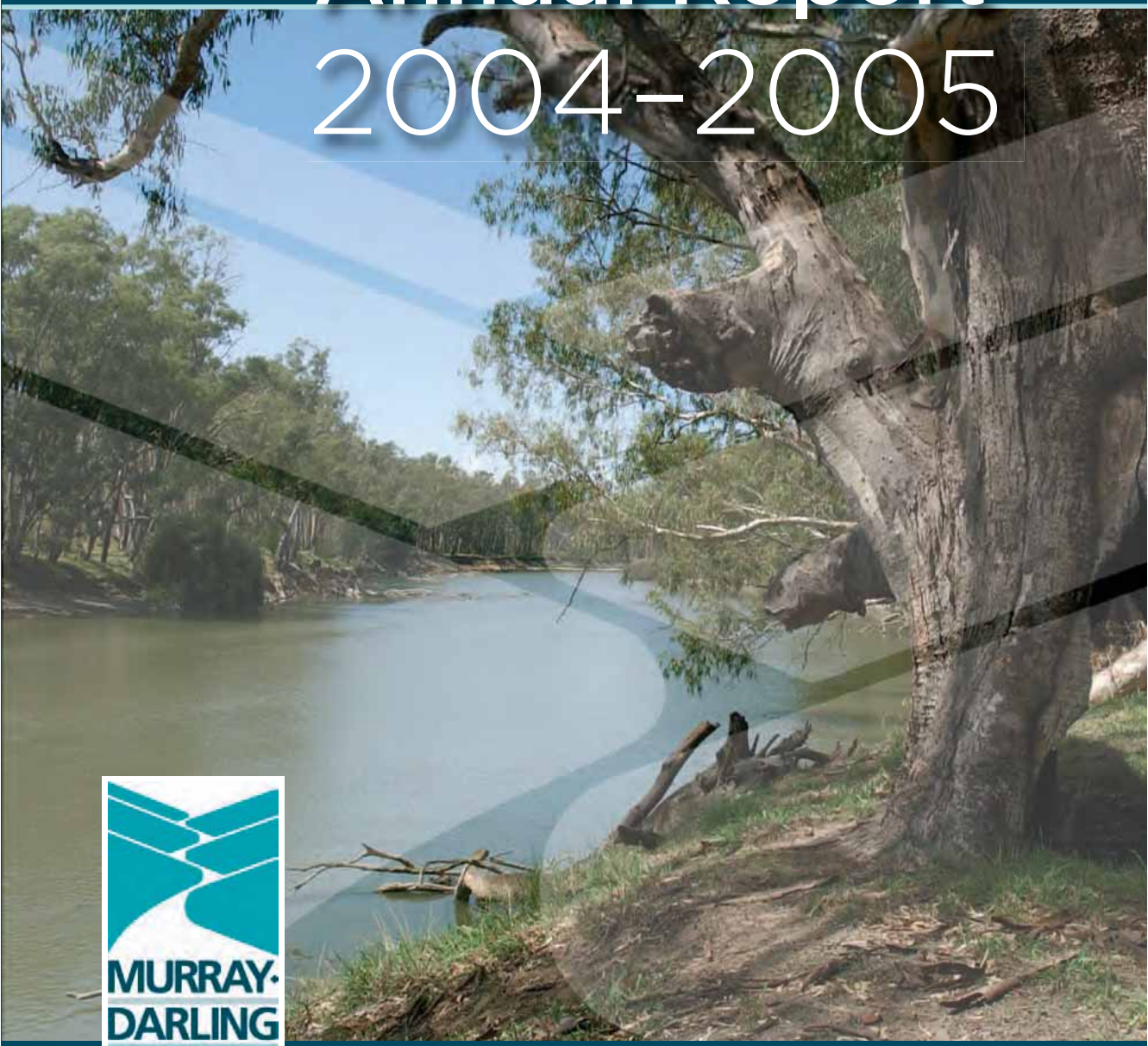
MURRAY-DARLING BASIN COMMISSION

Annual Report 2004–2005



MURRAY-DARLING BASIN COMMISSION

To the Parliaments of the Australian Government, New South Wales, Victoria, South Australia and Queensland; the Legislative Assembly of the Australian Capital Territory; and the Australian Community

This report includes the annual report of the Murray-Darling Basin Ministerial Council's Community Advisory Committee.

MURRAY–DARLING BASIN COMMISSION

Annual Report

2004–2005

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Office of the President

23 September 2005
The Hon Peter McGauran MP
Minister for Agriculture, Fisheries and Forestry
Parliament House
CANBERRA ACT 2600

Dear Minister

In accordance with clause 84(1) of the Murray-Darling Basin Agreement 1992, I submit our annual report and financial statements covering the year ended 30 June 2005 for tabling before the Parliaments of Australia, New South Wales, Victoria, South Australia and Queensland, and the Legislative Assembly of the Australian Capital Territory.

The past year has again seen drier than average conditions through the Basin. Ensuring maximum possible water to irrigators and communities yet having regard to the environment has been a major focus of activity.

Initial work has been undertaken in starting the implementation of The Living Murray initiative. While the drought will delay delivery of water it is important that the structures and processes are in place to maximise environmental outcomes, when we do have available water.

I commend the 2004–05 Annual Report to the five Parliaments and the Legislative Assembly, and I look forward to the partner governments' continuing support of the Murray-Darling Basin Initiative.

Yours sincerely

Ian Sinclair AC
President
Murray-Darling Basin Commission

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Part 2—*left-hand page header*: River Murray near Renmark, South Australia (left, Michael Bell) and Lake Hume–Murray Arm; Bethanga Bridge (right, Michael Bell); *right-hand page header*: Dredge operating at the Murray Mouth, South Australia (left, Michael Bell); The PS *Captain Sturt* navigating Lock 1, River Murray, 30 June 1921 (right, MDBC).

Part 3—*left-hand page header*: Resnagging site on River Murray below Yarrawonga weir (left, John McKenzie); Juvenile trout cod prior to release (right, Matthew Barwick); *right-hand page header*: Waggamba Landcare group from Goondiwindi Qld meeting at local farm (left, Arthur Mostead); Boggabilla Weir on the McIntyre River, Boggabilla NSW (centre, Arthur Mostead); Sheep grazing, Goulburn–Broken catchment, Victoria (right, Michael Bell).

Part 4—*left-hand page header*: Lucema, a hardy legume for stock feed, which has been grown in very dry conditions (left, Arthur Mostead); the Border Rivers area of NSW and Qld: large water storage dam for crop irrigation (right, Arthur Mostead); *right-hand page header*: Sunflowers on Point Farms near Darlington Point, NSW (left, Arthur Mostead); Native grass, harvested sorghum crop and farm buildings on the property Marolama, near Goondiwindi (right, Arthur Mostead).

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CAC Report—*left-hand page footer*: Boomi River in the early morning (left, Arthur Mostead); Native Fish Strategy Coordinator discussing native fish issues with the community (right, Janet Pritchard); *right-hand page footer*: Merino sheep and lambs at Dunoon, NSW (left, Arthur Mostead); Children learning local Indigenous history, Condamine catchment, Qld (centre, Arthur Mostead); Pittsworth on the Gore Highway between Toowoomba and Goondiwindi, Qld (right, Arthur Mostead).

Acknowledgments

The preparation of this report would not have been possible without the support and assistance of staff from the jurisdictions, in particular Stewart Chapman, Rebecca Curren, Gary Davis, Lamond Graham, Phil Heaphy, Andrew McIntosh, Andrew Putt and Graham Spangler.

The assistance of staff in the MDBC Office is also gratefully acknowledged, in particular the editorial committee: Jane Allen, Judith Brooks, Neville Garland, Charlotte Keller, Sam Leone, Tony Morse, Tanya Thomas, Claire Townsend and Sue Vize.

Abbreviations and acronyms

Agreement	1992 Murray-Darling Basin Agreement
AHD	Australian Height Datum
BSMS	Basin Salinity Management Strategy
BSMSIWG	Basin Salinity Management Strategy Implementation Working Group
CAC	Community Advisory Committee
Cap	Cap on water diversions
COAG	Council of Australian Governments
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CRC	Cooperative Research Centre
EC	electrical conductivity
EWMP	Environmental Works and Measures Program
GL	gigalitre
IAG	Independent Audit Group
IAP	Indigenous Action Plan
ICM	integrated catchment management
IGA	inter-governmental agreement
Initiative	Murray-Darling Basin Initiative
JGE	joint government enterprise
MDB	Murray-Darling Basin
MDBC	Murray-Darling Basin Commission
MDFRC	Murray-Darling Freshwater Research Centre
MIL	Murray Irrigation Limited
Ministerial Council	Murray-Darling Basin Ministerial Council
ML	megalitre
MLDRIN	Murray Lower Darling Rivers Indigenous Nations
NAP	National Action Plan for Salinity and Water Quality
NFS	Native Fish Strategy
NRM	natural resource management
NWI	National Water Initiative
OH&S	occupational health and safety
PMDS	Performance Management and Development System
RMW	River Murray Water
sq km	square kilometre
SRA	Sustainable Rivers Audit
TLM	The Living Murray
WCC	Workplace Consultative Committee

About this report

The Murray-Darling Basin Commission (MDBC) is a unique organisation, involving the Australian, New South Wales, Victorian, South Australian, Queensland and the Australian Capital Territory governments.

This report describes the objectives and significant achievements of the MDBC during the 2004–05 financial year. It is tabled before the parliaments of each jurisdiction through the Murray-Darling Basin Ministerial Council (Ministerial Council). This tabling process has been developed to meet the requirements of the 1992 Murray-Darling Basin Agreement (the Agreement), which has been incorporated into legislation and passed by the Australian Parliament and state parliaments that have jurisdiction in the Murray-Darling Basin (the Basin). The Australian Capital Territory's involvement is through a memorandum of understanding.

The MDBC undertakes activities at the direction of the Ministerial Council, and coordinates the efforts of the government partners to the Murray-Darling Basin Initiative (the Initiative)—the partnership between the governments and the community that has been established to give effect to the Agreement. It supports actions by communities and government within the Basin

This annual report focuses on those activities that the MDBC has carried out on behalf of the Ministerial Council in 2004–05. Information on the 2004–05 activities of the partners to the Initiative will be available through the partner governments' departmental annual reports, which should be available by early 2006.

The format of this annual report has changed from that of previous years. Activities are reported under functional areas and not according to Key Performance Areas. The previous reporting structure reflected a corporate plan that was revised during 2004–05. The current report structure reflects that of the new Strategic Plan.

This annual report also incorporates the annual report of the Ministerial Council's Community Advisory Committee, the primary community body advising the Ministerial Council on natural resource management issues in the Basin.

1

1. The year in review

(Photo: Michael Bell)

Lake Victoria, south western New South Wales near Wentworth, November 2004

From the Chief Executive

The last four years have produced the lowest inflow on record into the Murray River and this has challenged irrigators, communities and the environment.

Murray-Darling Basin Commission (MDBC) activities have been focused on maximising water delivery, starting the implementation of The Living Murray initiative and building up our program on evaluating risks to shared water resources. Coordination of MDBC activities under the National Water Initiative such as expanded interstate water trade was also a focus. The Sustainable Rivers Audit is completing the first full year of sampling and activities are ongoing in relation to Cap management, salinity and native fish strategies. The Commission continued dredging of the Murray Mouth in the face of the continuing drought.

To ensure that the Commission and Commission office work program is focused to achieve the Murray-Darling Basin Agreement and Ministerial Council decisions, the Commission has been developing a five-year Strategic Plan, which is almost complete. In addition, we are developing a Business Improvement Program for the Commission Office. We have also commenced a major program review, consistent with the Strategic Plan, to ensure the financial transparency of our budget process.

A reorganisation of the MDBC Office structure has occurred to focus on the current Ministerial Council priorities: The Living Murray initiative, water policy coordination and implementation of agreed strategies. Communications has been separated out of the Natural Resource Management Division and senior positions in Natural Resource management have been filled.

