,427**	5,320
Discrepancy	**-**	-
Reconciliation of net cost of services to net cash from operating activities:		
Net cost of services	**(79,666)**	(99,581)
Revenue from Government	**47,826**	50,654
Share of deficit in joint venture	**(36)**	(112)
Adjustments for non cash items		
Depreciation/amortisation	**1,622**	2,073
Net write down of non-financial assets	**3**	19
Loss/(gain) on disposal of assets	**13**	(1)
Movements in assets / liabilities		
Assets		
(Increase)/Decrease in net receivables	**131,131**	61,372
(Increase)/Decrease in share in joint ventures	**36**	113
(Increase)/Decrease in prepayments	**14**	(47)
Liabilities		
Increase/(Decrease) in employee provisions	**238**	196
Increase/(Decrease) in supplier payables	**(18,762)**	(4,360)
Increase/(Decrease) in other payable	**3,947**	(168)
Increase/(Decrease) in other provisions	**36**	35
Net cash from operating activities	**86,402**	10,193

Note 11: Contingent Assets and Liabilities

	Claims for damages or costs		Total	
	2014	2013	**2014**	2013
	$'000	$'000	**$'000**	$'000
Contingent liabilities				
Balance from previous period	**5,200**	3,600	**5,200**	3,600
New contingent liabilities recognised	**-**	-	**-**	-
Re-measurement	**8,586**	1,600	**8,586**	1,600
Liabilities realised	**(13,786)**	-	**(13,786)**	-
Obligations expired	**-**	-	**-**	-
Total contingent liabilities	**-**	5,200	**-**	5,200
Net contingent liabilities	**-**	(5,200)	**-**	(5,200)

Quantifiable Contingencies

The contingent liability at 30 June 2013 was settled following payment by the MDBA of a claim received from the State Water Corporation (NSW), requiring the MDBA to pay an adjudicated amount of $13.786 million (excluding GST) under the Building and Construction Industry Security of Payment Act 1999 (NSW) in respect of a specific Environmental Works and Measures Project (EWMP). The amount of the claim paid was significantly higher than the internal working group assessment at 30 June 2013, but was partially recouped ($5.431 million) from the NSW Department of Trade and Investment, leaving a net effect of $8.355 million which was funded from joint program funds held by MDBA.

Environmental water flows

The MDBA has received a letter claiming damages as a consequence of environmental water flows. The MDBA has denied any liability and will defend itself in terms of any potential costs arising from this matter. The information usually required by AASB137 Provisions, Contingent Liabilities and Contingent Assets has not been disclosed on the grounds that it may be expected to prejudice the outcome of the litigation.

Unquantifiable Contingencies

In addition, to the above matters there are a number of unquantifiable contingencies where it is not possible to estimate the amounts of any eventual payments.

These pertain to the former Murray-Darling Basin Commission (the Commission); under Section 239F of the *Water Act 2007, as amended* the liabilities of the Commission became liabilities of the Authority.

This included any liability, duty or obligation, whether contingent or prospective; but does not include a liability, duty or obligation imposed by:

- an Act; or
- regulations or other subordinate legislation made under an Act; or
- the Murray-Darling Basin Act 1992 of New South Wales; or
- the Murray-Darling Basin Act 1993 of Victoria; or
- the Murray-Darling Basin Act 1996 of Queensland; or
- the Murray-Darling Basin Act 1993 of South Australia; or
- the former MDB Agreement.

A claim has also been received by a State Constructing Authority, which the MDBA has indemnified. This claim is regarding the use of land. The SCA has denied any liabilitiy and will defend itself in terms of any potential costs arising from this matter.

Native Title Claims

In 2003, the former Commission became a party to a Native Title Determination Application. It is not possible to estimate any liabilities arising out of this matter.

Significant Remote Contingencies

The Authority had no significant remote contingencies.

Note 12: Senior Executive Remuneration

Note 12A: Senior Executive Remuneration Expenses for the Reporting Period

	2014 $	2013 $
Short-term employee benefits:		
Salary	**2,272,930**	3,028,321
Motor vehicle and other allowances	**55,516**	76,179
Total Short-term employee benefits	**2,328,446**	3,104,500
Post-employment benefits:		
Superannuation	**473,919**	603,423
Total post-employment benefits	**473,919**	603,423
Other long-term benefits:		
Annual leave accrued	**189,934**	236,662
Long service leave	**62,042**	78,018
Total other long-term benefits	**251,977**	314,680
Termination benefits:		
Voluntary redundancy payments	**64,328**	180,969
Total termination benefits	**64,328**	180,969
Total senior executive remuneration expenses	**3,118,670**	4,203,572

Notes:

1. Note 12A is prepared on an accrual basis (therefore the performance bonus expenses disclosed above may differ from the cash 'Bonus paid' in Note 12B).

2. Note 12A excludes acting arrangements and part-year service where total remuneration expensed as a senior executive was less than $195,000.

Note 12: Senior Executive Remuneration - continued

Note 12B: Average Annual Reportable Remuneration Paid to Substantive Senior Executives during the Reporting Period

Average annual reportable remuneration paid to substantive senior executives in 2014

Average annual reportable remuneration [1]	Substantive senior executives No.	Reportable Salary [2] $	Contributed superannuation [3] $	Reportable allowances [4] $	Bonus paid [5] $	Total reportable remuneration $
Total reportable remuneration (including part-time arrangements):						
Less than $195,000	**4**	**101,379**	**15,574**	**370**	**-**	**117,323**
$195,000 to $224,999	**4**	**185,102**	**33,379**	**86**	**-**	**218,566**
$225,000 to $254,999	**1**	**205,341**	**27,619**	**-**	**-**	**232,960**
$255,000 to $284,999	**2**	**227,679**	**43,261**	**244**	**-**	**271,184**
$285,000 to $314,999	**3**	**250,466**	**49,755**	**-**	**-**	**300,221**
$405,000 to $434,999	**1**	**354,902**	**76,229**	**-**	**-**	**431,131**
Total number of substantive senior executives	**15**					

Average annual reportable remuneration paid to substantive senior executives in 2013

Average annual reportable remuneration [1]	Substantive senior executives No.	Reportable Salary [2] $	Contributed superannuation [3] $	Reportable allowances [4] $	Bonus Paid [5] $	Total reportable remuneration $
Total remuneration (including part-time arrangements):						
Less than $195,000	1	147,667	41,545	1,949	-	191,161
$195,000 to $224,999	2	187,966	31,479	1,949	-	221,394
$225,000 to $254,999	3	201,165	33,672	1,949	-	236,786
$255,000 to $284,999	1	218,461	33,475	27,368	-	279,304
$285,000 to $314,999	5	239,985	56,056	7,033	-	303,074
$405,000 to $434,999	1	362,621	63,663	1,949	-	428,233
Total number of substantive senior executives	13					

1. This table reports substantive senior executives who received remuneration during the reporting period. Each row is an averaged figure based on headcount for individuals in the band.
2. 'Reportable salary' includes the following:
   a) gross payments (less any bonuses paid, which are separated out and disclosed in the 'bonus paid' column);
   b) reportable fringe benefits (at the net amount prior to 'grossing up' for tax benefits);
   c) reportable employer superannuation contributions; and
   d) exempt foreign employment income.
3. The 'contributed superannuation' amount is the average cost to the Authority for the provision of superannuation benefits to substantive senior executives in that reportable remuneration band during the
4. 'Reportable allowances' are the average actual allowances paid as per the 'total allowances' line on the individuals payment summaries.
5. 'Bonus paid' represents average actual bonuses paid during the reporting period in that reportable remuneration band. The 'bonus paid' within a particular band may vary between financial years due to variou factors such as individuals commencing with or leaving the Authority during the financial year.

Note 12: Senior Executive Remuneration - continued

Note 12C: Average Annual Reportable Remuneration Paid to Other Highly Paid Staff during the Reporting Period

Average annual reportable remuneration paid to other highly paid staff in 2014

Average annual reportable remuneration [1]	**Other highly paid staff No.**	**Reportable Salary [2] $**	**Contributed Superannuation [3] $**	**Reportable allowances [4] $**	**Bonus Paid [5] $**	**Total reportable remuneration $**
Total remuneration (including part-time arrangements):						
$195,000 to $224,999	**3**	**159,461**	**36,127**	**-**	**333**	**195,921**
Total number of other highly paid staff	**3**					

Average annual reportable remuneration paid to other highly paid staff in 2013

Average annual reportable remuneration [1]	Other highly paid staff No.	Reportable Salary [2] $	Contributed Superannuation [3] $	Reportable allowances [4] $	Bonus Paid [5] $	Total reportable remuneration $
Total remuneration (including part-time arrangements):						
$195,000 to $224,999	3	175,280	44,447	950	-	220,677
Total number of other highly paid staff	3					

1. This table reports staff:
   a) who were employed by the Authority during the reporting period;
   b) whose reportable remuneration was $195,000 or more for the financial period; and
   c) were not required to be disclosed in Table B or director disclosures.
Each row is an averaged figure based on headcount for individuals in the band.

2. 'Reportable salary' includes the following:
   a) gross payments (less any bonuses paid, which are separated out and disclosed in the 'bonus paid' column);
   b) reportable fringe benefits (at the net amount prior to 'grossing up' to account for tax purposes); and
   c) reportable employer superannuation contributions; and
   d) exempt foreign employment income.

3. The 'contributed superannuation' amount is the average cost to the Authority for the provision of superannuation benefits to other highly paid staff in that reportable remuneration band during the reporting

4. 'Reportable allowances' are the average actual allowances paid as per the 'total allowances' line on individuals' payment summaries.

5. 'Bonus paid' represents average actual bonuses paid during the reporting period in that reportable remuneration band. The 'bonus paid' within a particular band may vary between financial years due to various factors such as individuals commencing with or leaving the Authority during the financial year.

Note 13: Remuneration of Auditors

	2014 $'000	2013 $'000
Financial statement audit services were provided free of charge to the Authority by the Australian National Audit Office (ANAO).		
Fair value of the services provided:		
Financial statement audit services	**69**	69
Other services	**70**	53
Total	**139**	122
Other Services provided by ANAO and paid by the Authority.		
Australian National Audit Office - Living Murray Initiative Joint Venture Special Purpose Financial Statements	**30**	23
Australian National Audit Office - River Murray Operations Assets Joint Venture Special Purpose Financial Statements	**40**	30

No other services were provided by the auditors.

Note 14: Financial Instruments

	2014 $'000	2013 $'000
Note 14A: Categories of Financial Instruments		
Financial Assets		
Loans and receivables		
Cash and cash equivalents	**91,427**	5,320
Trade and other receivables	**300**	492
Accrued debtors	**2,708**	2,424
Total loans and receivables	**94,435**	8,236
Total financial assets	**94,435**	8,236
Financial Liabilities		
Financial liabilities measured at amortised cost		
Trade creditors and accruals	**14,108**	32,915
Revenue received in advance	**7,637**	3,618
Total financial liabilities measured at amortised cost	**21,745**	36,533
Total financial liabilities	**21,745**	36,533

Note 14B: Fair Value of Financial Instruments

All financial instruments are held at fair value.

Note 14C: Credit Risk

Credit risk represents the loss that would be recognised if counterparties failed to perform as contracted. The maximum credit risk on financial assets of which the Authority recognised is exposed is the carrying amount net of any impairment loss as indicated in the balance sheet. Due to the nature of the majority of the Authority's receivables are from Government Agencies, such risk is considered by the Authority to be low. MDBA holds no collateral to mitigate against credit risk.

Maximum exposure to credit risk (excluding any collateral or credit enhancements)

	2014 $'000	2013 $'000
Financial assets carried at amount not best representing maximum exposure to credit risk		
Cash and cash equivalents	**91,427**	5,320
Trade and other receivables	**300**	492
Accrued debtors	**2,708**	2,424
Total financial assets carried at amount not best representing maximum exposure to credit risk	**94,435**	8,236
Financial liabilities carried at amount not best representing maximum exposure to credit risk		
Trade creditors and accruals	**14,108**	32,915
Revenue received in advance	**7,637**	3,618
Total financial liabilities carried at amount not best representing maximum exposure to credit risk	**21,745**	36,533

In relation to the Authority's gross credit risk and the financial effect in respect of the amount that best represents the maximum exposure to credit risk. There is no collateral held by the Authority.

Credit quality of financial instruments not past due or individually determined as impaired

	Not past due nor impaired 2014 $'000	Not past due nor impaired 2013 $'000	Past due or impaired 2014 $'000	Past due or impaired 2013 $'000
Cash and cash equivalents	**91,427**	5,320	**-**	-
Trade and other receivables	**286**	428	**14**	64
Accrued debtors	**2,708**	2,424	**-**	-
Total	**94,421**	8,172	**14**	64

Note 14: Financial Instruments - continued

Ageing of financial assets that were past due but not impaired for 2014

	0 to 30 days $'000	31 to 60 days $'000	61- to 90 days $'000	90+ days $'000	Total $'000
Trade and other receivables	**224**	**2**	**-**	**5**	**5**
Total	**224**	**2**	**-**	**5**	**5**

Ageing of financial assets that were past due but not impaired for 2013

	0 to 30 days $'000	31 to 60 days $'000	61- to 90 days $'000	90+ days $'000	Total $'000
Trade and other receivables	-	-	-	45	45
Total	-	-	-	45	45

Note 14D: Liquidity Risk

The Authority is appropriated funding from the Australian Government and jurisdictions and the Authority manages its budgeted funds to ensure it has adequate funds to meet payments as they fall due. In addition, the Authority has policies in place to ensure timely payments are made when due and has no past experience of default. The Authority has no derivative financial liabilities in both the current and prior year.

Maturities for non-derivative financial liabilities 2014

	on demand $'000	Within 1 year $'000	1 to 2 years $'000	2 to 5 years $'000	>5 years $'000	Total $'000
Trade creditors and accruals	**-**	**14,108**	**-**	**-**	**-**	**14,108**
Revenue received in advance	**-**	**7,637**	**-**	**-**	**-**	**7,637**
Total	**-**	**21,745**	**-**	**-**	**-**	**21,745**

Maturities for non-derivative financial liabilities 2013

	on demand $'000	Within 1 year $'000	1 to 2 years $'000	2 to 5 years $'000	>5 years $'000	Total $'000
Trade creditors and accruals	-	32,915	-	-	-	32,915
Revenue received in advance	-	3,618	-	-	-	3,618
Total	-	36,533	-	-	-	36,533

The Authority had no derivative financial liabilities in either 2014 or 2013.

Note 14E: Market Risk

The Authority holds basic financial instruments that do not expose the Authority to certain market risks. The Authority is not exposed to 'Currency risk' or 'Other past due'

The Authority does not have any interest bearing liabilities at the period end.

Note 15: Financial Assets Reconciliation

	Notes	2014 $'000	2013 $'000
Total financial assets as per financial position		**97,191**	142,251
Less: non-financial instrument components:			
GST receivable from the Australian Taxation Office	6B	**2,455**	2,370
Investments Accounted for Using the Equity Method	6C	**310**	346
Appropriations receivable	6B	**-**	131,318
Provision for Doubtful Debts	6B	**(9)**	(19)
Total non-financial instrument components		**2,756**	134,015
Total financial assets as per financial instruments note		**94,435**	8,236

Note 16: Administered - Expenses		
	2014	2013
	$'000	$'000
Note 16A: Grants		
Public sector		
State and Territory Governments	**3,000**	-
Total grants	**3,000**	-

Note 17: Administered - Cash Flow Reconciliation

	2014 $'000	2013 $'000
Reconciliation of cash and cash equivalents as per administered schedule of assets and liabilities to administered cash flow statement		
Cash and cash equivalents as per:		
Schedule of administered cash flows	-	-
Schedule of administered assets and liabilities	-	-
Discrepancy	-	-
Reconciliation of net cost of services to net cash used by operating activities:		
Net cost of services	(3,000)	-
Net cash used by operating activities	(3,000)	-

Note 18: Appropriations

Table A: Annual Appropriations ('Recoverable GST exclusive')

Annual Appropriations for 2014

	Appropriation Act			*FMA Act*					
	Annual Appropriation $'000	Appropriations reduced [1] $'000	AFM[2] $'000	Section 30 $'000	Section 31 $'000	Section 32 $'000	Total appropriation $'000	Appropriation applied in 2014 (current and prior years) $'000	Variance $'000
DEPARTMENTAL									
Ordinary annual services	**47,913**	**-**	**-**	**-**	**357**	**-**	**48,270**	**48,240**	**30**
Total departmental	**47,913**	**-**	**-**	**-**	**357**	**-**	**48,270**	**48,240**	**30**
ADMINISTERED									
Ordinary annual services									
Administered items	**3,000**	**-**	**-**	**-**		**-**	**3,000**	**3,000**	**-**
Total administered	**3,000**	**-**	**-**	**-**		**-**	**3,000**	**3,000**	**-**

Notes:

1. Appropriations reduced under Appropriation Acts (Nos. 1,3 & 5) 2013-14: sections 10, 11, and 12 and under Appropriation Acts (Nos. 2, 4 & 6) 2013-14: sections 12,13, and 14. Departmental appropriations do not lapse at financial year-end. However, the responsible Minister may decide that part or all of a departmental appropriation is not required and request the Finance Minister to reduce that appropriation. The reduction in the appropriation is effected by the Finance Minister's determination and is disallowable by Parliament. During the 2013-14 Budget round, the Public Services Efficiencies Measure was announced, this was for $0.087m. The remaining balance of the variance is attributable to GST receivable.

As with departmental appropriations, the responsible Minister may decide that part or all of an administered appropriation is not required and request that the Finance Minister reduce that appropriation. For administered appropriations reduced under section 11 of Appropriation Acts (Nos. 1,3 & 5) 2013-14 and section 12 of Appropriation Acts (Nos. 2,4 & 6) 2013-14, the appropriation is taken to be reduced to the required amount specified in Note 37F of this note once the annual report is tabled in Parliament. All administered appropriations may be adjusted by a Finance Minister's determination, which is disallowable by Parliament. In 2014, there was no reduction in Administered appropriations.

2. As at 30 June 2014, the Appropriations Receivable balance was Nil.

Annual Appropriations for 2013

	Appropriation Act			*FMA Act*					
	Annual Appropriation $'000	Appropriations reduced [1] $'000	AFM[2] $'000	Section 30 $'000	Section 31 $'000	Section 32 $'000	Total appropriation $'000	Appropriation applied in 2013 (current and prior years) $'000	Variance $'000
DEPARTMENTAL									
Ordinary annual services	50,842		-	-	401	-	51,243	51,055	188
Total departmental	50,842	-	-	-	401	-	51,243	51,055	188

Notes:

1. Appropriations reduced under Appropriation Acts (Nos. 1,3 & 5) 2012-13: sections 10, 11, and 12 and under Appropriation Acts (Nos. 2, 4 & 6) 2012-13: sections 12,13, and 14. Departmental appropriations do not lapse at financial year-end. However, the responsible Minister may decide that part or all of a departmental appropriation is not required and request the Finance Minister to reduce that appropriation. The reduction in the appropriation is effected by the Finance Minister's determination and is disallowable by Parliament. On 5 August 2013, the Finance Minister issued a determination to reduce departmental appropriations following a request by the Minister for Department of Sustainability, Environment, Water, Population and Communities. The amount of the reduction under subsection 10(2) of Appropriation Act (No. 1) 2012-2013 was $0.188m.

2. As at 30 June 2013, there was an amount of $131 million in Appropriations Receivable, representing amounts yet to be drawn, but payable, from the MDB Special Account.

Table B: Departmental and Administered Capital Budgets ('Recoverable GST exclusive')

The MDBA does not have Departmental or Administered Capital Budgets.

Note 18: Appropriations - continued

Table C: Reduction in Administered Items ('Recoverable GST exclusive')

Reduction in Administered Items for 2014

	Amount required[3] - by Appropriation Act		Total amount required[2]	Total amount appropriated[3]	Total reduction[4]
Ordinary Annual Services	**Act (No.1)**	**Act (No.3)**			
Outcome 1	**3,000,000.00**	**-**	**3,000,000.00**	**3,000,000.00**	**-**

Notes:

1. Numbers in this section of the table must be disclosed to the cent.
2. Amount required as per *Appropriation Act* (Act 1 s. 11; Act 2 s. 12).
3. Total amount appropriated in 2013-14.
4. Total reduction effective in 2014-2015.

Note 19: Special Accounts

Special Accounts (Recoverable GST exclusive)

Departmental - Murray-Darling Basin Special Account		
	2014	2013
	$'000	$'000
Balance brought forward from previous period	**136,638**	196,456
Increases		
Appropriation credited to special account	**47,826**	50,654
Contribution from Jurisdictions	**88,519**	100,187
Other receipts	**5,217**	2,965
Total increases	**141,562**	153,806
Available for payments	**278,200**	350,262
Decreases		
Departmental		
Payments made to employees	**37,193**	36,686
Payments made to suppliers	**149,580**	176,938
Total departmental	**186,773**	213,624
Total decreases	**186,773**	213,624
Total balance carried to the next period	**91,427**	136,638

Notes:

Departmental - Murray-Darling Special Account

1 Appropriation: *Financial Management and Accountability Act 1997* , (FMA Act) Section 21.

2 Establishing Instrument: *Water Act 2007*, Section 209

3 Purpose:

i) in payment or discharge of the costs, expenses and other obligations incurred by the Authority in the performance of the Authority's functions;

ii) in payment of any remuneration and allowances payable to any person under the *Water Act 2007* ; and

iii) meeting the expenses of administering the Account.

4 $91.427 million disclosed as 'Total balance carried to the next period' represents 'Cash At Bank' at 30 June 2014.

On 1 July 2014, the Authority ceased to be an Agency under the FMA Act and became a corporate Commonwealth entity for the purposes of the *Public Governance, Performance and Accountability Act, 2013 as amended* (PGPA Act).

One of the outcomes associated with this change was that the MDBA elected to fully draw-down the $91.427m and transfer these monies to 'Cash At Bank'. This was to facilitate the subsequent transfer of these funds on 1 July 2014 to a new operating account that functions outside of the Official Public Account.

As of 1 July 2014 the Murray-Darling Basin Special Account for the purposes of the FMA Act ceased to exist.

Refer also to Notes 2, 6A, and 6B.

Note 20: Compensation and Debt Relief

Compensation and Debt Relief - Departmental

No 'Act of Grace payments' were expended during the reporting period (2013: NIL).

No waivers of amounts owing to the Australian Government were made pursuant to subsection 34(1) of the *Financial Management and Accountability Act 1997* (2013: NIL).

No waivers of amounts owing to the Australian Government were made (2013: NIL).

No payments were provided under the Compensation for Detriment caused by Defective Administration (CDDA) Scheme during the reporting period (2013: NIL).

No ex-gratia payments were provided for during the reporting period (2013: NIL).

No payments were provided in special circumstances relating to APS employment pursuant to section 73 of the *Public Service Act 1999* during the reporting period (2013: NIL).

Compensation and Debt Relief - Administered

No 'Act of Grace payments' were expended during the reporting period (2013: NIL).

No waivers of amounts owing to the Australian Government were made pursuant to subsection 34(1) of the *Financial Management and Accountability Act 1997* (2013: NIL).

No waivers of amounts owing to the Australian Government were made (2013: NIL).

No payments were provided under the Compensation for Detriment caused by Defective Administration (CDDA) Scheme during the reporting period (2013: NIL).

No ex-gratia payments were provided for during the reporting period (2013: NIL).

No payments were provided in special circumstances relating to APS employment pursuant to section 73 of the *Public Service Act 1999* during the reporting period (2013: NIL).