The year has been one of significant change for the organisation. I would like to acknowledge the support of the President, Commissioners and particularly the staff of the organisation whose professionalism and commitment are outstanding. I would also like to thank David Dole, Scott Keyworth and Louise Rose for their support during the transition.

I am looking forward to 2005–06 which I believe will be a period of consolidation and progress.

Wendy Craik
Chief Executive

Overview

The 2004–05 reporting year has been dominated by the **extremely dry conditions in south-eastern Australia**. Storages across the Basin are at very low levels because of the absence of good inflows to major river systems. For the first time, the Basin is subject to the full impact of both an extended period of drought and highly regulated and utilised river systems. We have experienced these impacts separately in the past – in river regulation and increasing diversions since the 1970s and long drought periods in the 1890s and 1940s – but now they are occurring together.

The outlook for the total system in the Murray-Darling Basin for 2005–06 indicates that, even under average conditions, the **volumes in storage are likely to remain well below average levels**. The absence of small floods under the combined effect of regulation and drought over the past eight years is sobering. Such floods are critical to the health of the wetlands, lakes, floodplains and estuarine ecosystems. The number of stressed or dying River red gum and Black box trees across the lower Murray floodplain reflects this. The proportion of trees surveyed that were considered stressed has risen from an already high level of 50 per cent to 75 per cent over the last two years. Since October 2002 the Commission has been funding a program of dredging at the Murray Mouth to ensure it remains open.

Within this context, the **National Water Initiative** (NWI), agreed at the Council of Australian Governments (COAG), in June 2004 is of enormous significance. It builds on the 1994 COAG agreement on water reform. Associated with NWI, the Murray-Darling Basin Intergovernmental Agreement (MDB IGA) sets out arrangements for investing $500 million over five years to achieve environmental outcomes at six significant sites along the Murray (The Living Murray First Step). This agreement was signed, also in 2004, by the Prime Minister, the premiers of New South Wales, Victoria and South Australia and the Chief Minister of the Australian Capital Territory.

During the year, **The Living Murray Business Plan** was approved and activated and, along with it, strategies to implement the actions and milestones in the Murray-Darling Basin Intergovernmental Agreement. The investment of $500 million is in addition to $150 million for the **Environmental Works**

and Measures Program (EWMP) provided through the Murray-Darling Basin Ministerial Council.

In 2004–05, the EWMP moved into its second year of operation, with 31 projects implemented across the six significant ecological assets identified under the First Step Decision of Council in November 2003. By June 2005, the program had spent $18.4 million on a wide range of activities (see pages 56 to 59).

The Environmental Delivery Team, under the direction of the Environmental Watering Group, developed the River Murray Channel Environmental Management Plan for 2005–06 for one of The Living Murray's six significant ecological assets. In addition, the team produced The Living Murray Environmental Watering Plan for 2005–06, which will coordinate water delivery across all of The Living Murray's significant ecological assets. The team continued to work with River Murray Water Production to identify and manage **environmental watering opportunities** across the River Murray system to meet the objectives of The Living Murray.

Murray Mouth and Coorong, one of The Living Murray significant ecological assets

(Photo: Michael Bell)

The Murray Flow Assessment Tool (MFAT) is a key element in evaluating how effective these measures are. Visitors to the **Inside MFAT** website, launched on 25 October 2004, can now discover how the tool works and view the scientific information on which it is based.

As part of efforts to support the First Step Decision, the MDBC this year consulted with its government partners on the factors that could have an impact on the flow and quality of shared water resources in the Basin. The key factors are:

- climate change (and variability)
- groundwater use
- bushfires
- reforestation
- farm dams
- reduced return flows from irrigation.

The MDBC has undertaken research projects, reviews of information, and investigations throughout the year to respond to these factors (see pages 61 to 63).

The MDBC's pilot **Interstate Water Trading Project**, which aims to allow irrigators and the environment to maximise the returns gained from available water in the River Murray system, has continued. Partner governments to the COAG National Water Initiative have agreed to expand permanent interstate trade (subject to environmental and third-party impacts). The MDBC partners are facilitating this process within the Basin by developing the technical and operational mechanisms necessary to allow exchange between water entitlements on an interim basis in the southern interconnected Basin. (see page 64)

Independent monitoring of the **Cap**—compliance with the targets that limit surface water diversions—continued in 2004–05 (see pages 65 to 67). An independent audit of the combined Barwon–Darling/Lower Darling Valley of New South Wales completed in 2005 found the valley in breach of the Cap. As a result, New South Wales will report to the Ministerial Council meeting in September 2005 on the reasons for this.

The Independent Audit Group provided qualified support for the NSW proposal to introduce new arrangements for the Barwon–Darling to apply for 2005–06.

Another audit, this time of the Cap data management system of the states and the Commission office, identified scope for improving the accuracy of measurements from river off-takes and of the Cap reporting system.

Salinity management was a major area of successful MDBC activity in 2004–05. The second independent salinity audit in November 2004 identified significant progress in measures such as establishing baseline conditions, setting end-of-valley targets and developing approaches to evaluating the impacts of water trade (see pages 68 to 79).

Salinity levels in the River Murray, with the exception of the Lower Lakes, were very low during 2004–05. This was due to a number of factors, including a high proportion of flows sourced from Hume and Dartmouth storages and low levels of saline groundwater inflows from the Mallee and Riverina plains.

An important part of salinity management is keeping salt out of the rivers. River Murray Water operates seven jointly funded salinity mitigation schemes along the banks of the Murray River. During 2004–05 the schemes continued to significantly reduce impacts of saline groundwater on downstream salinity. Significant progress was made in the construction of joint salt interception schemes, including the Pyramid Creek, Buronga, Bookpurnong and Loxton schemes.

The **Sustainable Rivers Audit** (SRA), a river health assessment program that aims to provide consistent, Basin-wide information on the health of the Basin's rivers, achieved important milestones in 2004–05. These included:

- finalisation of the program design
- establishment of governance structures
- initiation of a joint monitoring effort, using consistent methods, across Queensland, New South Wales, Victoria, South Australia and the Australian Capital Territory (see pages 79 to 81).

During the past year, **new fishways** at Locks 8 and 9 and two trial fishways at Tauwitchere Barrage were completed. Investigative work continued on a number of innovative projects designed to improve the effectiveness and cost efficiency of future fishways, such as trials with dual-frequency sonar technology and radio-tagging fish to determine their movement after exiting the fish lock at Yarrawonga.

The monitoring of fish passages at Locks and Weirs 7 and 8 continued to show encouraging signs, with target type and size of species achieving passage. An unforeseen benefit was the discovery that some species that were not previously thought to be migratory are using or attempting to use the fishway (see page 41).

The then Deputy Prime Minister, the Hon John Anderson MP, at the 2004 Narrabri River Health Conference

(Photo: Firestarter)

The **Indigenous Action Plan** (IAP) project team finalised a series of Nation-based forums and continues to work closely with the Murray Lower Darling Rivers Indigenous Nations (MLDRIN). The team also established a relationship with Indigenous groups in the northern Basin (see page 86).

The MDBC **Basin Communities Program**, together with the Commonwealth Scientific and Industrial Research Organisation (CSIRO), completed a major study on quantifying and valuing land use change in the Murray-Darling Basin. The study trialled a new, more cost-effective way of using remote sensing to estimate land and water use in the Basin (see pages 87 to 89).

The education and capacity of the Basin's future land and waters managers has continued to be addressed by a number of successful **education projects**. 'Special Forever', which celebrated its thirteenth year, involves more than 20 000 primary school children across the Basin who write, draw and learn about their local natural resources. The reporting year also saw the continuation of a project that involves youth teaching other youth about natural resource issues, with two successful youth conferences being held in Toowoomba and Narrabri.

Works continued under the 2002 River Management Plan for the Hume to Yarrawonga reach of the River Murray to help balance water conveyance, economic production and environmental objectives (see page 30).

Significant progress continued in 2004–05 towards purchasing flood easements along the Murray to confirm the Commission's rights to pass regulated flows within existing channel capacity on up to 106 affected properties in the Hume to Yarrawonga reach.

In a formal ceremony in April 2005, Engineers Australia presented plaques for Dartmouth Dam and Hume Dam, naming them **National Engineering Landmarks**. This is the highest category of recognition for engineering structures awarded by Engineers Australia (see page 35).

Operational and safety improvements to **River Murray Water assets** during 2004–05 included the installation of walkways at Dartmouth Dam; installation of remote operated gates at the Barrages; completion of an upgrade of the navigable pass and construction of a fishway at Lock and Weir 9; and minor finishing-off works at Locks and Weirs 7 and 8 (see page 34 to 43).

The Commission partnership

The Commission concentrates on Basin-wide issues that require joint action to deliver the best outcomes for the Basin's communities, industries and natural resources base – particularly in relation to its shared water resources. The Commission, as a partnership of the six Basin governments (including the Australian Government), exists to achieve the best integrated catchment management outcomes for the shared environmental resources of the Basin. Primary responsibility for managing land and water resources lies with individual state and territory governments.

Figures 1.1 and 1.2 show, for each of the partner states and territories, the proportion of each as part of the Basin and the proportion of each that lies within the Basin.

Figure 1.1: Proportion of Murray-Darling Basin in state

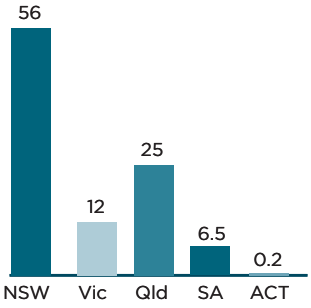
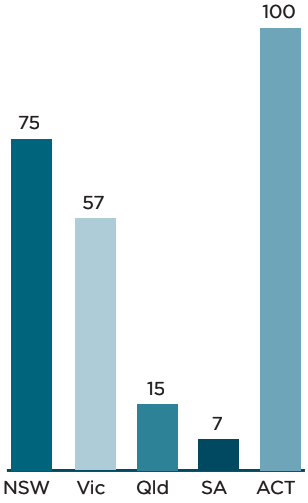


Figure 1.2: Proportion of state in Murray-Darling Basin



Chaired by an independent President, the Commission is an unincorporated joint venture, comprising representatives (Commissioners) appointed by partner governments. The Commission supports the Murray-Darling Basin Ministerial Council to achieve its purposes under the Agreement by:

- securing the cooperation of partner governments
- delegating work to its committees and working groups, whose members include Commissioners and experts from partner government agencies, research bodies, industries and communities
- directing the activities of the Commission Office.
- In addition to servicing the Ministerial Council directly, the Chair and Deputy Chair of the MDBMC Community Advisory Committee also provide a community perspective to the Commission.

The Commission Office provides a secretariat that gives administrative, technical and river operations, and policy support to the Commission, the Ministerial Council and the Community Advisory Committee.

The primary clients of the Commission Office are the partner governments and their agencies. Commission Office staff work with them to facilitate and coordinate the development, implementation and review of Ministerial Council policies and decisions.

Since the signing of the Agreement in 1992, governments have effected significant reforms in the management of natural resources. As a result, the institutional landscape in which the Commission operates has changed substantially. A wide range of organisations now contributes to improving natural resource outcomes for the Basin.

In recent years, partner governments have created and strengthened the role of regional catchment management organisations (CMOs), which have taken on an increasingly important role in managing land and water resources. While the role and responsibilities of CMOs vary across the Basin, all have a vital role to play in implementing Council and Commission policies and decisions at a local level. The working relationship between the Commission Office and CMOs varies depending on the nature of the program being delivered and the particular role of the CMO.

To minimise duplication and ensure coordinated natural resource management in the Basin, the Commission Office, together with the partner government agencies, also works cooperatively with joint government enterprises such as 'Water for Rivers' and Snowy Hydro Ltd; irrigation and water businesses; industry and environmental bodies; research bodies; local governments; and community groups – including Indigenous groups.

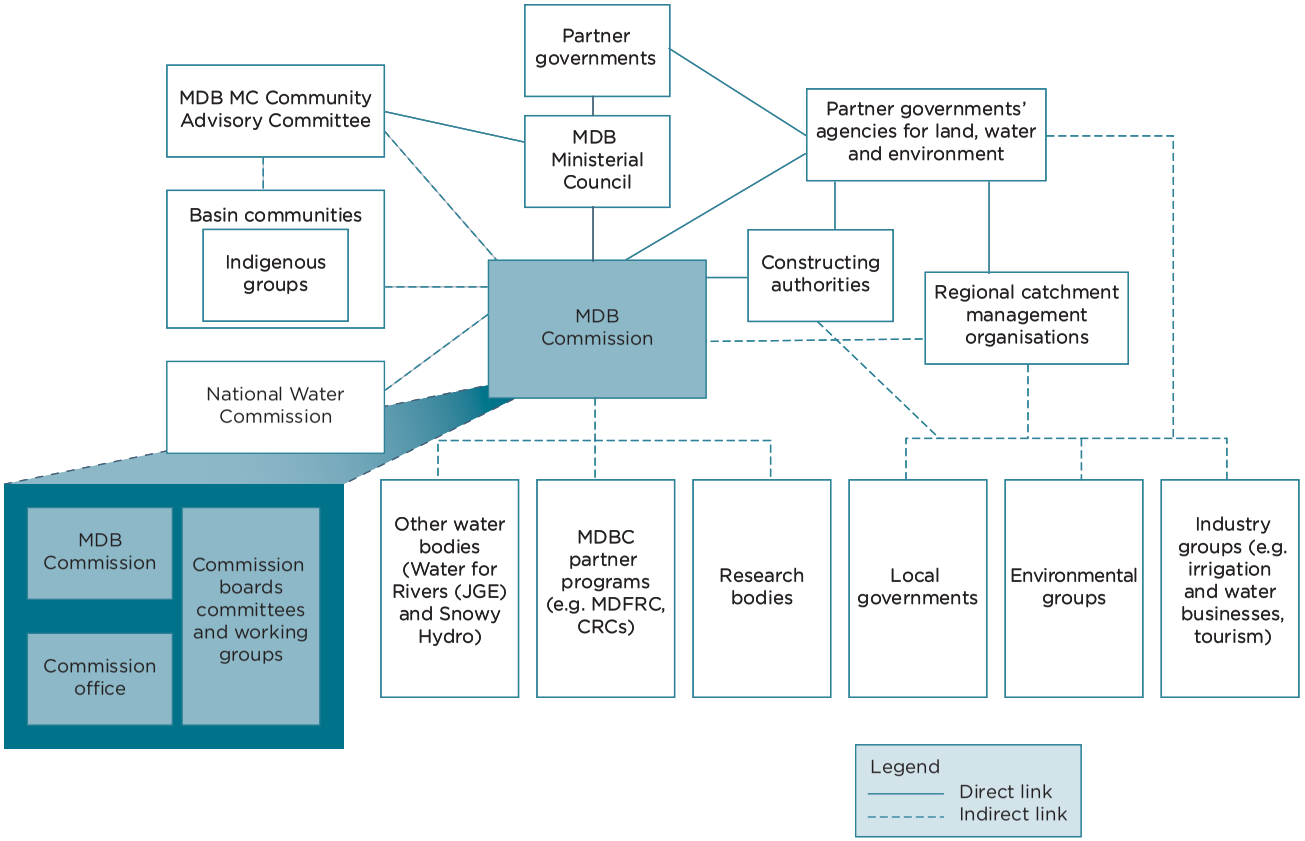
Ministerial Council programs and decisions in the Basin are delivered in accordance with national agreements and policies, particularly the National Water Initiative (NWI). For example, the MDBC and its Office will play a key role in facilitating the implementation of expanded interstate water trade under the NWI. The Commission will also be an important source of technical input to the activities of the National Water Commission.

Dareton on the River Murray, November 2004

(Photo: Michael Bell)

The relationship between the Commission and the bodies with which it collaborates is shown in Figure 1.3.

Figure 1.3 – Murray-Darling Basin Commission and its partners



Looking ahead

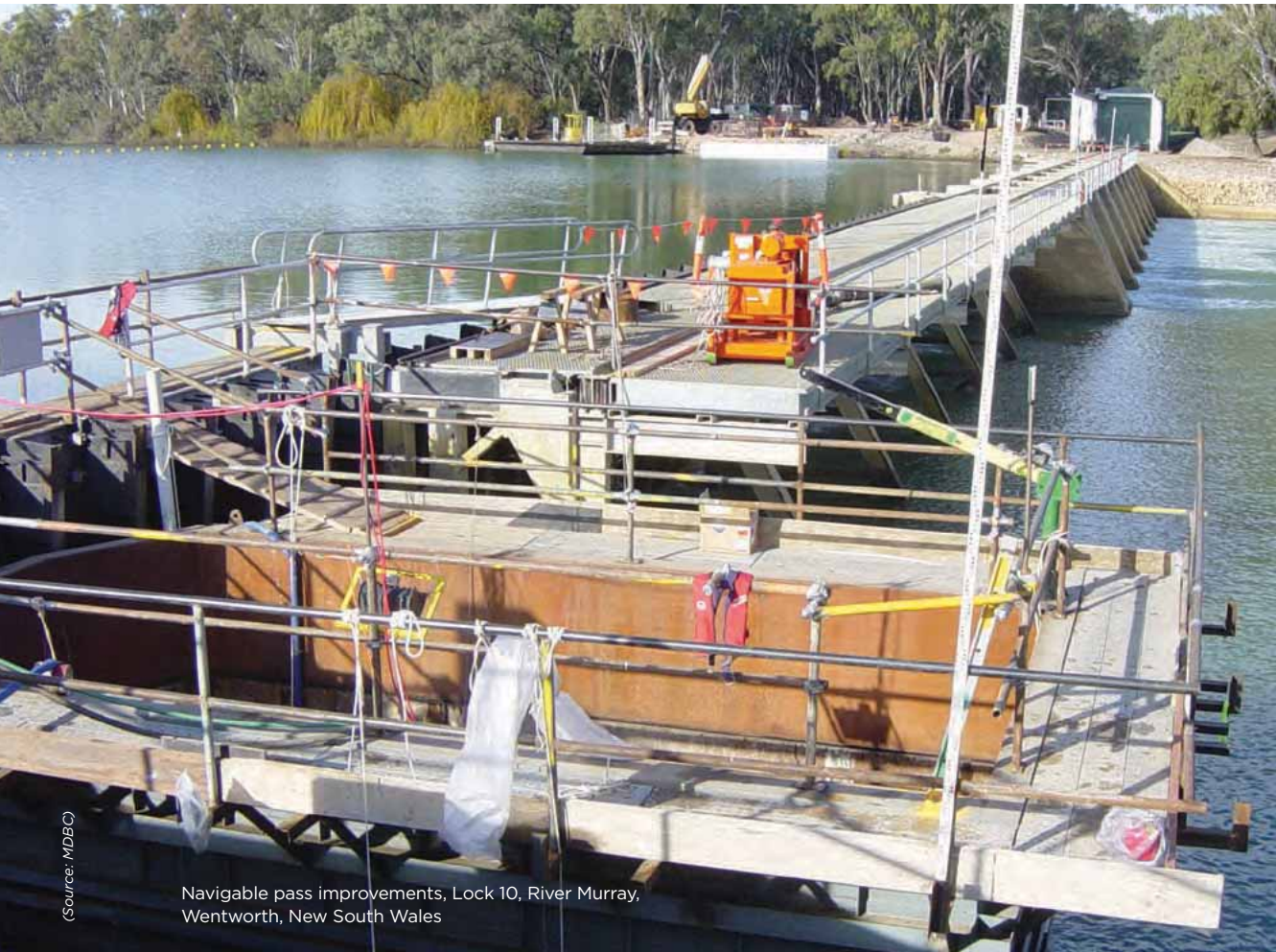
Despite the significant impacts of one of the worst droughts ever experienced in the Murray-Darling Basin, there continues to be a concerted commitment to the long-term management of the Basin's natural resources. The diversity of these resources demands that the MDBC, through contributing governments and communities, continue to undertake a wide range of activities. A new MDBC strategic plan was developed in 2004–05. This plan will form the basis for Commission activities over the next five years.

The Commission is firmly committed to the long-term management of the Basin's natural resources...

(Photo: Arthur Mostead)

2

2. River Murray Water



(Source: MDBC)

Navigable pass improvements, Lock 10, River Murray, Wentworth, New South Wales


Strategic directions

Water Management – the River Murray system

River Murray Water (RMW) was established by Ministerial Council as the Commission's internal water division, in response to the 1994 water reform principles of the Council of Australian Governments (COAG).

The establishment of River Murray Water within the terms of the existing Agreement achieved a separation between water service delivery and resource management functions. At the same time, the capacity was retained for joint action to achieve Basin-wide values.

The Commission has established and progressively implemented a River Murray Environmental Management Branch within the Natural Resource Management Division. The close linkages that have been formed between this branch and RMW have been an essential element in achieving enhanced environmental outcomes for the River Murray.

The Ministerial Council has previously approved, in principle, amendments to the Agreement to enable:

- the establishment and management of renewals annuities for replacing of assets and also for major cyclic maintenance
- cost-sharing arrangements between governments to be varied from time to time based on price-for-service principles
- re-allocation of responsibility for River Murray structures from one constructing authority to another, subject to agreement by the Ministerial Council
- amendments by the Ministerial Council, from time to time, of expenditure approval thresholds.

These proposed amendments have been referred to partner governments for consideration and implementation. As a package of amendments they will, if adopted, effectively complete the asset management and financial reforms recommended by COAG in 1994.

During 2004–05 the Australian Government and the Victorian Government completed arrangements for the enabling legislation to be considered by their parliaments. The governments of New South Wales and South Australia have

yet to finalise their consideration of the proposed amendments and the draft enabling legislation.

The impacts of prolonged drought have continued to be felt throughout the River Murray system through 2004–05, with restricted allocations to irrigators in New South Wales, Victoria and South Australia.

In managing the shared water resource for the partner governments the RMW Production Team has focused both on 'not wasting a drop' and 'doing the best it can with water available to the environment'. The creation of environmental management assets and the recovery of environmental water entitlements under The Living Murray Initiative is progressing and will assist the delivery of enhanced environmental outcomes in the future.

In 2004–05 major works have been directed at:

- reducing OH&S risks
- extending the life of aged infrastructure
- constructing new salt interception schemes
- constructing new assets for environmental delivery.

Water resources management

The water resources of the River Murray system (see Figure 2.1) are used for a wide range of beneficial purposes. In addition to its inherent natural value to riverine, floodplain and estuarine ecosystems, it is used for irrigation, industrial and domestic water supplies, navigation, recreation, and the generation of hydro-electricity.