Note 21: Reporting of Outcomes

Note 21A: Net Cost of Outcome Delivery

	Outcome 1		Total	
	2014	2013	**2014**	2013
	$'000	$'000	**$'000**	$'000
Departmental				
Expenses	**169,274**	204,729	**169,274**	204,729
Own-source income	**89,608**	105,148	**89,608**	105,148
Net cost of outcome delivery	**79,666**	99,581	**79,666**	99,581
Administered				
Expenses	**3,000**	-	**3,000**	-
Net cost of outcome delivery	**3,000**	-	**3,000**	-

Note 21B: Major Classes of Departmental Expense, Income, Assets and Liabilities by Outcome

	Outcome 1		Total	
	2014	2013	**2014**	2013
	$'000	$'000	**$'000**	$'000
Expenses				
Employee benefits	**37,534**	37,013	**37,534**	37,013
Suppliers	**130,066**	165,477	**130,066**	165,477
Depreciation and amortisation	**1,622**	2,179	**1,622**	2,179
Finance costs	**36**	41	**36**	41
Write-down and impairment of assets	**3**	19	**3**	19
Losses from asset sales	**13**	-	**13**	-
Total expenses	**169,274**	204,729	**169,274**	204,729
Own-source income				
Income from Government	**47,826**	50,654	**47,826**	50,654
Own-source revenue	**89,608**	105,147	**89,608**	105,147
Gains	**-**	1	**-**	1
Share of surplus/(deficit) of joint ventures accounted for using the equity method	**(36)**	(112)	**(36)**	(112)
Total own-source income	**137,398**	155,690	**137,398**	155,690
Assets				
Financial Assets	**97,191**	142,251	**97,191**	142,251
Non-Financial Assets	**10,847**	12,205	**10,847**	12,205
Total assets	**108,038**	154,456	**108,038**	154,456
Liabilities				
Payables	**23,638**	38,454	**23,638**	38,454
Provisions	**10,130**	9,856	**10,130**	9,856
Total liabilities	**33,768**	48,310	**33,768**	48,310

Outcome 1 is described in Note 1.1. Net costs shown included intra-government costs that were eliminated in calculating the actual Budget Outcome.

Note 21C: Major Classes of Administered Expenses, Income, Assets and Liabilities by Outcome

	Outcome 1		Total	
	2014	2013	**2014**	2013
	$'000	$'000	**$'000**	$'000
Expenses				
Grants	**3,000**	-	**3,000**	-
Total	**3,000**	-	**3,000**	-

Note 22: Net Cash Appropriation Arrangements

	2014	2013
	$'000	$'000
Total comprehensive loss less depreciation/amortisation expenses previously funded through revenue appropriations[1]	**(31,876)**	(49,126)
Plus: depreciation/amortisation expenses previously funded through revenue appropriation	**-**	-
Total comprehensive income - as per the Statement of Comprehensive Income	**(31,876)**	(49,126)

Notes:

1. MDBA does not currently have a departmental capital budget and has no depreciation expenses previously funded through revenue appropriation.

Note 23: Compliance with Statutory Conditions for Payments from the Consolidated Revenue Fund

The Australian Government continues to have regard to developments in case law, including the High Court's most recent decision on Commonwealth expenditure in *Williams v Commonwealth [2014] HCA 23*, as they contribute to the larger body of law relevant to the development of Commonwealth programs. In accordance with its general practice, the Government will continue to monitor and assess risk and decide on any appropriate actions to respond to risks of expenditure not being consistent with constitutional or other legal requirements.

Section 83 of the Constitution provides that no amount may be paid out of the Consolidated Revenue Fund except under an appropriation made by law. The Department of Finance and Deregulation provided information to all agencies in 2011 regarding the need for risk assessments in relation to compliance with statutory conditions on payments from special appropriations, including special accounts.

The Authority has previously performed a detailed risk assessment of the potential for breaches of Section 83 and has determined that there is a low risk of non-compliance. The Authority continues to monitor the risks associated with potential breaches of Section 83.

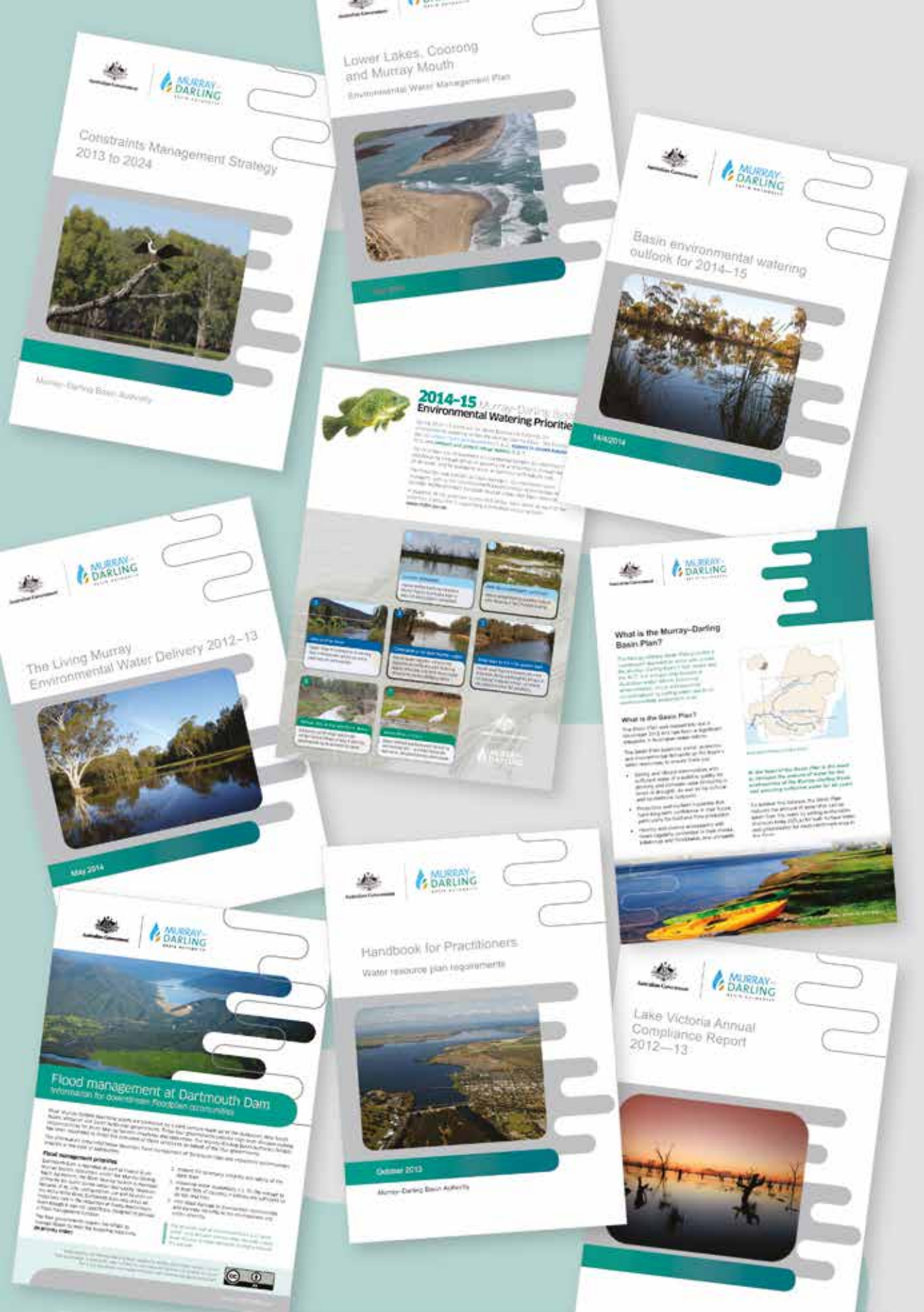
The Authority is not aware of any specific breaches of Section 83.

Note 24: Economic Dependency

The continued operation of the Authority in its present form and with its present functions is dependent on government policy and on continuing funding by the Commonwealth and State Governments of New South Wales, Victoria, Queensland, South Australia and the Australian Capital Territory.

Contributions from Jurisdictions for the upcoming financial year are reducing from 2013-14 levels to $64.1 million, which are to be managed via changes in the delivery of services. In the event of further reductions, particularly as they relate to Contributions from Jurisdictions, a revision in the delivery of services and/or alternative funding arrangements would be required.

These financial statements have been prepared in accordance with the FMOs (refer Note 1.4) and contemplates the continuation of the Authority as a 'going concern'.


Constraints Management Strategy 2013 to 2024
Murray–Darling Basin Authority
Lower Lakes, Coorong and Murray Mouth
Environmental Water Management Plan
Basin environmental watering outlook for 2014–15
14/4/2014
2014–15
Environmental Watering Priorities
The Living Murray Environmental Water Delivery 2012–13
May 2014
What is the Murray–Darling Basin Plan?
What is the Basin Plan?
Handbook for Practitioners
Water resource plan requirements
October 2013
Murray–Darling Basin Authority
Flood management at Dartmouth Dam
Information for downstream floodplain communities
Lake Victoria Annual Compliance Report 2012—13

APPENDIXES

A Governance bodies meetings and outcomes p. 188

B Agency resource statement and resources for outcome 1 p. 195

C Advertising and market research p. 198

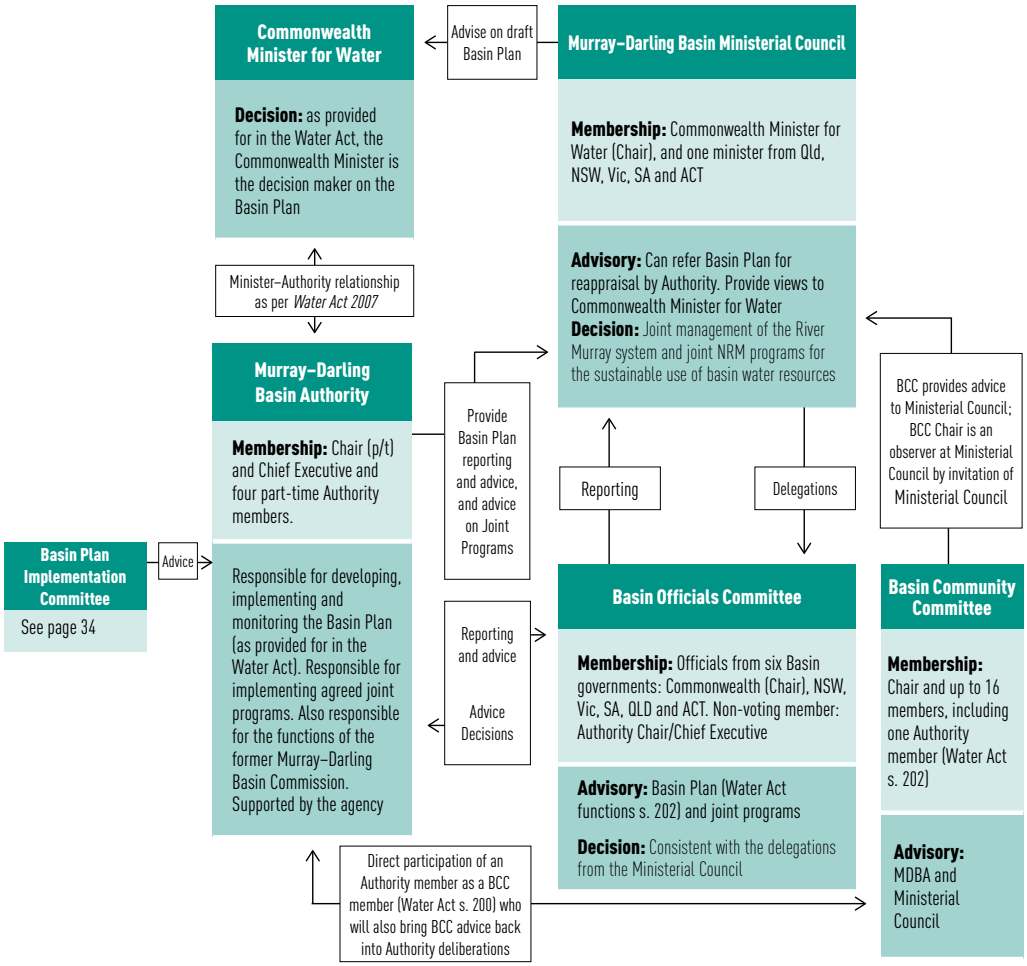
D Ecologically sustainable development and environmental performance p. 199

E MDBA communication products p. 202

Appendix A

Governance bodies meetings and outcomes

Figure A.1 MDBA governance structure and relationships



The Authority

The six-member Authority met 13 times during 2013–14 focusing mainly on the implementation of the Basin Plan. The newest member, George Warne was appointed in May 2014. Key priorities included: publishing the constraints management strategy, developing the Basin-wide environmental watering strategy, the review of joint programs, the sustainable diversion limit adjustment process and the water resource planning process.