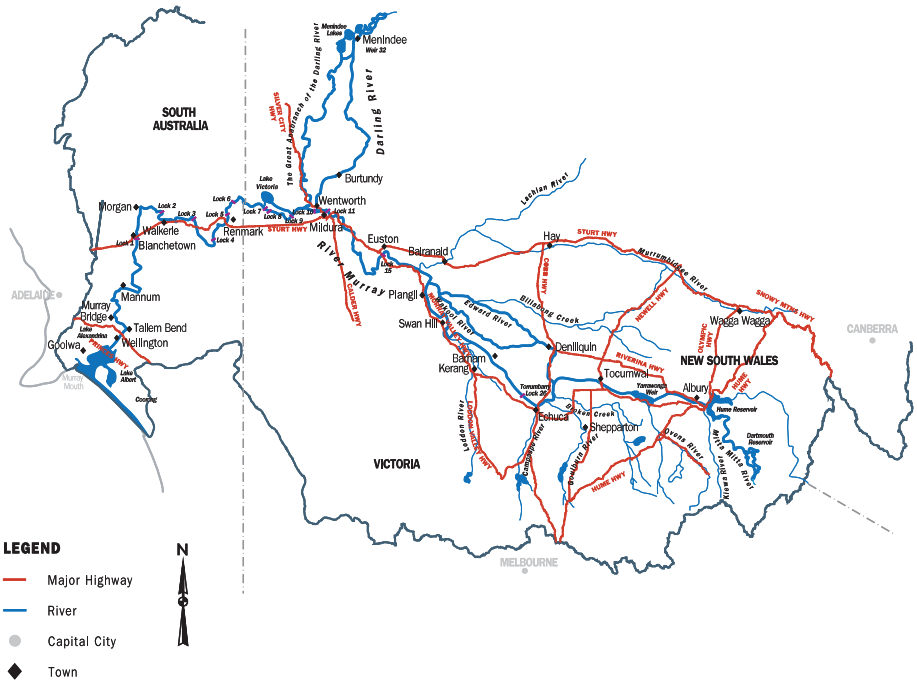
RMW manages the river system to ensure that the available water is documented in the water accounts and distributed to South Australia, Victoria and New South Wales in accordance with the Agreement.

RMW undertakes the tasks of sharing and supplying water through:

- assessing future availability of water
- accounting for actual use of water
- regulating river flows to meet environmental and user needs.

As in the previous two seasons, low water reserves and below average inflows in 2004–05 again resulted in low irrigation allocations along the River Murray system.

Figure 2.1: The River Murray system

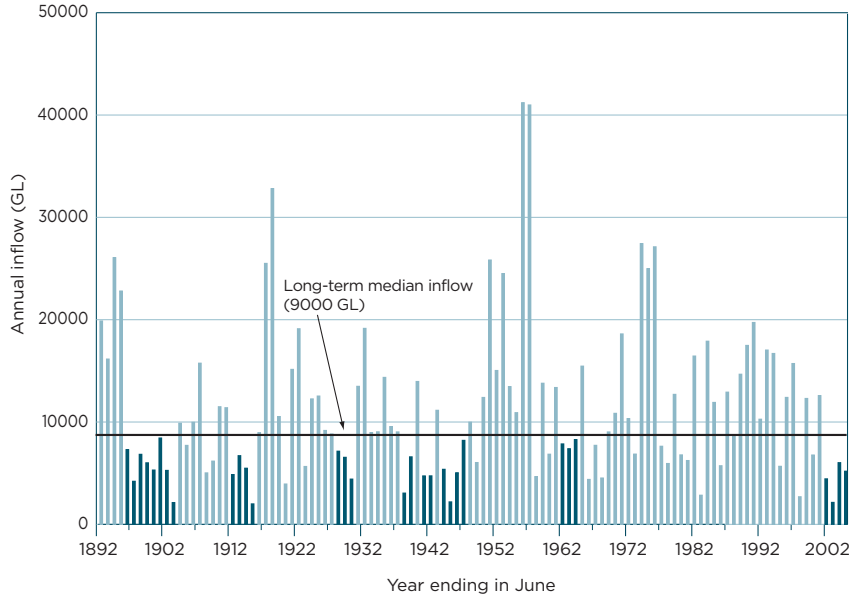


Water availability

2004–05 was another year of low inflows and reservoir storage levels. In terms of inflows to the River Murray system, the current drought period is one of the most severe since records began. The drought has impacted on the environment, irrigation and local communities.

Whilst there have been more prolonged droughts during the 1890s and 1940s, the last four years have seen the lowest River Murray system inflows on record. Figure 2.2 illustrates the current drought period compared with historical droughts.

Figure 2.2: River Murray system inflows with extended drought periods highlighted



The extended nature of the drought means that River Murray system water reserves have been significantly depleted and water users are virtually living from year to year. In 2004–05, most irrigators experienced a third year with less than full allocations. The pressure on irrigation communities has been immense. Large volumes of water have been traded to support high-value industries, and commercial arrangements have been made for the advance of additional water purchased from Snowy Hydro.

The volume of water under Commission control at the start of 2004–05 was low (2450 GL or 26 per cent of active storage). Inflows to headwater storages improved over some of the spring and summer months, providing increased storage levels, while unusually heavy rainfall in early February 2005 gave welcome late-season inflows. River Murray inflows for the year totalled about 4900 GL—little more than half the average annual inflow—which put the year among the driest 20 per cent on record.

A flow event in the Darling catchment in early January raised storage in Menindee Lakes by approximately 220 GL, to a total of 440 GL. The security of water to regional water users, including at Broken Hill, increased, and the lakes remained under NSW control throughout 2004–05.

MDBC storage at the end of 2004–05 was 3000 GL, some 550 GL higher than at the start of the season.

State shares of water held in Commission storages at the beginning and end of 2004–05 are shown in Table 2.1.

Table 2.1: Water accounts for New South Wales and Victoria, 2004–05 (GL)

Storage location	Storage at 30 June 2004				Storage at 30 June 2005			
	NSW	Vic	Total	Out of balance	NSW	Vic	Total	Out of balance
Dartmouth Reservoir	618	1272	1889	654	518	1230	1748	713
Hume Reservoir	149	159	307	10	457	457	913	0
Lake Victoria	132	124	256	-8	78	267	345	189
Menindee Lakes*	–	–	–	–	–	–	–	–
Total	898	1555	2453	657	1052	1954	3006	902

Notes:

* Menindee Lakes has been in NSW control since mid March 2002, and the resource will not become available to the MDBC until the storage next exceeds 640 GL.

Accounts are based on the best available data, which may contain some unverified operational data. Figures are rounded to the nearest GL.

Data relate to gross storage.

The 'out of balance' figure reflects the volume of stored water accounted to Victoria, minus the volume of stored water accounted to New South Wales.

Figures may differ from those reported in the 2003–04 annual report due to the substitution of verified data.

State irrigation allocations

Water resource availability for New South Wales, Victoria and South Australia in 2004–05 was again constrained by low inflows, with water allocations in all states at low levels. The irrigation allocations for the three states are summarised below.

Victoria

The initial level of allocation in Victoria for the Murray was 46 per cent of Water Right and 46 per cent of Licensed Volume for private diverters. As conditions and inflows improved during the irrigation season, the allocation level increased to 100 per cent of Water Right and 100 per cent of Licensed Volume, with no Sales Water available.

Victoria again borrowed water from the Barmah–Millewa Forest environmental water account to improve allocation levels earlier in the season, with all of the 175 GL borrowed repaid during the year.

This year was the second consecutive season where Victorian allocations were limited to 100 per cent. Victoria increased its storage reserves over the year to increase its chance of achieving 100 per cent of Water Right in the following season.

New South Wales

The opening irrigation allocation in 2004–05 was constrained to zero per cent for General Security and 97 per cent for High Security. As conditions improved over 2004–05, some Supplementary Water Access was declared by New South Wales and the General Security allocation increased to 49 per cent.

New South Wales again borrowed water from the Barmah–Millewa Forest environmental water account, with 225 GL owing at the end of the year. The Commission noted this arrangement, whereby water was temporarily borrowed beyond normal payback arrangements, allowing allocations to rise to 49 per cent.

As it did last season, Murray Irrigation Limited (MIL) negotiated an advance of water (107.5 GL) from the Snowy Scheme to increase supplies to water users. The MDBC agreed to this arrangement on the basis that the water would be accounted as fully New South Wales with no impact on Victoria and South Australia's water availability, and that it would be paid back when NSW General Security allocations next reached 50 per cent. General Security allocations reached 49 per cent in 2004–05. NSW also repaid in 2004–05 the remaining 49 GL of Snowy water advanced in 2002–03.

South Australia

In 2004–05 South Australia experienced its second consecutive year with announced availability less than full allocation. In response to the ongoing


drought conditions, South Australia announced an initial level of authorised use for River Murray water users at 70 per cent of licensed allocation.

Improvements in River Murray water availability over the season, combined with good inflows into the lower lakes from the Mount Lofty Ranges, allowed the authorised level of water use to be raised to 90 per cent in September 2004, and 95 per cent in January 2005. Although additional water became available, SA Water voluntarily agreed to reduced authorised use of water for 2004–05: the metropolitan Adelaide licence was restricted to 136 GL and country towns to 40 GL.

State irrigation diversions

State diversions from the River Murray and lower Darling River are summarised in Table 2.2. Diversions this season were of the same order of magnitude as diversions in 2003–04.

Table 2.2: Summary of state diversions (GL)

Year	River Murray*				Darling§
	NSW	Vic	SA	Total	NSW
1991–92	2431‡	1827	589	4847	101
1992–93	1633	1147	482	3262	77
1993–94	1902	1407	587	3896	158
1994–95	2254	1970	663	4887	54
1995–96	1935	1740	568	4243	168
1996–97	2231	1745	600	4576	136
1997–98	1886	1696	664	4246	71
1998–99	2000	1766	690	4456	192
1999–00	1234	1522	642	3398	85
2000–01	2070	1682	662	4414	246
2001–02	2113	1884	621	4618	126
2002–03	879	1701	737	3317	107
2003–04	1312	1442	612	3366	23
2004–05†	1258	1418	618	3294	26

* Data based upon the official MDBC record for the reporting requirements of implementation of the 'Cap' on diversions, with the exception of data for 2004–05.

† Data presented for 2004–05 is estimated based on hydrographic and operational data, and advice from the SA Department of Water, Land and Biodiversity Conservation.

‡ Record high diversion.

§ Includes data from Cawndilla Outlet to the Great Darling Anabranch.

Water trade

The trading of water across the River Murray System followed similar patterns to those observed in 2003–04. Low initial authorised use levels in South Australia saw about 9 GL of water traded temporarily into South Australia early in the season. There was a net trade of about 11 GL to upstream states late in the season.

Net trade between the Murrumbidgee and Murray valleys was near to balanced and RMW did not call on water from the Murrumbidgee Valley account this year. There was significant trade activity again this season between the Goulburn and Murray valleys. RMW called about 50 GL of water from the Goulburn Valley account and, after consultation with Victoria, elected to leave a further 60 GL in the account to be called upon during 2005–06.

RMW adjusted state water shares and deliveries to take account of permanent trade (cumulative to June 2004 from the start of the Pilot Interstate Water Trading Project in 1998), and carried over trade adjustments from late in 2003–04 and temporary trade during 2004–05. Total net adjustments made to water accounts were 1.7 GL from Victoria to New South Wales, 1.3 GL from South Australia to New South Wales and 15 GL from Victoria to South Australia.

Flow to South Australia

A total of 1880 GL flowed into South Australia, comprising 1850 GL of entitlement flow, 15 GL surplus flow and 15 GL traded water. The flow received in 2004–05 was significantly lower than the median annual flow of 4800 GL, and also less than that received in 2003–04 (2023 GL).

Operation of storages

The MDBC opening storage for 2004–05 was low, at 2450 GL (26 per cent capacity). This was about 450 GL higher than at the start of 2003–04—most of this improvement was held in Dartmouth Reservoir.

Most of the opening storage was held in Dartmouth Reservoir (1890 GL), as in recent years. Good spring rains boosted inflows into both Dartmouth and Hume reservoirs, delaying the start of water transfers from Dartmouth Reservoir

to Hume Reservoir. The volume transferred over 2004–05 was about 750 GL, compared to only 200 GL in 2003–04. Dartmouth storage did not recover past its opening storage, and at the end of June 2005 was 1750 GL, or 45 per cent capacity.

Storage in Hume Reservoir reached 1650 GL (54 per cent of capacity) during late November 2004 compared to a peak storage of 2220 GL (73 per cent of capacity) in November 2003. At the end of the season, the storage was 600 GL higher than at the end of the previous season due to early winter inflows and because diversions late in the season were lower than expected.