Significant outcomes included:

- all Basin governments signing the implementation agreement
- delivering the second annual Basin annual environmental watering priorities
- publishing the constraints management strategy for public consultation
- publishing the environmental watering outlook
- completing two groundwater SDL reviews
- developing the northern Basin review
- publishing guidelines on the water trading rules commencing on 1 July 2014
- developing the ecological elements project, the method for scoring ecological equivalence
- developing the benchmark and inundation modelling
- developing the monitoring and evaluation framework, including monitoring and evaluating the social and economic impacts of the Basin Plan
- implementing water resource plans under the Basin Plan and progressing amendments to transitional and interim water resource plans
- participating in Basin Community Committee, Advisory Committee on Social, Economic and Environmental Sciences and Northern Basin Advisory Committee meetings
- progressing the cultural flows research project
- oversighting provision of information to the Ministerial Council on review of the joint programs and finalising the environmental works and measures such as the Koondrook–Perricoota Forest Flood Enhancement Project
- developing new quarterly reporting process to the Basin Officials Committee and the Ministerial Council
- attending meetings, workshops and conferences with stakeholders to provide updates on implementating the Basin Plan and to discuss and seek input to the implementation processes and key bodies of work.

Murray–Darling Basin Ministerial Council

The Murray–Darling Basin Ministerial Council is comprised of the Australian Government Parliamentary Secretary to the Minister for the Environment, the Hon. Senator Simon Birmingham, and Basin state ministers with responsibility for the Murray–Darling Basin. At 30 June 2014 Basin state ministers comprised:

- the Hon. Kevin Humphries MP (New South Wales)
- the Hon. Peter Walsh MP (Victoria)
- the Hon. Ian Hunter MLC (South Australia)
- the Hon. Andrew Cripps MP (Queensland)
- Mr Simon Corbell MLA (ACT).

As set out in the agreement, Ministerial Council has a decision-making and policy role in regards to state water shares as well as in funding and delivering natural resource management programs. The Murray–Darling Basin Authority prepares an annual corporate plan on these matters for approval by Ministerial Council.

Ministerial Council also has a decision-making and policy role relating to critical human water needs as provided for in the Water Act, which also provides for a complementary role for the Basin Plan. The Ministerial Council is able to direct and seek advice from the Basin Officials Committee about its powers and functions under the agreement.

Meetings and outcomes

The Murray–Darling Basin Ministerial Council met three times in 2013–14: November 2013 in Canberra, February 2014 in Sydney, and May 2014 in Adelaide. The communiqués from these meetings are available on our website. The Ministerial Council achieved a number of significant outcomes during 2013–14, both in and out of session, these include:

Corporate plan matters

- directed the Basin Officials Committee to advise by the end of 2013 on the 2014–15 budget and longer term funding and institutional governance arrangements for the joint government programs
- approved enhanced governance of the joint activities including:
  - approving a service level agreement, between the Council and the MDBA regarding the delivery of joint programs
  - approving a statement of intent between the Council and MDBA setting out the collaborative arrangements under which the Council will operate
  - agreed amendments to the Murray–Darling Basin Agreement to acknowledge the service level agreement, the statement of intent setting out the collaboration and amendments required to implement the agreed 2014–15 joint activities budget
- began and considered a review of the joint activity cost shares
- agreed amendments to the MDBA 2014–15 corporate plan to accommodate costs from the Koondrook–Perricoota Forest Flood Enhancement Project
- commenced a cost efficiency review of River Murray operations
- considered the draft 2014–15 corporate plan at the Ministerial Council in February and in May 2014.

Other activities

- provided oversight of the work program of the sustainable diversion limit adjustment and constraint measures
- approved the draft Lower Lakes, Coorong, Murray Mouth icon site environmental water management plan for public release
- endorsed the public release of the drought emergency framework for lakes Alexandrina and Albert to replace the real-time management strategy to avoid acidification in the Lower Lakes
- approved new governance arrangements for the Barmah–Millewa Forest environmental water allocation
- considered the initial findings of the general review of salinity and agreed to the development of an updated Basin salinity management program by 2015 and the review of Schedule B to the Murray–Darling Basin Agreement to enable the program's implementation
- ceased funding Cap implementation activity, because reporting began on water use, as set out in section 71 of the Water Act
- considered the activities of the Basin Plan Implementation Committee, which was established in August 2013.

Basin Officials Committee

The Murray–Darling Basin Officials Committee is established by the Murray–Darling Basin Agreement, Schedule 1 to the Water Act. The committee facilitates cooperation and coordination between the Australian Government, the MDBA and the Basin states in funding works and managing the Basin water resources.

Membership of the committee comprises officials from the six Basin governments, and the committee is chaired by the Commonwealth committee member. The Authority Chair and MDBA Chief Executive are non-voting members of the committee.

The committee is responsible for providing advice to the Murray–Darling Basin Ministerial Council, and for implementing policy and decisions of the council on matters such as state water shares and coordination of environmental watering.

The committee has high-level decision-making responsibilities for river operations, including setting objectives and outcomes to be achieved by the MDBA in River Murray operations and providing advice to the Ministerial Council on the joint programs component of the corporate plan. As at 30 June 2014, committee membership comprised:

- Chair, Mr David Parker (Australian Government)
- Mr Michael Bullen (New South Wales)
- Dr Emily Phillips (Victoria)
- Mr Tim Goodes (South Australia)
- Mr Lyall Hinrichsen (Queensland)
- Ms Dorte Ekelund (ACT).

Meetings and outcomes

The Basin Officials Committee held seven meetings during 2013–14, and achieved the following significant outcomes:

Corporate plan

- reconvened the Review of Joint Assets Taskforce to provide advice to the Basin Officials Committee in preparing options for future joint program arrangements, including advice on the 2014–15 budget
- developed the service level agreement between the MDBA and the Ministerial Council and agreed to a statement of intent between the council and MDBA setting out the collaborative arrangements under which the council will operate
- provided advice on transitional arrangements for The Living Murray Committee
- considered various amendments to the MDBA corporate plan 2013–14 and considered the draft MDBA 2014–15 corporate plan.

Program and river management:

- coordinated environmental watering such as the successful multi-site environmental watering trial, and watering the Moira grass wetlands as well as contributing to the Murray–Darling Environmental Water Holder's report 2013
- agreed to the draft 2013 strategy for River Murray increased flows and considered River Murray increased flow entitlement arrangements
- agreed to the Belsar Yungera floodplain management project, Burra Creek, Gunbower, Guttrum, Benwell, Hattah, Lindsay Island, Nyah, Riverine recovery, Vinifera, Wallpolla, Hume Dam airspace, pre-release operating rule change, and progress to phase 2 of the SDL adjustment assessment process (business case development)
- approved the amended specific objective and outcome for the Barmah–Millewa Forest environmental water allocation, the outcomes for river operations in the River Murray system and the revised outcome for the Dartmouth Dam minimum planned regulated release
- considered specific objectives and outcomes for periods of tier 2/3 water sharing arrangements
- provided advice on construction, management and operations of assets such as the recently completed Hume Dam southern training wall buttress and the Koondrook–Perricoota Forest Flood Enhancement project
- approved the sales of a residence and land in Victoria.

Reviews and reports

- proposed development of a general review of salinity management and endorsed the initial key findings in April 2014 including investigating options for minimising the cost of operating the salt interception schemes in 2014–15

- provided advice to the council on the review of arrangements for Murray–Darling Basin joint activities including endorsing the cost shares review of River Murray operations for provision to the council and oversight of the cost efficiency review of River Murray operations
- agreed to progress the project brief for a review of special accounting
- adopted the water resource assessment process 2013, the River Murray water accounts 2013, and the guide to special accounting 2013
- agreed to approve the existing objectives and outcomes in the annual review of the objectives and outcomes for river operations in its current form until 1 June 2015
- noting the Independent River Operations Review Group's report on the review of river operations
- provided advice on the constraints management strategy
- provided advice on the ecological elements scoring method in the environmental equivalence report developed by CSIRO.

Basin Plan Implementation Committee

In August 2013 the finalised implementation agreement established the new Basin Plan Implementation Committee as a high-level forum to monitor, review and make decisions relevant to implementing the agreement. The MDBA chairs the committee which has members from the Basin state agencies responsible for water resource management and environmental watering, the Commonwealth Environmental Water Holder, and the Australian Government Department of the Environment.

Four Basin Plan Implementation Committee working groups were also established — water resource planning, environmental watering, trade rules, and monitoring and evaluation. These four technical working groups also have Basin government representatives and have been set up to progress the tasks outlined in the implementation agreement. The MDBA also chairs each working group and provides secretarial support.

Meetings and outcomes

The committee met three times since August 2013. The terms of reference, work programs and working groups were developed and agreed to. Arrangements to share information on community engagement were also established and are working well. The committee provided a progress report on Basin Plan implementation to the Ministerial Council in May. It highlighted the work on the groundwater reviews, environmental watering and the northern Basin review.

The four working groups have met more frequently to progress the many tasks under the implementation agreement in a collaborative manner. These tasks have included:

- developing technical guidelines for the water trading rules
- working through the implementation of the Schedule 12 reporting guidelines
- providing feedback on the *Handbook for practitioners on water resource plan requirements*
- progressing the 2014–15 Basin annual watering priorities and the Basin-wide watering strategy
- developing a general approach on how the MDBA and the Basin states progress water resource plans which are consistent with the Basin Plan.

These arrangements have aided collaboration with Basin governments on the implementation of the Basin Plan.

Basin Community Committee

The role of the Basin Community Committee includes providing advice to the MDBA about the performance of its functions, including:

- engaging the community in the implementation of the Basin Plan
- community matters relating to the Basin water resources
- matters referred to the committee by the Authority.

The Basin Community Committee advises the Murray–Darling Basin Ministerial Council on the Murray–Darling Basin and its functions under the Murray–Darling Basin Agreement, which may include matters such as delivery of natural resource management programs.

The committee liaises with the broader Basin community by convening meetings with regional Basin stakeholders during the implementation process for the Basin Plan and to help provide advice to the Authority and the Murray–Darling Basin Ministerial Council. At 30 June 2013, the 11 member committee comprised:

- Chair, Rory Treweeke, Lightning Ridge (NSW)
- Russell Pell, Wyuna (VIC)
- Joan Burns, Mildura (NSW)
- Paul Harvey, Kingswood (SA)
- Karen Hutchinson, Griffith (NSW)
- Howard Jones, Dareton (NSW)
- Christopher Joseph, Dalby (QLD)
- Anthony Martin, Merbein (VIC)
- Joanne Pfeiffer, Murray Bridge (SA)
- Grant Rigney, Meningie (SA)
- Jason Wilson, Dubbo (NSW).

Meetings and outcomes

The Basin Community Committee held five meetings during 2013–14 and achieved the following significant outcomes:

- provided strategic advice to the MDBA on its engagement with communities
- provided advice and assistance to the MDBA engagement team with coordinating and facilitating community meetings
- attended Basin update and other community meetings
- provided written advice and feedback to the MDBA on river reach communications documents
- received briefings and presentations on policy and technical issues relating to the implementation of the Basin Plan
- provided advice to the Ministerial Council on localism, and community engagement with the MDBA and water reform in the Basin.

The Basin Community Committee also advised the MDBA on the coordination of environmental watering, monitoring and evaluation (particularly with regards to social and economic indicators), localism, groundwater, cultural flows, the constraints management strategy, water trade guidelines and coal seam gas.

Northern Basin Advisory Committee

During 2013–14 the Northern Basin Advisory Committee continued providing valuable independent advice on how an adaptive Basin Plan can be implemented in the northern Basin. The main focus of the committee has been their northern Basin work program, which is guided by six key objectives:

- to achieve positive social and economic outcomes
- to achieve sensible water recovery and effective use
- to identify the best environmental science
- to ensure communities have confidence in the implementation of the Basin Plan
- to establish reliable monitoring and evaluation methods
- to recognise cultural flows.

Members of the committee are:

- Mal Peters (Chair)
- Edward Fessey
- Councillor Katrina Humphries
- Bruce McCollum
- Sarah Moles
- John Clements
- Michelle Ramsay
- Councillor Donna Stewart
- Ian Todd
- Geoff Wise.