Transfers of water from Hume Reservoir to Lake Victoria began much earlier this season compared to last season. These transfers were carefully managed over the season with the aim of drawing down storage in Lake Victoria to a low level by the end of the season, whilst ensuring the continued supply of South Australia's entitlement flow. Further details regarding the operation of Lake Victoria are provided below.

Hume Reservoir, November 2004

(Photo: Michael Bell)

Heavy February rainfall produced high unregulated inflows from the Kiewa and Ovens catchments, and South Australia received 1.3 GL above its entitlement flow in February 2005 due to inlet capacity constraints at the Lake Victoria regulator.

Storage in Menindee Lakes at the beginning of July 2004 was very low, at 330 GL (19 per cent capacity). The lakes remained in NSW control in accordance with the Agreement—this provision allows New South Wales to manage a 'drought reserve' to meet the needs for irrigation, stock, domestic and town water supply (including Broken Hill) in the lower Darling River and Darling Anabranch.

Inflows to Menindee Lakes remained extremely low during the first half of 2004–05. However heavy rainfall (up to 300 mm) in the Darling catchment during late December 2004 and early January 2005 brought some relief. The flow in the Darling River at Bourke peaked at about 30 000 ML/day in early January 2005. This event boosted storage levels in Menindee Lakes by about 230 GL, to 440 GL (or 25 per cent capacity). By the end of June 2005, the storage was drawn down to 330 GL, which was about the same as at the start of the year.

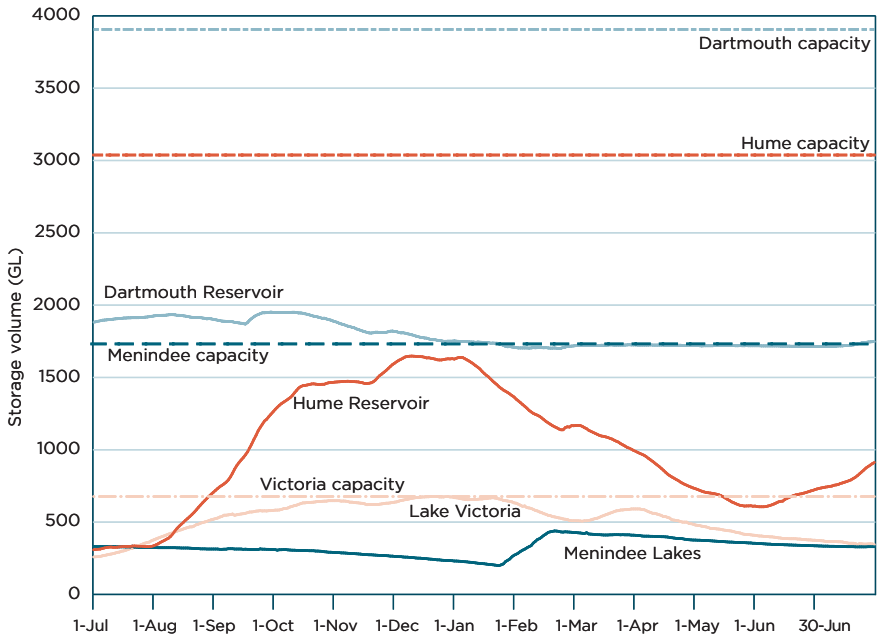
Menindee Lakes, western New South Wales

(Photo: Michael Bell)

By the end of June 2005, MDBC storage was about 3000 GL (32 per cent capacity) and about 550 GL higher than at the start of the season. This slightly improved the water resource outlook for the following season, compared with this season.

Storage behaviour resulting from the operation of MDBC's four major storages is shown in Figure 2.3.

Figure 2.3: Storage behaviour resulting from inflow and RMW's operation of the MDBC storages



At the end of the 2003–04 irrigation season, Lake Victoria held just 200 GL or 30 per cent capacity. Transfers from Hume to Lake Victoria again started early in the 2004–05 season as a result of dry conditions and low inflows from tributaries downstream of Hume Dam. A total of 321 GL was transferred from May to July 2004 before transfers were temporarily halted in August as a result of rainfall and the prospects for improved inflows.

The operational level (measured as height above mean sea level) of Lake Victoria is crucial for restoration of the environment and preservation of cultural heritage. Unregulated inflows from tributaries downstream of Hume Dam during August and September resulted in the Lake Victoria storage refilling to 26.76 metres (96 per cent capacity) by 17 October 2004. Further inflows and a reduction in irrigation demand during early November caused Lake Victoria to reach 27 metres (100 per cent capacity) on 4 December 2004.

Storage in Lake Victoria then fell until mid February, when heavy rain in the Ovens River, combined with 'rain rejection' of ordered irrigation water, caused lower Murray flows to increase. Approximately 80 GL was harvested in Lake Victoria, raising storage to 26.28 metres by 8 March. This operation was significant in that it was the first time that RMW had been in a position to harvest water in Lake Victoria above the drawdown targets detailed in the Lake Victoria Operating Strategy since it was formally adopted in 2002.

The strategy provides for water to be stored in Lake Victoria above the desired autumn drawdown targets when either NSW reserves are forecast to fall below 1000 GL (NSW reserves are usually lower than Victorian reserves, which have a more conservative threshold), or when Menindee Lakes are in NSW control. Both of these conditions were satisfied during autumn 2005.

Dry conditions during the remainder of autumn 2005 resulted in Lake Victoria storage falling to 24.70 metres by the end of April. This falls within the strategy's drawdown target of 24.50 metres by the end of April. Lake Victoria storage continued to fall during May and June 2005 to 24 metres as a result of dry conditions. The autumn 2005 drying phase is not expected to be detrimental to vegetation on the lake foreshore.

Lake Victoria foreshore vegetation

(Photos: Ian Sluiter, Ogyris Pty Ltd)

The photo sequence shown above illustrates a vegetation monitoring site in 1998, 2004 and 2005 on East Moon Island. In 1996 this area, at an operational level of approximately 26.0 metres, was almost completely devoid of vegetation. It has been de-stocked since about 2001. In late spring 2003 and 2004 Lake Victoria was refilled to capacity (27.0 metres) and this area was inundated with up to one metre of water for approximately 80 and 160 days respectively. The photos demonstrate clearly that the vegetation has been able to cope with this inundation regime.

The Lake Victoria foreshore is very rich in Aboriginal cultural heritage, having been occupied over many thousands of years. MDBC operates Lake Victoria in accordance with a Cultural Landscape Plan of Management (the Plan), which was developed by representatives of the local Indigenous community, landholders, NSW National Parks and Wildlife Service (now part of the Department of Environment and Conservation), MDBC and partner agencies the Department of Infrastructure, Planning and Natural Resources (NSW) and SA Water.

The Plan aims to stabilise the sandy foreshore sediments with indigenous floodplain plant species, hence minimising erosion and conserving the in situ cultural heritage material. Grazing has now been removed from much of the foreshore, including the Frenchmans Islands chain on the southern lakebed, further promoting the opportunity for vegetation to flourish. In addition, the Lake Victoria Operating Strategy, formally adopted by the Commission in May 2002, successfully balances water supply objectives with vegetation outcomes by lowering average water levels and increasing the drying time available for perennial wetland plant species. This has been achieved without compromising water supply requirements.

The Snowy Mountains Scheme

Total active storage in the Snowy Mountains Scheme increased by about 280 GL over 2004–05, from about 40 per cent of total active storage at 1 May 2004 to about 45 per cent at 30 April 2005. The increase in total storage comprised a small increase in storage in the Snowy–Tumut Development, with almost no change in storage in the Snowy–Murray Development.

Release from Murray 1 Power Station for the 12 months to 30 April 2005 was 1104 GL, made up of:

- 1062 GL of required annual release
- repayment of the last 49 GL of the 138 GL advanced in 2002–03
- repayment of 16 GL associated with construction of outlet works at Jindabyne Reservoir
- 107 GL advance by NSW irrigators via a commercial arrangement with Snowy Hydro Limited.

Further special water release arrangements were also entered into between Murrumbidgee irrigators and Snowy Hydro Limited.

Releases from Murray 1 Power Station were evenly spread throughout the first three-quarters of the season, with an increased amount released in the last quarter. The pattern was within forecasts by Snowy Hydro Limited and did not have any detrimental impacts on River Murray System planning.

Environmental report

River flows and use of environmental entitlements

2004–05 was another year of low inflows and reservoir storage levels. Consequently there were no spills of water from the major River Murray System water storages, apart from a controlled release of approximately 100 GL from the Barrages.

During 2004–05, there were no sufficiently large and long spring 'freshes' to trigger the use of the Barmah–Millewa Forest Environmental Water Allocation, and the water in the account was again loaned to irrigators, credited and carried over for use in a future season. There were, however, a couple of small flushes from the Kiewa and Ovens rivers during September 2004 and February 2005, which resulted in limited watering of some low-lying parts of the forest.

A number of environmental watering opportunities undertaken during the year in New South Wales, Victoria and South Australia are described below.

The NSW Wetlands Working Group used 17 GL of NSW Adaptive Environmental Water. Most of the watering was undertaken in the following areas:

- Gulpa Creek Wetlands – Millewa Forest (8800 ML)
- private property wetlands – Murray Irrigation Limited (4789 ML)
- Chowilla Floodplain South Australia (1500 ML) (through negotiations with, and a transfer of water to, the SA Department of Water, Land and Biodiversity Conservation).

Lake Victoria, south western New South Wales near Wentworth, November 2004

(Photo: Michael Bell)

NSW State Water, in consultation with RMW, also lowered the Stevens Weir Pool (on the Edward River) and removed the Edward River and Gulpa Creek regulators during May 2005 to improve fish migration opportunities between the Edward River, the Barmah–Millewa Forest and the River Murray during winter. The weir was reinstated in July 2005, in time for the start of the 2005–06 irrigation season.

Victoria used about 27 GL of their Murray Flora Fauna Entitlement during 2004–05. The water was used at a number of locations including:

- Gunbower (11 300 ML)
- Kerang Lakes (5104 ML)
- Lower Murray River red gum emergency watering (5200 ML).

In South Australia, the level of the Lock 6 weir pool was gradually raised to about 15 cm above the normal operating level in mid March 2005, and held at that level for about six weeks, to provide water to a small area of wetlands and creeks on the Chowilla Floodplain (about 50 hectares). There were positive environmental outcomes including new growth in River red gums, Lignum and other wetland plants within weeks of the watering.

Localised rainfall and run-off boosted the level of Lake Alexandrina and Lake Albert (in South Australia), and approximately 100 GL was discharged through the Barrages during August and September 2004. This controlled release was the first in 14 months, but was small compared to the median annual flow over the Barrages of 3100 GL/year. Some of this water was released through the Goolwa Barrage, flushing salt out of the Goolwa Channel and reducing the salinity in that area from 3300 EC to about 1700 EC. Water was also released through the two newly installed trial fish passages and adjacent gates on the Tauwitchere Barrage, with the aim of providing some ecological benefits in the Coorong and Mouth area.

The extended drought continues to have a significant impact on the stressed River red gum communities downstream of the Barmah–Millewa Forest. The health of these communities is still declining and has become a significant concern.

Water quality

Overall, water quality along the length of the River Murray was very good during 2004–05. Most of the water was supplied from the upper River Murray catchment (Hume and Dartmouth reservoirs), and the ongoing drought-reduced

saline groundwater inputs to the River Murray, resulting in low river salinity and turbidity levels at most locations, with the exception of the Lower Lakes in South Australia.

River salinity levels at Morgan averaged 400 EC over 2004–05, with a peak of 660 EC in mid July 2004. The average at Morgan is significantly lower than the long-term average for the last 20 years of 560 EC, as well as the 800 EC salinity target.