The committee met four times during the year: 10–11 September Bourke, 26–27 November Canberra, 10–11 February Narrabri and 17–18 June Moree.

Advisory Committee on Social, Economic and Environmental Sciences

The MDBA established the Advisory Committee on Social, Economic and Environmental Sciences to provide high-level, strategic advice on a range of scientific matters relevant to implementing the Basin Plan. Members of the committee bring skills and eminence in the fields of economics, hydrology, ecology and resilience, water governance and law, sociology and sustainable systems. The committee members are:

- Dr Brian Walker (Chair)
- Professor Stuart Bunn
- Professor Poh-Ling Tan
- Professor Kate Auty
- Dr David James
- Associate Professor Mike Stewardson.

The diversity of the members' skills provides a valuable opportunity to integrate across the scientific disciplines and to help ensure that our work is based on the best possible scientific advice. Strategic advice from the committee is used in developing a coherent approach to identifying knowledge gaps, aligning collective efforts, and identifying new ways to connect and communicate the complex technical issues that underpin a healthy working Basin.

The committee met four times through the year and provided advice on key policy and implementation issues facing the MDBA including: the northern Basin science review, the Basin watering strategy, the constraints management strategy, the SDL adjustment mechanism, and monitoring and evaluating the Basin Plan.

During the year Professor Tom Kompas resigned from the committee and was replaced by Dr David James who has more than 30 years of consultancy and research experience as an environmental and natural resource economist. Dr James is currently an adjunct professor in the Faculty of Science, Health, Education and Engineering at the University of the Sunshine Coast, Queensland. He is also the chair of the Advisory Committee on the Economy and Environment Program for South East Asia (Penang and Los Banos).

Appendix B

Agency resource statement and resources for outcome 1

The annual report must include an agency resource statement table providing information about the various funding sources that the agency may draw upon during the year.

The agency resource statement has been designed to allow agencies to reconcile the final usage of all resources in cash terms, by declaring the actual available appropriation for 2013–14 (including carried forward cash balances and further adjustments such as section 32 transfers under the *Financial Management and Accountability Act 1997* and advances to the Finance Minister) and comparing this to the actual payments made.

Additionally, for departmental appropriations and special accounts, information about any remaining balance that will be carried over to the next financial year must also be reported.

Table B.1 MDBA agency resource statement 2013–14

	ACTUAL AVAILABLE APPROPRIATION FOR 2013–14 $'000 (A)	PAYMENTS MADE 2013–14 $'000 (B)	BALANCE REMAINING 2013–14 $'000 (A)-(B)
Ordinary annual services			
Departmental appropriation	47,826	47,826	-
Total	**47,826**	**47,826**	**-**
Administered expenses			
Outcome	3,000	3,000	-
Total	**-**	**-**	**-**
Total ordinary annual services	**50,826**	**50,826**	**-**
Other services			
Administered expenses			
Specific payments to states, ACT, NT and local govt			
Outcome	-	-	-
Total	**-**	**-**	**-**
New administered expenses			
Outcome	-	-	-
Total	**-**	**-**	**-**
Departmental non-operating			
Equity injections	-	-	-
Total	**-**	**-**	**-**

	ACTUAL AVAILABLE APPROPRIATION FOR 2013–14 $'000 (A)	PAYMENTS MADE 2013–14 $'000 (B)	BALANCE REMAINING 2013–14 $'000 (A)-(B)
Administered non-operating	-	-	-
Administered assets and liabilities	-	-	-
Payments to CAC Act bodies on non-operating	-	-	-
Total	**-**	**-**	**-**
Total other services	**-**	**-**	**-**
Total available appropriations and payments	**50,826**	**50,826**	**-**
Special appropriations			
Special appropriations limited by criteria/entitlement	**-**	**-**	**-**
Special Appropriation Act	-	-	-
Special appropriations limited by amount	-	-	-
Special Appropriation Act	-	-	-
Total special appropriations	-	-	-
Special accounts			
Opening balance	136,638		
Appropriations receipts	47,826		
Appropriation receipts — other agencies			
Non-appropriation receipts to Special Accounts	93,736		
Payments made		186,773	
Total special account			**91,427**
Total resourcing and payments	278,200	186,773	91,427
Less appropriations drawn from annual or special appropriations above and credited to special accounts and/or CAC Act bodies through annual appropriations	47,826	47,826	-
Total net resourcing and payments	**230,374**	**138,947**	**91,427**

Outcome 1: Equitable and sustainable use of the Murray–Darling Basin by governments and the community including through development and implementation of a Basin Plan, operation of the River Murray system, shared natural resource management programs, research, information and advice

Table B.2 Budgeted expenses for outcome 1

	BUDGET 2013–14 $'000 (A)	ACTUAL 2013–14 $'000 (B)	VARIATION 2013–14 $'000 (A)-(B)
Program 1.1 Equitable and sustainable use of the Murray–Darling Basin			
Departmental appropriation	47,913	47,826	(87)
Special accounts	145,506	138,947	(6,559)
Total for program 1.1	**193,419**	**186,773**	**(6,647)**
Outcome 1 Totals by appropriation type			
Departmental appropriation	47,913	47,826	(87)
Special accounts	145,506	138,947	(6,559)
Total expenses for outcome 1	**193,419**	**186,773**	**(6,647)**

	2010–11	2011–12	2012–13	2013–14
Average staff level (number)	295	295	305	295

Appendix C

Advertising and market research

This table of expenditure for 2013–14 is presented in accordance with the reporting requirements in s.311A of the *Commonwealth Electoral Act 1918*. Expenditure was in the media advertising category only.

Table C.1 MDBA media advertising for 2013–14

AGENCY	PURPOSE	EXPENDITURE $ (EXCLUDING GST)
Adcorp	Recruitment advertising	7,786.64
Adcorp	Non-recruitment advertising	4,540.00
Total		**12,326.64**

Appendix D

Ecologically sustainable development and environmental performance

The principles of ecologically sustainable development, outlined in the *Environment Protection and Biodiversity Conservation Act 1999*, are at the core of our activities and business, as shown in Table D.1.

Table D.1 Examples of MDBA's contribution to the principles of ecologically sustainable development

PRINCIPLES	MDBA ACTIVITIES
Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations	developing and implementing the Basin Plan, which will help to ensure that the environmental health of the Basin is maintained for future generations. Decision making processes have included extensive consultation to ensure that economic, environmental, social and equitable aspects are considered
If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation	constructing salt interception schemes to divert salt from the River Murray funding strategies to reduce alien fish species in the Basin
The principle of intergenerational equity — that the present generation should ensure that the health, biodiversity and productivity of the environment is maintained or enhanced for the benefit of future generations	developing an environmental watering management plan and annual watering priorities which will help to maximise environmental outcomes and contribute to the conservation of biodiversity and ecological integrity within the Basin completing the construction of major water management structures to ensure that environmental water will be delivered more efficiently and effectively completing the Sea–to–Hume Fishway Program to allow for greater movement of native fish all construction undertaken by the state constructing authorities conformed to approved construction environmental plans
The conservation of biodiversity and ecological integrity should be a fundamental consideration in decision-making	using The Living Murray's environmental water portfolio to meet the environmental objectives of the icon sites, which includes Australia's largest river red gum forest, and internationally significant wetlands
Improved valuation, pricing and incentive mechanisms should be promoted	n/a

Internal operations

We also follow the principals of ecologically sustainable development in our internal operations and have implemented a number of initiatives.

Recycling

- we operate a paper, cardboard, battery, co-mingled and organic waste recycling program
- we continue to use 100% recycled or partially recycled stock for all print publications
- we recycle printer cartridges
- we use recycled paper products in all bathrooms.

Reducing

- we minimise our paper and toner use by default setting printers to double-sided, black and white printing
- we publish only in electronic format unless a need for print copies is identified
- we carefully plan print runs, which has significantly reduced our excess stock
- we use water saving flushes in all bathrooms, and low flow taps where possible, to reduce water consumption.

Reducing our power consumption:

- we have implemented server virtualisation for our IT network to reduce power usage
- we enable computers to turn off automatically overnight to save power
- we use power-efficient centralised multi-function devices instead of distributed desktop printing
- we monitor desktop computer power usage so that the success of power-saving initiatives can be measured
- operate lighting through movement sensors in all work spaces, so that lights are switched off when areas are not in use
- we purchase energy-saving whitegoods and ICT equipment
- we have installed secondary glazing on windows where heat transference is significant.

Figure D.1 MDBA energy use (kW/h) from 2011–12 to 2013–14

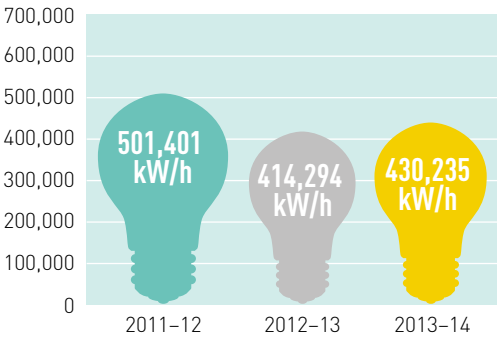
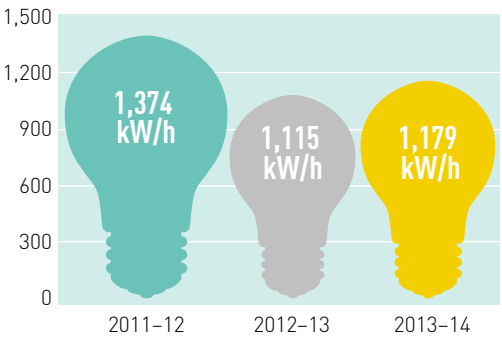


Figure D.2 MDBA average daily energy use (kW/h) from 2011–12 to 2013–14



Note: the results reported in last year's annual report only included one MDBA tenancy area. The amounts now cover energy use for all MDBA tenancies.

We continue to look for further opportunities in our internal operations, and in our premises, to reduce our impact on the environment, including using ipads at meetings to reduce the need to print documents (photo Brayden Dykes, MDBA).

Travel

Interstate travel is minimised by utilising teleconferences, Skype and videoconferencing, where possible, although in 2013–14 there was extensive travel throughout the Basin due to the need to consult with Basin communities.

The MDBA actively supports staff who cycle to work by providing secure bike storage, lockers and showers. About 40% of staff regularly use the bike and locker facilities.

Appendix E

MDBA communication products

We produce a range of communication products each year, in printed and electronic formats.