The long period of less than average flow to South Australia and limited barrage releases, has led to salinity continuing to build in Lake Alexandrina and Lake Albert. The small release from the Barrages in August and September 2004 allowed for some salt to be flushed out of the Goolwa Channel, but overall salinities in the Lower Lakes remain high. The salinity at Meningie reached 2400 EC towards the end of 2004–05, whilst Milang reached 1500 EC. Significant inflows and a large release from the Barrages will be required to reduce salinity over the longer term.

River management activities

Hume–Yarrawonga Waterway Management Plan

Works continued under the 2002 River Management Plan for the Hume to Yarrawonga reach of the River Murray. The plan aims to balance water conveyance, economic production and environmental objectives for the reach. It has been developed in consultation with the Advisory Group for Hume to Yarrawonga Waterway Management, representing agencies from each state together with local landholder interests, local government and wider community representatives.

Programs under the Waterway Management Plan include physical works under the Priority Reach Program and the Whole-of-Reach Program. In addition, the Land Management Review considered flood easements for regulated flows.

Physical works

By the end of 2004–05, condition assessments and conceptual designs had been completed for eight of the 14 reaches.

The following on-ground works were completed last year (across all programs).

Erosion control

- Two anabranch bed grade control structures (full stream width timber pile fields) – Parlour creek
- Two anabranch bank erosion control sites (timber pile groynes) – Dights and Yellowbelly creeks
- Two anabranch back erosion control sites (rock armouring) – Parlour and Chambers creeks
- Nine River Murray bank erosion control sites (timber pile groynes)
- Three River Murray bank erosion control sites (rock armouring)
- One River Murray bank erosion control site (geotextile erosion control blanket)
- Approximately 7500 timber piles were driven, and approximately 2.5 km of river bank was protected

Snags

- No snags removed
- Seven River red gum snags realigned for navigation or erosion control reasons

Willow management

- One willow island removed
- One willow snag removed
- Lopping at two sites
- 200 trees eradicated on River Murray main stem between Hume Dam and Lake Mulwala
- 175 trees eradicated on anabranches between Hume Dam and Lake Mulwala

Revegetation

- Revegetation undertaken at 31 sites on River Murray main stem and anabranches using local native species of trees, shrubs, reeds and grasses

Murray Mouth sand pumping

Dredging has been under way at the Murray Mouth since October 2002, with a single dredge up to June 2003 and a two dredge operation since July 2003. The total cost incurred up to 30 June 2005 is about $15 million. The dredging program has been over-sighted by the Murray Mouth Advisory Committee, including a Technical Sub-Committee, and also by the River Murray Water Advisory Board.

Over the past two summers the dredging has been effective in maintaining a flow path to the sea and achieving connectivity with the Coorong consistent with tidal range targets. The ongoing dredging program reflects a continuation of previous commitments by the Murray Darling Ministerial Council and the Murray Darling Basin Commission to keep the Murray Mouth open and maintain adequate connectivity with the Coorong, in the face of the worst four-year drought on record.

Dredge operating at the Murray Mouth, South Australia

(Photo: Michael Bell)

Continuing dry conditions in upstream catchments as well as consumptive use has limited releases to the sea to only about 400 GL since December 2001. By comparison the median annual flow to the sea under current levels of development is about 3100 GL, whilst median 'natural' flow to the sea is estimated to be of the order of 11 300 GL. To allow temporary suspension of the dredging program will require an annual flow to the sea of about 2000 GL or more although very short-term relief would be possible with lesser flows.

With the dredging program now entering its fourth year there is increasing local pressure relating to easing of restrictions around exclusion zones, both for boats near the dredging and vehicles near the discharge point on Sir Richard Peninsula. Every effort is being made to find workable, safe and effective solutions to access problems without compromising the production capacity of the program, particularly over the spring, summer and autumn periods.

Land management review

Significant progress continued in 2004–05 towards purchasing flood easements to confirm the Commission's rights to pass regulated flows within existing channel capacity on up to 106 affected properties in the Hume to Yarrawonga reach. Consultants Hassall & Associates had completed property assessment fieldwork for almost all of the properties in the reach by the end of 2004–05. Expert legal advice contributed to the development of easement documentation for Victorian and NSW properties.

The first six offers for Victorian properties were forwarded to landowners in July 2004. By the end of June 2005, 43 of the estimated 76 Victorian offers had been issued, and 28 have been accepted by landowners to date.

Differences between legal requirements in New South Wales and Victoria delayed the process in New South Wales while additional complexities were resolved. By the end of June 2005, 16 of the estimated 36 NSW offers had been issued, of which four had been accepted. The first of these easements were awaiting signature on behalf of the crown, prior to being submitted to NSW Land and Property Information to complete registration of easements.

The remaining offers will be forwarded to landowners through the financial year as documentation is progressively finalised.

Properties of landholders in this reach have been increasingly affected by river regulation over many decades. The progress achieved throughout the year has been a significant milestone for both River Murray Water and these landholders.

Asset management

The assets controlled and managed under the Agreement are investigated, designed, constructed, operated and maintained, for and on behalf of the MDBC, by three constructing authorities from New South Wales, Victoria and South Australia. They are, respectively:

- State Water Corporation and Department of Infrastructure, Planning and Natural Resources
- Goulburn-Murray Water
- the Minister for the River Murray (including the operating agent for South Australia, South Australian Water Corporation).

RMW exercises the MDBC's responsibilities in relation to management of the assets (see Appendix G). Daily operation and maintenance of the structures is by a collective team from the authorities of the three states totalling 120 staff. RMW values the dedicated service of this team and appreciates the commitment and pride that is evident in the stewardship of the assets.

The Senator Collings Trophy has been awarded annually since 1943 to the team looking after the asset judged to be the best maintained lock and weir. In 2003 the River Murray Water Advisory Board agreed that eligibility for award of the Collings Trophy should be extended to include all water storage assets of the River Murray System. The judging criteria were extended to include not only maintenance and care of the works and their surrounds but also the application of contemporary asset management practice. In 2004 the Senator Collings Trophy was awarded jointly to Norm Boyd, Jeff Finch and Danny Burke from State Water at Lock and Weir 10 (Wentworth) and to Terry Holt and Alan Williams from Goulburn–Murray Water at Lock and Weir 26 (Torrumbarry).

An Emergency Action Plan for River Murray Water has been implemented during the year following testing, through emergency training exercises, of earlier drafts. The plan is linked to individual dam safety emergency plans established for individual assets by the constructing authorities. It sets out the basis for decision-making within the Commission in the event of emergency actions requiring Commission decisions. In particular, the plan documents the role of RMW in directing major flood operations at upper Murray storages.

In a ceremony at Hume Dam on 22 April 2005, Engineers Australia presented plaques to Dartmouth Dam and Hume Dam conferring on them the status of National Engineering Landmarks. This is the highest category of recognition for engineering structures awarded by Engineers Australia.

This recognition to each of these two large dams follows the earlier recognition of the entire 'Works of the River Murray System as a National Engineering Landmark' in 2001. The five barrages at the Murray Mouth received a similar award in 2001.

During 2004–05 major works involved:

- completion of navigable passes and fishways at Locks 8 and 9 and commencement of Lock 10
- completion of installation of handrails and operational flexibility measures at Tauwitchere and Ewe Island barrages
- office upgrades at Euston and Mildura weirs and Goolwa Barrage
- river improvement works in the Hume to Yarrawonga reach of the River and in the Mitta Mitta River below Dartmouth Dam to Lake Hume
- initial works towards upgrading Bethanga Bridge, as part of a handover to the NSW and Victorian state road authorities
- replacement of timber stoplogs at Slaneys and Pipeclay weirs (part of Lock 6)
- concrete barriers at Locks 1, 2, 4 and 7
- total refurbishment of Buronga Salt Interception Scheme
- progress on construction of salt interception schemes at Pyramid Creek, Bookpurnong and Loxton.

(Photo: Peter Solness)

Safety at the Barrages – before (above) and after

(Photo: John Prentice)

Dartmouth Dam

A comprehensive inspection of Dartmouth Dam (undertaken every five years) was conducted this year. The report on the inspection states: 'In general Dartmouth Dam is in good condition and is continuing to perform as expected'.

The installation of walkways on the downstream face of the embankment to provide a safer access for surveillance continued according to schedule. The design of these works is highly innovative and allows for re-levelling as the embankment continues to settle, as expected, with time.

Over many years there has been a program of works to construct concrete kerbs on the edges of the spillway cascade benches to reduce the risk of erosion on the benches and direct flows away from other areas potentially subject to erosion. No further works are proposed until a sufficient spill occurs to allow the effectiveness of the protection system installed to date to be assessed.

A productive workshop was held to capture the 30-year history of operation of and modifications to the Low Level Outlet Works while key past and present personnel were still available. A project is now under way to use this information

to set clearer limits to the operation of the Low Level Outlet Works for a range of flows and durations, such as normal annual transfers to Hume Dam; sustained above-average flows in response to long-term dry periods when other reservoirs are run down; and, potentially, for relatively high short-term flows to achieve environmental outcomes in the Mitta Mitta Valley. The aim is to avoid unacceptable damage due to cavitation which had occurred during commissioning trials, and which resulted in the modifications being undertaken in 1982.

Hume Dam

In November 2004 a workshop was held 'to review the failure modes effects analysis for Hume Dam and agree on what additional remedial measures are required to comply with the risk-based philosophy of "as low as reasonably practical"'. The main conclusions of the workshop were reported as:

- To our best engineering judgment the dam safety risks have been substantially reduced by the [remedial] works carried out to date.
- The dam can be safely operated to its full supply level of 192 metres AHD and for short-term flood surcharges to 192.15 metres AHD.
- There are a number of residual risks and in order to demonstrate that these risks are as low as reasonably practical we have recommended a series of investigations.

These risks are very much second-order risks compared with the risks addressed to date by the remedial works program undertaken between 1994 and 2003 at a cost of approximately $80 million. Detailed studies into these risks are under way. Until these studies are complete it is not clear whether any further minor works are required.

Further progress has been made through the year on determining the contemporary spillway capacity of Hume Dam. Flood risk is being considered separately. The very large size of the catchment and the shape of the valleys upstream of Lake Hume have led to a thorough and cautious approach to the hydrological modelling of the extreme floods and the determination of spillway capacity to meet Australian national guidelines. This year the calibration of the rainfall/runoff model has been completed by State Water's consultants for review by a sub-committee of the Technical Review Committee. In parallel, a hydraulic


model of flood routing through the reservoir, including the upstream valley effects and gate operation at the spillway, is close to finalisation.

The reservoir has still not reached full supply level since the embankment and gate remedial works were completed in 2003–04. As a consequence, the heightened surveillance procedure to be followed during the first two fills has not yet been invoked. The dam had successfully gone through one full cycle in late 2000 but seasonal conditions since have not been sufficient to trigger 'first fill' surveillance thresholds.

Yarrawonga Weir

In April 2005 a comprehensive (five yearly) inspection of Yarrawonga Weir was conducted. The report on the inspection and review of the past five years' performance is not yet complete but no urgent adverse matters were noted. In fact, the inspection team noted a significant improvement in the condition of the Weir over the past five years, even in parts of the structure outside of the areas involved in the recent extensive remedial works.

Other locks and weirs

The manipulation of the weir pools downstream of Hume Dam to achieve environmental outcomes has been investigated in the past year, particularly at the locks and weirs in South Australia. A consultant's report has been prepared on the safe operation range for Locks and Weirs 1 to 6, and some of the significant anabranch and floodplain structures associated with Lock and Weir 6. A detailed procedure has been written for preparation and monitoring to be undertaken at Lock and Weir 1 as part of an environmental weir pool manipulation. It is a generic document that, once accepted, could be easily adapted for the other locks and weirs.

A trial at Lock and Weir 6 involving a 0.15 metre weir pool raising (and an associated lesser raising of the Lock and Weir 5 weir pool) showed no distress at the main structure but did highlight the vulnerability of some of the minor banks and levees along the weir pool rim. These issues, and other risks associated with weir pool raising, are being carefully examined before a larger-range environmental weir pool manipulation takes place.