Publications

2013–14 Murray–Darling Basin environmental watering priorities (13/13)

Approach for estimating salt export from the River Murray system to the Southern Ocean (15/13)

Basin environmental watering outlook 2014–15

Basin salinity management strategy 2011–12 annual implementation report (3/14)

Basin salinity management strategy 2011–12 summary (2/14)

Constraints management strategy 2013–14 (28/13)

Constraints management strategy 2013–24 (21/13)

Constraints management strategy (draft): public feedback report (27/13)

Flood management at Dartmouth Dam (11/14)

Handbook for practitioners — water resource plan requirements (20/13)

Lake Victoria annual compliance report 2012–13 (04/14)

LiDAR acquisition and flood inundation models (26/13)

Lower Lakes, Coorong and Murray Mouth environmental water management plan 2014 (10/14)

Lower Lakes, Coorong and Murray Mouth environmental water management plan, communications and engagement strategy (16/14)

Murray–Darling Basin Authority annual report 2012–13 (18/13)

Murray–Darling Basin Authority compliance strategy (12/14)

Objectives and outcomes for river operations in the River Murray system (8/14)

Preliminary overview of constraints to environmental water delivery in the Murray–Darling Basin (14/13)

Summary of analysis undertaken to support the experienced river operators' workshop (22/13)

The Living Murray environmental water delivery 2012–13 (12/14)

Vegetation mapping using satellite imagery (26/13)

Posters

Murray–Darling Basin map poster 2013 (5/14)

Brochures

Murray–Darling Basin Authority overview brochure (7/14)

Fact sheets

New Basin Plan water trading rules start 1st July 2014

What is the Murray–Darling Basin Plan? (21/14)

DVDs

Returning water to Hattah Lakes, episode 1 and 2

eNewsletters

The Spillway (October, January, March, May)

The northern Basin newsletter (October, January, March, May)

ENDMATTER

Abbreviations and acronyms	p. 204
Scientific names of plants and animals	p. 205
Glossary	p. 206
List of requirements	p. 210
Index	p. 213

River red gum in Barmah–Millewa Forest, one of The Living Murray's icon sites (photo by Keith Ward Goulburn Broken Catchment Management Authority)

Abbreviations and acronyms

AEP	Annual exceedance probability
AHD	Australian height datum
CSIRO	Commonwealth Scientific and Industrial Research Organisation
EC	electrical conductivity unit
GL	gigalitre (a billion litres)
IRORG	Independent River Operations Review Group
MDBA[1]/the Authority[2]	[1]Murray–Darling Basin Authority: the agency; [2]the six member Authority
ML	megalitre (a million litres)
ML/d	megalitre per day
MLDRIN	Murray Lower Darling Rivers Indigenous Nations
Ministerial Council	Murray–Darling Basin Ministerial Council
NBAN	Northern Murray–Darling Basin Aboriginal Nations
PBS	Portfolio Budget Statements
PSM	Public Service Medal
RMIF	River Murray Increased Flows
SDL	sustainable diversion limits
TLM	The Living Murray

Scientific names of plants and animals

Black box	*Eucalyptus largiflorens*
Carp	*Cyprinus carpio*
Common reed	*Phragmites spp.*
Coolabah	*Eucalyptus coolabah*
Dusky woodswallow	*Artamus cyanopterus*
Golden perch	*Macquaria ambigua*
Moira grass	*Pseudoraphis spinescens*
Murray cod	*Maccullochella peelii*
Platypus	*Ornithorhynchus anatinus*
Pygmy perch	*Nannoperca australis*
River red gum	*Eucalyptus camaldulensis*
Royal spoonbill	*Platalea regia*
Ruppia	*Ruppia tuberosa*
Silver perch	*Bidyanus bidyanus*
Tilapia	*Oreochromis spp.*
Trout cod	*Maccullochella macquariensis*
Yellowbelly or golden perch	*Macquaria ambigua*
White ibis	*Threskiornis moluccus*

Glossary

Acid sulfate soils

Soils formed naturally when sulfate-rich water mixes with sediments containing iron oxides and organic matter.

Additional dilution flow

This is an extra entitlement that South Australia receives when certain conditions are met within MDBA storages.

Airspace

The difference between the capacity of a reservoir and the volume of water currently in storage.

Allocation

The water to which the holder of an access licence is entitled from time to time under licence, as recorded in the water allocation account for the licence.

Australian height datum

In 1971 the mean sea level for 1966–68 was assigned the value of zero on the Australian height datum at 30 tide gauges around the coast of the Australian continent. The resulting datum surface, with minor modifications in two metropolitan areas, was termed the Australian height datum and was adopted by the National Mapping Council of Australia as the datum to which all vertical control for mapping is to be referred. Elevations quoted using this datum are normally followed with the acronym 'AHD'.

Australian National Committee on Large Dams

The Australian National Committee on Large Dams Incorporated is a voluntary association of organisations and individual professionals with an interest in dams in Australia.

Barmah Choke

A narrow section of the River Murray that constrains the volume of water that can pass during major floods. During floods, large volumes of water are temporarily banked up behind the Barmah Choke, flooding the Barmah–Millewa Forest wetland system.

Barrages

Five low and wide weirs built at the Murray Mouth in South Australia to reduce the amount of sea water flowing in and out of the mouth due to tidal movement, and to help control water levels in the Lower Lakes and River Murray below Lock 1 (Blanchetown, South Australia).

Baseline

Conditions regarded as a reference point for the purpose of comparison.

Basin states

For the purposes of the Basin Plan, the Basin states are defined in the Water Act as New South Wales, Victoria, Queensland, South Australia and the Australian Capital Territory.

Basin water resources

Under the *Water Act 2007*, Basin water resources are within or beneath the Murray–Darling Basin, but do not include water resources within or beneath the Basin that are prescribed by the regulations, or groundwater that forms part of the Great Artesian Basin.

Cap (the Cap on diversions)

A limit, implemented in 1997, on the volume of surface water that can be diverted from rivers for consumptive use. Under the draft Basin Plan, the Cap will be replaced by long-term average sustainable diversion limits.

Carryover

A way to manage water resources and allocations that allows irrigators to take a portion of unused water from one season into the new irrigation season.

Connectivity

Connections between natural habitats, such as a river channel and adjacent wetland areas. Connectivity is a measure or indicator of whether a water body (river, wetland, floodplain) has water connections or flow connections to another body.

Constraints

A constraint is anything that affects the delivery of environmental water. It can include physical aspects such as low lying bridges, or river channel capacity, but can also include operational aspects such as river rules or operating practices that impact on when and how much water can be delivered. We can improve how effectively we manage and deliver environmental water by looking at how we can change some of these physical and operational constraints.

Consumptive use

Use of water for irrigation, industry, urban, stock and domestic use, or for other private consumptive purpose.

Critical human water needs

Under the Water Act, the minimum amount of water required to meet core requirements of communities dependent on Basin water resources. The definition also includes non-human requirements that, if not met, would cause prohibitively high social, economic or national security costs.

Cultural flows (or cultural water flows)

Water entitlements legally and beneficially owned by the Aboriginal nations of the Murray–Darling Basin. They are of sufficient and adequate quantity and quality to improve the spiritual, cultural, environmental, social and economic conditions of Aboriginal people.

EC

Water and soil salinity levels are measured by passing an electric current between the two electrodes of a salinity meter. Electrical current (EC) is influenced by the concentration and composition of dissolved salts. Salts increase the ability of a solution to conduct an electric current, so a high EC indicates a high salinity level. Freshwater above 800 EC becomes marginal for drinking, above 1,600 EC it is brackish, and above 4,800 EC it is saline.

Entitlement (or water entitlement)

The volume of water authorised to be taken and used by an irrigator or water authority. It includes bulk entitlements, environmental entitlements, water rights, sales water and surface-water and groundwater licences.

Environmental flow

Any river flow pattern provided with the intention of maintaining or improving river health.

Environmental water

Water used to achieve environmental outcomes, including benefits to ecosystem functions, biodiversity, water quality and water resource health.

Environmental water requirements

The amount of water needed to meet an ecological or environmental objective.

Fishway

A structure that provides fish with passage past an obstruction in a stream.

Flood runner

A small anabranch which flows only during periods of high flow in the stream it branches from.

Flow

The movement of water — the rate of water discharged from a source, given in volume with respect to time.

Flow event

A single event of flow in a river, sometimes required to achieve one or more environmental targets. A series of flow events comprises a flow history.

Flow regime

The characteristic pattern of a river's flow quantity, timing and variability.

Groundwater

Water occurring naturally below ground level (in an aquifer or otherwise).

Held environmental water

Is water that is specifically owned, stored or reserved for environmental purposes.

Inflow

Source of the water that flows into a specific body of water — for a lake, inflow could be a stream or river, and inflow for a stream or river could be rain.

Macroinvertebrate

An animal without a backbone that is large enough to be seen without magnification.

Modelling

Application of a mathematical process or simulation framework (such as a mathematical or econometric model) to describe various phenomena and analyse the effects of changes in some characteristics on others.

Murray Lower Darling Rivers Indigenous Nations

MLDRIN comprises Traditional Owner nominated representatives from the following Nations:

Barkindji, Dhudhuroa, Dja Dja Wurrung, Latji Latji, Maraura, Mutti Mutti, Nari Nari, Ngarrindjeri, Ngintait, Nyeri Nyeri, Tatti Tatti, Taungurung, Wadi Wadi, Wamba Wamba, Waywurru, Wegi Wegi, Wergaia, Wiradjuri, Wolgalu, Wotjobaluk, Yaitmathang, Yita Yita, Yorta Yorta.

Northern Murray–Darling Basin Aboriginal Nations

NBAN was formed in April 2010 and provides an Aboriginal perspective on natural resource management and cultural issues in the Basin. NBAN comprises Traditional Owner nominated representatives from the following Nations:

Barkindji (Paakantyi), Barunggam, Bidjara, Bigambul, Budjiti, Euahlayi, Gamilaroi, Githabul, Gunggari, Gwamu (Kooma), Jarowair, Kambuwal, Kunja, Kwiambul, Maljangapa, Mandandanji, Mardigan, Murrawarri, Ngemba, Ngiyampaa, Wailwan and Wakka Wakka.

Ramsar Convention

The Convention on Wetlands of International Importance is an intergovernmental treaty that provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.

Regulated

A water system in which water is stored or flow levels are controlled through the use of structures such as dams and weirs.

River Murray system

The River Murray system extends from Hume Dam, at Albury New South Wales, downstream to the Coorong, Lower Lakes and Murray Mouth in South Australia. It includes connected anabranches, creeks and major tributaries such as the Murrumbidgee, Edward–Wakool, Kiewa, Ovens, Goulburn, Broken, Campaspe, Loddon, Avoca and the lower Darling River (south of Menindee Lakes). The system is highly regulated and requires complex river management operations.

Salt interception scheme

Large-scale groundwater pumping and drainage projects that intercept saline groundwater inflowing to rivers, and dispose of the saline waters by evaporation and aquifer storage at more distant locations.

Supply measures

Environmental works projects and changes to river operations that would enable the same environmental outcomes to be achieved with less water recovery.

Surface water

Includes water in a watercourse, lake or wetland, and any water flowing over or lying on the land after having precipitated naturally or after having risen to the surface naturally from underground (see s. 4 of the Water Act).

Sustainable diversion limit

The maximum long-term annual average quantities of water that can be taken, on a sustainable basis, from the Basin water resources as a whole, and the water resources, or particular parts of the water resources, of each water resource plan area.

Sustainable diversion limit adjustment mechanism

Allows the sustainable diversion limit to be adjusted under certain circumstances.

Take

Take is the removal of water from, or the reduction in flow of water into, a water resource.

Water accounting

A systematic process of identifying, recognising, quantifying, reporting and assuring information about water, the rights or other claims to water, and the obligations against water. Water accounting applies Australian Water Accounting Standards

Water allocation

The specific volume allocated to water entitlement holders in a given season, often quoted as a percentage of the volume of each entitlement. For example, a 20% allocation in a particular season allows a water user with a 100 ML entitlement to take 20 ML of water.

Water resource

Of groundwater — water that occurs naturally beneath the ground level (whether in an aquifer or otherwise), or water that has been pumped, diverted or released to an aquifer for the purpose of being stored there. Murray–Darling Basin groundwater resources exclude groundwater in the Great Artesian Basin.

Of surface water — includes water in a watercourse, lake or wetland, and any water flowing over or lying on land after having precipitated naturally, or after having risen to the surface naturally from beneath the ground level.

Water resource plans

Statutory management plans developed for particular surface-water and groundwater systems, currently known by different names throughout the Murray–Darling Basin (such as 'water sharing plans' in New South Wales and 'water allocation plans' in South Australia).

Water trading rules

A set of overarching consistent rules enabling market participants to buy, sell and transfer tradeable water rights.

Water year (or hydrologic year)

A continuous 12-month period starting from July, or any other month as prescribed under the water regulation or a resource operations plan, but usually selected to begin and end during a relatively dry season. Used as a basis for processing streamflow and other hydrologic data.

List of requirements

The location of information provided in accordance with the Requirements for Annual Reports for Departments, Executive Agencies and FMA Act Bodies, issued by the Department of the Prime Minister and Cabinet in May 2014.

n/a denotes that the requirement was not applicable to the MDBA during 2013–14.

PART OF REPORT	
Letter of transmittal (mandatory)	ii
Table of contents (mandatory)	1
Index (mandatory)	213
Glossary (mandatory)	206
Contact officer(s) (mandatory)	inside back cover
Internet addresses (mandatory)	back cover
REVIEW BY CHIEF EXECUTIVE (MANDATORY)	**12–13**
Summary of significant issues and developments (suggested)	5
Overview of department's performance and financial results (suggested)	14
Significant issues and developments — portfolio (suggested for portfolio departments)	n/a
Outlook for following year (suggested)	14
AGENCY OVERVIEW (MANDATORY)	**2–4**
Role and functions (mandatory)	2
Organisational structure (mandatory)	4
Outcome and program structure (mandatory)	21, 39, 61, 73
Where outcome and program structures differ from PBS/PAES (mandatory)	n/a
Portfolio structure (mandatory for portfolio departments)	n/a
REPORT ON PERFORMANCE (MANDATORY)	**21–95**
Review of performance relating to programs and contribution to outcomes (mandatory)	21–95
Actual performances relating to deliverables and KPIs set out in PBS/PAES (mandatory)	23, 41, 63, 75
Where performance targets differ from the PBS/PAES (mandatory)	n/a
Narrative discussion and analysis of performance (mandatory)	21–95
Trend information (mandatory)	21–95
Significant changes in nature of principal functions/services (suggested)	n/a
Performance of purchaser/provider arrangements (suggested, if applicable)	124

Factors, events or trends influencing agency performance (suggested)	12, 14, 21–95
Contribution of risk management in achieving objectives (suggested)	16, 33, 34, 94, 101–2
Performance against service charter customer service standards, complaints data, and the agency's response to complaints (mandatory, if applicable)	n/a
Discussion and analysis of the agency's financial performance (mandatory)	14, 122–24
Discussion of any significant changes in financial results from the prior year, from budget or anticipated to have a significant impact on future operations (mandatory)	14, 122–24
Agency resource statement and summary resource tables by outcome (mandatory)	195–97
MANAGEMENT AND ACCOUNTABILITY	
Corporate governance	
Certification of compliance with the Commonwealth Fraud Control Guidelines (mandatory)	104
Statement of the main corporate governance practices in place (mandatory)	97–127
Names of the senior executive staff and their responsibilities (SES) (suggested)	18–19
Senior management committees and their roles (suggested)	98–100
Corporate and operational plans and associated performance reporting and review (suggested)	120–21
Internal audit arrangements including approach adopted to identifying areas of significant financial or operational risk and arrangements to manage those risks (suggested)	103
Policy and practices on the establishment and maintenance of appropriate ethical standards (suggested)	103–110
How nature and the amount of remuneration for SES officers is determined (suggested)	111
External scrutiny	
Significant developments in external scrutiny (mandatory)	105
Judicial decisions and decisions of administrative tribunals and by the Australian Information Commissioner (mandatory)	105
Reports by the Auditor-General, a parliamentary committee, the Commonwealth Ombudsman or an agency capability review (mandatory)	105
Management of human resources	
Assessment of effectiveness in managing and developing staff to achieve agency objectives (mandatory)	107–10
Workforce planning, staff turnover and retention (suggested)	110–16
Impact and features of enterprise or collective agreements, individual flexibility arrangements (IFAs), determinations, common law contracts and Australian Workplace Agreements (AWAs) (suggested)	111–12

Training and development undertaken and its impact (suggested)	108–10
Work health and safety performance (suggested)	116–19
Productivity gains (suggested)	n/a
Statistics on staffing (mandatory)	112–14
Enterprise or collective agreements, IFAs, determinations, common law contracts and AWAs (mandatory)	111–12
Performance pay (mandatory)	111
Assessment and effectiveness of assets management (mandatory, if applicable)	124
Assessment of purchasing against core policies and principles (mandatory)	124
Consultants, consultancy services and contracts (mandatory)	125
Absence of provisions in contracts allowing access by the Auditor-General (mandatory)	125
Contracts exempted from publication in AusTender (mandatory)	125
FINANCIAL STATEMENTS (MANDATORY)	129–185
OTHER MANDATORY INFORMATION	
Work health and safety (Schedule 2, Part 4 of the *Work Health and Safety Act 2011*)	116–19
Advertising and market research and statement on advertising campaigns	198
Ecologically sustainable development and environmental performance	199–201
Compliance with obligations under the *Carer Recognition Act 2010* (if applicable)	n/a
Grant programs	124
Disability reporting — explicit and transparent reference to agency level information available through other reporting mechanisms	116
Information Publication Scheme statement	106
Correction of material errors in previous annual report (if applicable)	n/a
List of requirements	210–12

Index

An `i' following a page number indicates an image; an `f' indicates a figure and a `t' indicates a table.

abbreviations 204
Aboriginal names
    rivers i
Aboriginal Nations
    cultural health index 37
    Living Murray Indigenous partnerships 54
    working with 36–7
accountability *see* management and accountability
acid sulfate soils 55
acronyms 204
active storage
    Murray–Darling Basin 86
advertising 198
    expenditure 198t
Advisory Committee on Social, Economic and Environmental Sciences 194
agency structure 3, 4f
agricultural figures
    2011–12 i
annual aerial waterbird survey 45
Annual environmental watering plan 2013–14 49
Approaches to achieve sustainable groundwater management in the Murray–Darling Basin 29
aquatic ecosystem classification 72
assets
    construction achievements 13
    equity 123, 123t
    improving 76–8
    inspecting 81
    joint ventures 124
    managing 74–96, 123, 124
    physical assets base, improving 78–81
    salt interception schemes 95–6
    water, delivering 82–95
assurance 33–4
    statements 34
audit
    external scrutiny 105
    internal 103
Audit Committee 100
    fraud control 103
    investigations 103
    membership 100
    risk management 102
Auditor-General
    consultancy services, access 125
    reports 105
Australia Day achievement awards 111
Authority 17–18
Auty, Professor Kate 194
Barmah–Millewa Forest 13, 52i
Basin Champions program 11, 69
Basin Community Committee 3, 22, 35–36, 193
    meetings 193
    membership 188f, 193
    outcomes 188f, 193
Basin Officials Committee 3, 31, 190–2
    meetings 191
    membership 188f, 190–1
    outcomes 188f, 191–2
    program management 191
    reviews and reports 191–2
    risk management 102
    river management 191
Basin Plan *see* Murray–Darling Basin Plan
Basin Plan Implementation Committee 12, 34, 192
    meetings 192
    outcomes 192
    structure 34f
Basin salinity management strategy 2001–15 95
Basin-wide environmental monitoring 45–6

Birmingham, Senator Simon 10, 69, 69i, 77i
blue-green algae mapping 64
Broken Creek 13
Bullen, Michael 191
Bunn, Professor Stuart 194
Burns, Joan 193
business continuity 103
business planning 120–1
Carr, Cappit and Bunderoo creeks
    environmental works 78
Certificate of Compliance 104
Chief Executive 9, 17–18, 19
    review 12–13
Chief Finance Officer
    report 14–16
Chowilla floodplain 13
Clements, John 194
Collings, Senator Joseph 81
Collings Trophy 9, 81
Comcare
    investigations 118
    premiums 118, 119f
Comcover 102
Commonwealth Environmental Water Holder
    collaboration with 12
    environmental watering 13
Commonwealth Environmental Water Office 22, 33–34, 40, 45, 50, 56, 72
Commonwealth Ombudsman 105
communications 66–70
    brochures 202
    DVDs 202
    education@MDBA 69
    eNewsletters 202
    fact sheets 202
    media 66–7
    posters 202
    products 67, 202
    publications 68, 202
    social media 66–7
    website 68
    work health and safety consultation 117
community involvement *see* engagement
complementary environmental works 78
compliance 33–4
    risk assessment 34
    statistics 104
constraints management strategy 46–7
    consultation on draft constraints management strategy 46–7
    pre-feasibility stage 47
construction progress 76–7
consultancy services 125
    Auditor-General, access by 125
    expenditure 125
contracts 125
    exempt 125
Corbell MLA, Simon 189
Corporate and Business Services Division 3, 4f
corporate plan 121
    Basin Officials Committee 191
    Murray–Darling Basin Ministerial Council 190
cotton i
Cripps MP, Hon. Andrew 189
critical human water needs 29–30
CSIRO 72
cultural health index 37
dam safety achievements 13
Dartmouth Dam
    flood upgrade 79
Davidson, Dianne 10, 17
deliverables
    knowledge into action 63t
    managing River Murray assets 75t
    restoring river and ecosystem health 41–3t
    transboundary water management 23–4t
development proposal referrals 56
Dickson, Rhondda 9, 17–18, 19

disability 116
discretionary grant programs 124
diversity 116
Dreverman, David 11, 19, 100
Drought emergency framework for lakes Alexandrina and Albert 49
ecologically sustainable development 199, 199t
education@MDBA 69
Edward–Wakool system 13
Ekelund, Dorte 191
Employee Consultative Committee 99–100
employees *see* staff
engagement 35–7
    Aboriginal Nations, working with 36–7
Enterprise Agreement 112
    staff statistics 112t
enterprise information strategy 66
Environmental Management Division 3, 4f
environmental performance 199–201
    ecologically sustainable development 199, 199t
    internal operations 200–1
    power consumption 200, 200f
    recycling 200
    reducing usage 200
    travel 201
environmental water
    delivery 49–51, 89
    planning 49
environmental watering 13, 48–51
    annual watering priorities 44–5
    plan 44–5
Environmental Watering Working Group 40
Environmental Works and Measures Program 76–8
    complementary environmental works 78
    construction progress 76–8
equal employment opportunities 114t
eWater 72
Executive Committee 98
    risk management 102
expenditure 123, 197t
    advertising 198t
    agency resource statement 195–6t
    market research 198t
external scrutiny 105
Fessey, Edward 194
financial management 120–5
    accommodation 125
    assets *see* assets
    business planning 120–1
    Certificate of Compliance 104
    consultancy services 125
    contracts 125
    discretionary grant programs 124
    highlights 120
    liabilities 123
    performance reporting 121–2
    procurement 124
    standards 122
financial performance 14–15, 15f, 122–3, 123t
    Basin states, contributions from 15
    core purchasing policies, against 124
    equity 123, 123t
    expenditures 123
    financial position 123
    general and special purpose reporting 15–16
    reporting 124–5
    revenues 122
financial statements 129–85
Finnley's great escape 56
fish data
    analysis 2010–13 46
flood inundation modelling 64
floodplain tree condition assessment 45
floodplain vegetation 64
fraud control 103
    investigations 103

freedom of information 106–7
documents 106
requests, lodgement of 107
frogs i
Fulbright Program Senior Scholarship 10
Geoscience Australia
aerial photograph and LiDAR data collection 8
National Science Week 9
geospatial services 66
Gibbs, Diana 18
glossary 206–9
Goodes, Tim 191
Goulburn–Murray Sedimentary Plain
review 12
governance 3
structure and relationships 188f
government, advice to 107
statistics 107t
grants 124–5
discretionary programs 124
grapes i
groundwater issues 28–9
guiding principles 2
Gunbower Creek 13
Gunbower Forest 11, 13, 51
Handbook for practitioners – water resource plan requirements 28
Hart, Barry 8, 18, 37
Harvey, Paul 193
Hattah Lakes 10, 11, 13i, 50–1, 50i, 51i, 77
hay i
Health and Safety Committee 99
Hinrichsen, Lyall 191
human resources *see* staff
Hume Dam 83i
safety and flood upgrade 78
Hume to Yarrawonga reach
protecting river banks 80
Humphries, Councillor Katrina 11, 194
Humphries MP, Hon. Kevin 190
Hunt, Hon. Greg 3
Hunter MLC, Hon. Ian 189
Hutchinson, Karen 193
inflows 84–6, 85f
information
delivering River Murray 65–6
freedom of 106–7
resources 125–6
information communications technology (ICT) 125–6
client services 125–6
disaster recovery plans 103
infrastructure 126
records management 126
web section 126
Information Management Committee 98–9
internal audit 103
internal controls 16
international engagement 70
James, Dr David 194
James, Russell 19, 100
John Monash scholars 9
Joint Activities Taskforce
review 121
joint governments' programs 13
joint ventures
managed assets 124
Jones, Henry 36, 36i
Jones, Howard 193
Joseph, Christopher 193
judicial decisions 105
key performance indicators
knowledge into action 63t
managing River Murray assets 75t
restoring river and ecosystem health 41–3t
transboundary water management 23–4t
Kneebone, Jo 100
knowledge and expertise, developing 13