New office accommodation was completed this year at Euston Weir, and construction of a new office and workshop facilities is under way at Mildura Weir.

Lake Victoria

Following an assessment of the capacity of the bridge over the Lake Victoria Inlet Regulator on Frenchman's Creek, a limit has been placed on the gross load of vehicles using the bridge. With White's Bridge out of service access to the flood plain between French's Creek and the River Murray is restricted. Options for upgrading the capacity of the Inlet Regulator bridge to loading T44 standard are currently being investigated to determine a more cost-effective resolution to the access problem.

Barrages

Excellent progress has been made this year on the upgrade of the Barrages to reduce occupational health and safety risk and improve operational flexibility. Installation of handrails and upgrade of the lift-and-latch system has been completed on Ewe Island and Tauwitchere Barrages. Three sets of 12 gates (including trial fishways in two of the sets) have been upgraded for remote operation from the Goolwa Office or from cabinets on the Barrages. One prototype vertical axis spindle gate has been installed at Mundoo Barrage and five more have been fabricated and delivered to site ready for installation in the coming year. The concept design for a safer, more durable deck for Ewe Island and Tauwitchere Barrages, including kerbs to improve driver safety, has been agreed and detailed design is almost complete. Deck replacement will be progressive over many years as existing units reach the end of their useful lives and are replaced.

The office at Goolwa Barrage has been extended to accommodate the gate control unit.

The Lower Lakes and Coorong

(Source: MDBC)

Navigable Passes and Fishways Project

The construction phase of the Navigable Pass and Fishways Project started in mid-2001. SA Water is managing the project under the direction of a project steering committee, chaired by RMW, with representatives from SA Water, Department of Water, Land and Biodiversity Conservation (SA) and State Water (NSW). The project involves:

- replacing the navigable pass section of the weir
- replacing piers constructed in the 1960s when the navigable pass sections were narrowed
- constructing a vertical slot fishway.

Early in the year construction activity focused on completing works at Locks 7 and 8. The Australian Government Minister for the Environment and Heritage, the Hon Ian Campbell, officially opened the project at a ceremony in August 2004.

Major construction activity through the year involved York Civil Pty Ltd undertaking works at Lock 9. Having completed works at Locks 7 and 8 York Civil was able to incorporate its earlier experience and delivered the completed works within budget and ahead of schedule.

At its meeting on 1 April 2005 the Ministerial Council approved the award of contract for works at Lock 10 Wentworth to Built Environs. By the end of the financial year the first navigable pass pier had been poured and excavation for the fishway had commenced. Completion is scheduled for March 2006.

The detailed design and contract documentation for construction of the navigable pass upgrade and fishway is completed for Lock and Weir 1 and has started for Lock and Weir 3. Trialling of carp separation cages at Lock 9 in 2005–06 will form the basis for the management of carp at the proposed Lock and Weir 1 fishway, where carp control will be an important element of fish management.

A Fish Passage Reference Group oversees the design and functional specifications for the fishway program and provides advice to MDBC on fish passage throughout the Basin. The Fish Passage Reference Group comprises fish passage specialists from New South Wales, Victoria, South Australia and Queensland; an independent fish scientist; and engineers and river operators with an interest in fish passage. It is chaired by an officer of MDBC.

Monitoring of fish passage at Locks and Weirs 7 and 8 is already showing encouraging signs, with target species and size of fish achieving passage. An unforeseen benefit has been the discovery that some species, not previously thought to be migratory, are using or attempting to use the fishway. There has also been a marked decrease in bird numbers at the three locks now fitted with effective fishways, indicating that fish are no longer accumulating downstream of these barriers.

Occupational health and safety

The safety of staff, their families and general public is a high priority at all RMW assets. Our target is zero lost time injuries for staff. In the past year one lost-time injury was sustained during RMW operations.

In 2003–04 significant works to improve the safety of operations included the following.

- Completion of handrails, upgrade of the lift and latch mechanisms and construction of the revised stoplog retention system at the Barrages. This pleasing result was achieved due to the commitment of the staff at the Barrages.
- Commissioning of a prototype vertical axis spindle gate and purchase of five more ready for installation at Mundoo Barrage. The gates will replace an awkward on-site stoplog lifting operation with a much safer hydraulic control operation, for most flows.

Construction works to upgrade the navigable pass at Lock and Weir 9

(Source: MDBC)

- Further improvements to the Tauwitchere Lock enabling safer operation of this publicly operated lock.
- Further improvements in the safe operation of the weir at Lock and Weir 11 (Mildura), particularly relating to manual handling of drop bars on the abutment. Concept designs have been started to develop a safer method to handle the drop bars on the weir itself or to replace the bars with another mechanism.
- The navigable passes at Locks and Weirs 7, 8 and 9 have now been upgraded to avoid the use of divers when reinstating this section of the weir after major flood events. An assessment was made of the risks associated with the remainder of the weirs (1 to 6, 10 and 15) under revised operation rules until all navigable passes are upgraded. It was concluded that the residual risks associated with leaving the navigable passes in place during floods are significantly less than the risks associated with using divers. Until the program is complete, those weirs not fitted with new navigable passes will be closed to boat passage during floods, when the lock chamber is not available for use.
- General improvements to workshop facilities and procedures, including handling of chemicals.
- The walkways on the downstream face of Dartmouth Dam to provide safe access for surveillance staff have been extended according to schedule.

RMW triple bottom line report

Introduction

RMW has adopted sustainability as one of its guiding principles, and is moving to integrate this philosophy into its culture, its operations and its management systems. This approach is consistent with the COAG water reforms that led to the formation of RMW within the MDBC and is in harmony with the 2001 independent pricing review that proposed the introduction of an 'environmental dividend'. There is a stakeholder and public expectation that as a division of the MDBC, RMW should provide a benchmark for sustainable environmental and social practices in river basin and water resource management, in addition to its economic obligations under the COAG water reforms.


In line with these obligations and expectations RMW will account for its performance in promoting sustainable use of water, land and other environmental resources of the Murray-Darling Basin by producing an annual 'triple bottom line' report.

Sustainability strategy

The RMW strategy is founded on the *Vision for River Murray Water*, which has been formally endorsed by the RMW Board and the Murray-Darling Basin Ministerial Council:

> Within agreed financial, social and environmental objectives to sustain the supply of water in the River Murray System.

This vision is carried forward in the RMW *Strategic Plan 2002–2007* and the draft MDBC S*trategic Plan 2005–2010*, together with performance indicators and target dates for accomplishment.

Staff

The business of RMW is conducted by:

- a relatively small team mostly based in Head Office, Canberra, focused on management, river modelling and system operations, and special projects
- three state government constructing authorities focused on the site operation and maintenance of the water storage and delivery assets, plant and equipment, and associated land and buildings.

In Canberra, there are currently 25 staff who are effectively dedicated to RMW activities. Of these, two are management, 15 professional, four technical and two administrative support. Within the constructing authorities, 120 people are engaged in RMW activities.

For its own staff, RMW assumes direct responsibility for training, career development, occupational health and safety, and succession planning. The constructing authorities have the prime responsibility for these matters for the staff they employ to undertake RMW activities. However, RMW does actively support them, particularly in OH&S and by encouraging them to keep up with best practice maintenance management. RMW takes a special interest in the wellbeing of those staff located at the more remote assets that are not easily

accessible or well supported with normal community services, endeavouring to improve the level of amenity and working to create a sense of 'RMW family'.

Occupational health and safety

RMW operates and maintains assets ranging widely in size, complexity, age and facility. Some of the older structures were designed and constructed at a time when there was less emphasis on OH&S. Some difficult challenges have been overcome in responding in a responsible way . Significant effort has been made this year on modifications to assets and changes in procedures to improve the safety of personnel undertaking RMW's business.

The range of works includes:

- fundamental changes to the older lock and weir structures by upgrading the navigable passes to avoid the need for divers to reinstate weirs after withdrawal to pass floods
- completion of significant milestones in a package of works at the Barrages aimed at improving personnel safety as well as improving river operation efficiency
- adding walkways to the downstream face of Dartmouth Dam, a relatively new and well-engineered structure, as a continuous improvement in safety.

The approach to OH&S has improved so much over the past decade or so that there is now a definite culture of working safely among RMW and constructing authority staff. This is seen across the range of activities from the first stages of design of assets to the routine induction by constructing authorities of contractors or consultants before allowing them onto RMW assets to undertake work or inspections.

Community relations

RMW has no direct or formal relationship with the ultimate users of the water it delivers, or the communities that are affected by its operations in the states of New South Wales, Victoria or South Australia. Nevertheless RMW seeks to build cooperative and collaborative relationships with these communities through:

- active participation with community organisations in the development of relevant management plans, in particular the Land and Water Management Plans for Lake Hume and Lake Mulwala, and the options for the future for the Mulwala Bridge


- publication of routine operational advice as well as information about specific events. Typical examples are the River Murray Weekly Report on flow, capacity and storage data, and the involvement of stakeholders in a weir pool manipulation event, with media releases before and during the events to keep the public informed. The report is widely distributed across the Basin via mail, fax, and e-mail to more than 1000 recipients, as well as being posted on the MDBC web page, where it is consistently among the 'top ten' hits.
- providing safe and enjoyable access to sites it controls, subject to security considerations. Public access is encouraged where possible by the provision of recreation facilities and information bays. Continuing improvement in the safety, amenity and appearance of RMW's assets by the constructing authorities encouraged through the annual award of the Senator Collings Trophy to the best site (see page 34).

Environmental bottom line

Managing the river system

RMW's charter is to determine the annual allocation of the Murray-Lower Darling water resource to the states under the Agreement, and to deliver those allocations in a sustainable way that minimises the adverse impacts on the River Murray, the Lower Darling River and the reservoirs impounded by RMW assets.

One of the most significant ways RMW can minimise the adverse impacts of past interventions on the Murray-Darling system and maximise the environmental benefits from its current activities is by the way it operates the river system. In the current prolonged drought conditions this is a great challenge but significant advances have been made. For example:

- RMW has made a dramatic change to the Lake Victoria foreshore environment by altering the timing of the annual transfer of water from Lake Hume to Lake Victoria, as well as varying the levels at Lake Victoria to provide annual wetting and drying.
- RMW has worked with The Living Murray project teams to develop new operating rules and guide the design of proposed new structures to prevent unseasonal flooding of the Barmah-Millewa forests due to 'rain rejection' by irrigators.

Lock and Weir 11, Mildura, Victoria

(Photo: Michael Bell)

Both of these programs have required more than commitment of time and effort by RMW personnel. RMW has committed significant funds to purchase land or easements around the foreshore of Lakes Victoria and Mulwala, and along the River Murray riparian zone between Hume Dam and Yarrawonga Weir. Obtaining control or rights over these areas has enabled more certainty to alter operations for environmental flow reasons, and will minimise adverse impacts from stock and feral animals.

Electricity generation and consumption

The normal operations of River Murray Water are not energy-intensive. However, the salinity mitigation schemes do require electrical energy for pumping. Electrical consumption is mitigated by careful control and good maintenance.

This consumption is more than offset by the production of hydroelectric power from water releases for irrigation purposes from River Murray Water structures. Hydroelectric power stations are located at Dartmouth Dam, Hume Dam and Yarrawonga Weir.

Economic bottom line

Commercial structure

RMW's revenue is derived primarily from the three states that are its customers and from the Australian Government. Charges are based on a surrogate pricing model to 'break even' on costs. No dividends are paid.

A summary of the RMW income and expenditure statement for 2004–05 is given in Table 2.3. Table 2.4 shows the volumes of water delivered for the year to each of the states.