Knowledge and Information Directory 64–5
knowledge into action 62–72
challenges 62
communications 66–70
deliverables 63t
education@MDBA 69–70
highlights 62
informed joint decision-making 64
key performance indicators 63t
media 66–7
meeting Basin information needs 64–6
our performance 62–3
overview 62
results 63t
social media 66–7
strategic alliances 70–2
year ahead 62
Knowles, Craig 8, 9, 10, 17, 67i
Kompas, Professor Tom 194
Koondrook–Perricoota Forest environmental works 8, 13
Lake Victoria 93
safety improvement 79
Lane, Paul 37i
leadership 108–9
learning and development 108
employee coaching program 110
executive coaching program 110
internal seminars 109
legal services 105
library service 66
list of requirements 210–12
livestock i
The Living Murray (TLM) program 8, 9, 10, 11, 48–54
assets 15, 16
environmental monitoring 52–3
environmental watering 13, 48–51
icon site condition monitoring 52–3
icon sites 48f, 52
Indigenous partnerships 54
intervention monitoring 53
restoring river and ecosystem health 40
water quality monitoring program 55–7
locks and weirs
upgrading 79
lower Lakes and barrage operation 93–4
McCollum, Bruce 194
McGrath, Paul 100
McLeod, Tony 10, 100
macroinvertebrate data
analysis 2010–13 46
management and accountability
advice to government 107
business continuity 103
Certificate of Compliance 104
external scrutiny 105
finances 120–5
fraud control and investigations 103
freedom of information 106–7
highlights 98
ICT disaster recovery plans 103
information resources 125–6
internal audit 103
legal services 105
overview 98
planning 120–5
privacy 106
project management framework 122
risk management 101
Secretariat services 105
senior management committees 98–100
staff *see* staff
Water Act 2007, directions under 107
work health and safety *see* work health and safety
market research 198
expenditure 198t
Martin, Anthony 193

Menindee Lakes 87
mid-Murray 91–3
Minister for Water 25, 188f
Miru, Mikaera 37i
mission 2
Mitta Mitta River
    channel improvements 80
modelling the Basin 64
Moira grass
    extending flows to benefit 50
Moles, Sarah 194
Morison, Jenny 100
Mulcra Island 13
Murray cod
    snags 53
Murray–Darling Basin
    asset-scale monitoring 45
    fast facts i
Murray–Darling Basin Agreement
    critical human water needs 29–30
Murray–Darling Basin Authority
    about us 2–4
    agency structure 3, 4f
    assets construction achievements 13
    Chief Executive's review 12–13
    Chief Finance Officer's report 14–16
    dam safety achievements 13
    executive team 18i, 19
    financial results 14–15, 15f
    governance 3, 188f, 189
    guiding principles 2
    history 6–7
    internal controls 16
    joint governments' programs 13
    knowledge and expertise, developing 13
    meetings 189
    membership 17i, 17–18
    mission 2
    outcomes 189
    performance snapshot 5
    role 2
    staff 4
    strategic planning and progress 3
    vision 2
    year at a glance 8–11
Murray–Darling Basin Futures Collaborative Research Network (MDBFutures) 72
Murray–Darling Basin Ministerial Council 3, 189–90
    meetings 190
    membership 188f, 189
    outcomes 188f, 190
Murray–Darling Basin Plan 12
    Aboriginal Nations, working with 36–7
    anniversary 9
    assurance 33–4
    compliance 33–4
    economic analysis 31
    engagement 35–7
    evaluation 30
    hydrological modelling 64
    implementation 25–31, 64
    monitoring 30
    research needs 71
    rollout of milestones 12
    social analysis 31
    sustainable diversion limit (SDL) adjustment 31–2
    timeline 25f
    transboundary water management 21–37
    updates 9
    water trade 29
Murray–Darling Freshwater Research Centre 72
Murray Lower Darling Rivers Indigenous Nations inside cover, 22, 28, 36, 37
Mylius, Ben 9, 62, 70, 70i
National Cultural Flows Research Project 37
National Youth Science Forum 10

native fish i
navigable pass 80
Nicholas, Frank 19, 100
Northern Basin
    economic research 33
    environmental research 32–3
    social research 33
    working in 32–3
Northern Basin Aboriginal Nations inside cover, 22, 28, 36, 37
Northern Basin Advisory Committee 11, 22, 36, 67, 193–4
    membership 194
occupational health and safety *see* work health and safety
Ombudsman 105
organisational structure 3, 4f
Parker, David 191
Parliamentary committees 105
passive integrated transponder (PIT) 78
peer reviewed journals 68
Pell, Russell 193
Perry, Darren inside cover
people *see* staff
performance
    reporting 121–2
    snapshot 5
    staff 110
pest fish management 56
Peters, Mal 194
Pfeiffer, Joanne 193
Phillips, Dr Emily 191
planning
    business 120–1
    corporate plan 121
    financial management *see* financial management
    highlights 120
    Joint Activities Taskforce, review 121
    key processes 120f
    project management framework 122
Policy and Planning Division 3, 4f
Portfolio Budget Statements 2013–14 23, 41, 62, 74
power consumption
    average daily use 200f
    energy use 200f
    reducing 200
privacy 106
procurement 124
    staff snapshot 127
project management framework 122
Public Governance, Performance and Accountability Act 2013 14, 16
publications 68
rainfall 82–4
    deciles 82f, 83f, 84f
Ramsay, Michelle 11, 194
records management 126
recruitment 114
recycling 200
regional wellbeing 31
remuneration 111, 112t, 113t
research
    aquatic ecosystem classification 72
    CSIRO 72
    eWater 72
    Murray-Darling Basin Futures (MDBfutures) 72
    Murray-Darling Freshwater Research Centre 72
    partnerships 71–2
    priority needs 71
resources
    agency resource statement 195–6t
restoring river and ecosystem health 40–59
    acid sulfate soils 55
    Basin-wide environmental monitoring 45
    challenges 40
    constraints management strategy 46–7

deliverables 41–3t
development proposal referrals 56
Finnley's great escape 56
highlights 40–1
key performance indicators 41–3t
our performance 41–3
overview 40
pest fish management 56
results 41–3t
river restoration, showcasing 57
salinity, managing 57–8
staff snapshots 59
water quality monitoring program 55–7
year ahead 40
results
knowledge into action 63t
managing River Murray assets 75t
restoring river and ecosystem health 41–3t
transboundary water management 23–4t
revenues 122
reviews and reports
Basin Officials Committee 191–2
Reynolds, Andrew 100
rice i
Rigney, Grant 193
Ringbalin – breaking the drought 37
risk management 101
Comcover 102
culture 102
plan 101
river management
Basin Officials Committee 191
River Management Division 3, 4f
River Murray assets, managing 74–96
challenges 74
deliverables 75t
highlights 74
key performance indicators 75t
our performance 74–5
overview 74
results 75t
year ahead 74
River Murray Operations
assets 15, 16
River Murray system
Lake Victoria 93
lower Lakes and barrage operation 93–4
mid-Murray 91–3
upper Murray 90–1
River Operations improvement team 94
river restoration, showcasing 57
role 2
royal spoonbill 37i
Run the river, a water sharing challenge 62, 67, 69
Ruppia tuberosa 51
salinity, managing 57–8
impact of management strategies 58f
review of management 58
salinity registers 58
salt interception 57
summary of levels 57t
salt export 12
salt interception schemes 95–6
performance reporting 95t
salt load diverted 96t
scientific names 205
Sea-to-Hume Fishway Program
completed 77–8
Sea-to-Hume navigable pass 13
Secretariat services 105
senior executive staff
remuneration 111, 112t, 113t
senior management committees 98–100
Audit Committee 100
Employee Consultative Committee 99–100
Executive Committee 98
Health and Safety Committee 99

Information Management Committee 98–9
Snowy Mountains Scheme
Murray component 89–90
South Australia
flow to 89
lower lakes and barrage operation 93–4
South Australian Riverland Floodplain Integrated Infrastructure Program 78
The Spillway 67
sponsorship 70–1
staff 4, 107–16
Australia Day achievement awards 111
cadet programs 115
coaching programs 110
disability 116
diversity 116
Employee Consultative Committee 99–100
Enterprise Agreement 112
equal employment opportunities 114t
graduate program 114–15
Health and Safety Committee 99
highlights 107
internal seminars 109
languages spoken 116
leadership 108–9
learning and development 108
manager as coach pilot training scheme 109
performance management 110
performance pay 111
profile 112–14
recruitment 114
remuneration 111, 112t, 113t
SES employee remuneration 111, 112t, 113t
services terms and conditions 111
snapshots 59, 127
statistics 112–14
toastmasters 127
trainee programs 115
work health and safety 99, 116–19
workforce planning 110–11
stakeholder consultation 12, 13, 14, 30, 44, 56, 66, 106, 109, 116, 121, 189, 193
state water
allocations 88
carryover 88
diversions 88
shares 87–8, 87t
Stewardson, Associate Professor Mike 194
Stewart, Councillor Donna 194
strategic alliances 70–2
international engagement 70
research partnerships 71–2
sponsorship 70–1
strategic planning and progress 3
superannuation 148
surface water issues 28
sustainability 199, 199t
Sustainability, Environment, Water, Population and Communities Portfolio 23, 41, 62, 74
sustainable diversion limit (SDL) adjustment 31–2
benchmark model 32
ecological elements 32
SDL Adjustment Assessment Committee 31, 32
sustainable diversion limits 26
Swirepik, Jody 19, 100
system-scale monitoring 53
Tan, Professor Poh-Ling 194
Todd, Ian 194
training and development 108
employee coaching program 110
executive coaching program 110
internal seminars 109
manager as coach pilot training scheme 109
trainee programs 115
transboundary water management 21–37
assurance 33–4

Basin Plan implementation 25–31
challenges 22
compliance 33–4
deliverables 23–4t
engagement 35–7
key performance indicators 23–4t
northern Basin *see* northern Basin
our performance 23–4
overview 22
results 23–4t
working with the states 34–5
year ahead 22
travel expenditure 201
Treweeke, Rory 35, 35i, 193
tribunals 105
Trickle Down 69
turtles i
tweets
year at a glance 8–11
2013 Theiss International Riverprize 8
United Nations World Water Day 10
upper Murray 90–1
vision 2
Walker, Dr Brian 194
Walsh MP, Hon. Peter 10, 77i, 189
Warne, George 18
Water Act 2007
directions under 107
water, delivering 82–95
active storage 86
agreed shares to states 82
environmental water 89
improving river operations 94–5
inflows 84–6, 85f
Menindee Lakes 87
rainfall 82–4
River Murray system, operating 90–4
Snowy Mountains Scheme 89–90
South Australia, flow to 89
state water allocations 88
state water carryover 88
state water diversions 88
state water shares 87–8, 87t
water diversions cap on 65
audit 65
water quality monitoring program 55–7
water resource planning 25, 28
water storage
July 2013 8
June 2014 11
water trade 29
risk assessment 34
waterbirds i
breeding, extending flows to benefit 50
watering, environmental *see* environmental watering
website 68
ICT management 126
Wilson, Jason 193
Wise, Geoff 194
work health and safety 99, 116–19
accident statistics 119t
Comcare investigations 118
Comcare premiums 118, 119f
communication and consultation 117
dangerous occurrence statistics 119t
executive commitment 116–17
initiatives 117
outcomes achieved 117
statistics, comparison of 118t
structure and oversight 116–17
workforce *see* staff
Yarrawonga River 9
Yarrawonga Weir 81, 91i
year at a glance 8–11

Published by the Murray–Darling Basin Authority

Postal address:
GPO Box 1801
Canberra ACT 2601

Office location:
Level 4
51 Allara Street
Canberra City ACT

Telephone:
02 6279 0100
international + 61 2 6279 0100

Facsimile: 02 6248 8053
international + 61 2 6248 8053

email: engagement@mdba.gov.au

Internet: www.mdba.gov.au

Please address any requests and inquiries to the:
Executive Director
Corporate and Business Services
MDBA
GPO Box 1801
Canberra ACT 2601

Electronic copies
of this annual report are available at www.mdba.gov.au

MDBA publication No. 34/14

ISSN 1003-6745
ISBN 978-1-925221-05-3 (print)
978-1-925221-04-6 (online)

Contact us
Ph: 02 6279 0100
+61 2 6279 0100 (Int)
email: engagement@mdba.gov.au
blog: freeflow.mdba.gov.au

www.mdba.gov.au