Dartmouth Dam, November 2004 *(Photo: Michael Bell)*

Table 2.3: River Murray Water income and expenditure, 2004–05

	NSW $'000	Vic $'000	SA $'000	2005 Total $'000	2004 Total $'000
INCOME					
Water storage and supply – Access	8 741	7 466	2 878	19 085	18 886
Water storage and supply – Consumption	3 746	3 200	1 233	8 179	8 094
Salinity mitigation	3 867	3 867	3 868	11 602	13 800
Public beneficiaries	951	951	2 044	3 946	3 628
Subtotal (income from primary customers)	17 305	15 484	10 023	42 812	44 408
Hydro generation				1 273	538
Interest				932	982
Other operating revenue				519	519
Subtotal other income				2 723	2 039
Carry over from previous year				3 713	8 925
Carry over to following year				-2 480	-3 713
Total income				**46 768**	**51 659**
RECURRENT EXPENDITURE					
Water storage & supply				23 955	18 382
Salinity mitigation				3 893	3 104
Navigation				1 188	1 574
Recreation and tourism				666	695
Other				221	298
Total recurrent expenditure				29 923	24 053
OPERATING SURPLUS				**16 846**	**27 606**
Commonwealth contribution				5 503	6 957
TOTAL AVAILABLE FOR INVESTIGATION AND CONSTRUCTION				**22 349**	**34 563**


Table 2.4: State diversions from the River Murray and the lower Darling River during 2003–04 (volumes of water delivered, GL)

State	Diversions (GL)
New South Wales	1 258*
Victoria	1 418*
South Australia	618†
TOTAL	3 294

* Operational and hydrographic data, subject to revision.

† Approximate data provided by the SA Department of Water, Land and Biodiversity Conservation.

Asset sustainability

RMW has been advocating for some time the introduction of renewals annuity funding, which would provide a relatively consistent basis for renewal, replacement and refurbishment of its infrastructure assets. In 2004–05 the Australian Government and the Victorian Government completed arrangements for enabling legislation to be considered by their parliaments. The governments of New South Wales and South Australia have yet to finalise their consideration of the proposed amendments and draft enabling legislation.

Economic impact in the region

In 2004–05 RMW expended $48 million through the constructing authorities in the states of New South Wales, Victoria and South Australia. This amounts to 84 per cent of RMW expenditure for the year.

3

3. Natural Resource Management

(Photo: Arthur Mostead)

NSW Fisheries staff undertaking field work, Mungindi, Queensland – New South Wales border

Functions

The Natural Resource Management (NRM) Division supports the Commission in undertaking its functions in relation to the planning, development and management of the water, land and other environmental resources of the Basin.

The Division has lead responsibility for implementing, coordinating and managing a number of significant programs including:

- The Living Murray
- the Basin Salinity Management Strategy
- the Sustainable Rivers Audit
- integrated Basin reporting
- interstate water trade
- the Cap on surface water diversions
- the development of policy responses to risks to shared water resources
- the Native Fish Strategy.

In implementing Commission strategies and responsibilities, it is clear that:

- there are important inter-dependencies between Commission strategies (for example, **moving water** (production, trade or environmental watering) will have salinity impacts)
- there are **important risks** to the shared Basin resources that will impact upon multiple strategies (for example, climate change, reforestation and farm dams all impact upon catchment water yield, which in turn has implications for the Cap, water trade and environmental watering programs)
- **biophysical processes** (the interaction between the land and the water) vary across the Basin, and there is a strong relationship between these processes and socio-economic factors
- **episodic processes** are major drivers of biophysical processes across the Basin. Cycles of drought and flood have a significant impact on the future management of the shared resources of the Basin.

These factors will shape both the implementation of existing policies and strategies and development of new initiatives by the partner governments and the Commission.



The Living Murray initiative

The year under review saw the Murray-Darling Basin Ministerial Council activate The Living Murray (TLM) Business Plan. The plan details how the Murray-Darling Basin Ministerial Council's First Step Decision will be achieved.

The First Step Decision for The Living Murray focuses on maximising environmental benefits for six significant ecological assets along the Murray that were chosen for their high conservation, recreation, cultural, heritage and economic value (see Figure 3.1). These are:

- Barmah–Millewa Forest
- Gunbower and Koondrook–Perricoota Forests
- Hattah Lakes
- Chowilla Floodplain (including Lindsay–Wallpolla)
- Murray Mouth, Coorong and Lower Lakes
- River Murray Channel.

Figure 3.1: Location of the six significant ecological assets

(Source: MDBC)

The First Step Decision included input from communities through meetings, submissions, The Living Murray Community Reference Panel, the Community Advisory Committee to the Ministerial Council and an Indigenous consultation process undertaken with the Murray Lower Darling Indigenous Nations.

Further information about The Living Murray First Step Decision can be found at <www.thelivingmurray.mdbc.gov.au>.

The Living Murray Business Plan

In April 2005, the Ministerial Council activated The Living Murray Business Plan. The plan describes how the MDBC will implement the actions and milestones in the MDB Intergovernmental Agreement for the Murray-Darling Basin. This includes the $500 million commitment under COAG by the New South Wales, Victorian, South Australian, ACT and Australian governments. There is also $150 million for the Environmental Works and Measures Program agreed by the Ministerial Council (see pages 56–59).

Key project areas under The Living Murray include:

- water recovery
- environmental works and measures
- environmental delivery.

In addition to these project areas, a consultation and communication process is in place. This targets individuals and groups who are likely to be impacted upon, or materially interested in activities under the Business Plan and gives them an opportunity to comment. Indigenous people are included in this process through an agreed approach, which respects partner governments' legislation and other agreements.

Water recovery

The Ministerial Council agreed in November 2003 that 'the water for [the] First Step will come from a matrix of options with a priority for on-farm initiatives, efficiency gains, infrastructure improvements and rationalisation, and market based approaches, and purchase of water from willing sellers, rather than by way of compulsory acquisition'. By providing technical support the MDBC plays an important role in implementing initiatives with the partner governments.



Program highlights and achievements

There are three main streams of activity under TLM Water Recovery Program: These are:

- providing technical support for assisting with the implementation of four initial water recovery packages in accordance with TLM Business Plan
- supporting the development of potential new water recovery packages
- investigating the potential for water recovery by reducing river and storage losses along the River Murray, Edward River and lower Darling River systems.

Technical support

On 26 November 2004, the Ministerial Council agreed in principle to the implementation of an initial four water recovery packages, which will recover 240 GL at a cost of $179 million. This is nearly half the water to be recovered in the First Step Decision, costing about 35 per cent of the $500 million Living Murray investment. Investment plans are currently being finalised.

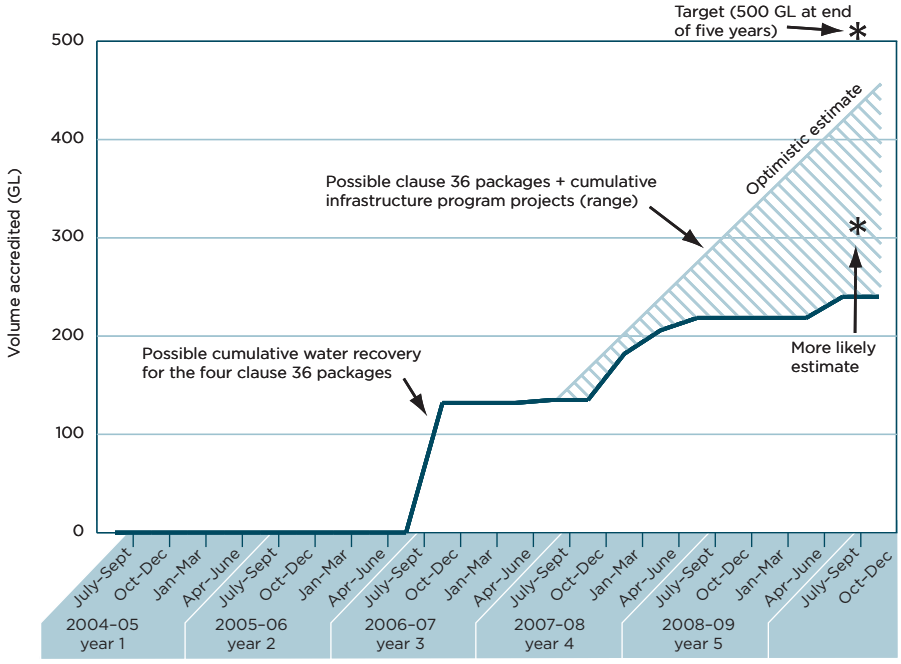
The four water recovery packages are:

- Goulburn–Murray Water Recovery Package, which will recover 145 GL of water at a cost of $93 million
- Lake Mokoan Water Recovery Package, which will recover 24 GL of water at a cost of $13.7 million
- NSW Water Recovery Proposal A, which will recover 9 GL of water at a cost of $8.9 million through acquisition of Innovative Water Products
- NSW Water Recovery Proposal B, which will recover 62 GL of water at a cost of $63.25 million through infrastructure improvement works such as pipelines.

The technical support provided by the MDBC includes hydrological modelling, the development of consistent protocols to assess water recovery projects (for example, the volume recovered and cost), and commissioning independent assessments.

As shown in Figure 3.2, additional water recovery ideas are likely to be required within the next four years to fulfil the indicative water recovery target of 500 GL in The Living Murray Business Plan within five years, and the partner governments are reviewing additional investment opportunities.

Figure 3.2: Cumulative water recovery projections, 2004–05 to 2008–09



Supporting the development of new water recovery packages

The Commission has invested $1 million to undertake feasibility assessments of infrastructure improvement projects for water recovery. Many of these projects aim to reduce water losses from evaporation and seepage in irrigation districts, or evaporative losses from frequently inundated wetlands connected to weir pools along the River Murray. As a result of this program, nine feasibility assessments are under way in New South Wales, Victoria and South Australia.

The Environmental Works and Measures Program

The Environmental Works and Measures Program is designed to complement the delivery of environmental flows and improve the health of the River Murray. In 2004–05 the program moved into its second year of operation, with 31 projects implemented across the six significant ecological assets, or as



complementary investigations and actions. By June 2005, $18.5 million was expended on a wide range of activities, as detailed in Table 3.1.

Table 3.1: Key EWMP deliverables

Key deliverables	2004–05 expenditure ($m)	Total expenditure to 30 June 2005 ($m)
Barmah–Millewa Forest		
Investigations across five projects	$0.556	$0.676
Gunbower, Koondrook–Perricoota Forests		
Investigations across two projects Approval of Stage 1 construction for the Gunbower Forest	$0.758	$0.873
Hattah Lakes		
Investigations across one project	$0.087	$0.087
Chowilla (incl. Lindsay–Wallpolla) Floodplain		
Investigations across six projects Approval of Stage 1 construction for the Lindsay–Wallpolla Floodplain Watering of red gums at 11 sites on the Chowilla Floodplain Watering of red gums at 17 sites on the Lindsay–Wallpolla Floodplain (including Hattah Lakes) Approval to purchase mobile pumps for the Chowilla Floodplain	$2.633	$2.993
Murray Mouth, Coorong and Lower Lakes		
Investigations across one project Installation of 24 remotely operated gates at the Barrages	$0.405	$0.825
River Murray Channel		
Investigations across 11 projects Fishway construction Approval to construct refuge habitat trial site Approval to construct the Packer's Crossing regulator	$6.105	$11.230
Complementary investigations and actions		
Investigations across five projects Completion of manual on wetland and floodplain monitoring Completion of guidelines for acquisition of terrain mapping data Program management	$1.146	$1.846
Total EWMP	**$11.690**	**$18.530**

2004–05 achievements

Gunbower, Koondrook–Perricoota Forests

Approval to proceed to construction for Stage 1 of the Gunbower Environmental Flow Management project, including construction of the Little Gunbower Creek and Barham Cut regulators, refurbishment of the Shillinglaws regulator and removal of Wattles regulator.

(Photo: J Skawinski)

Wattles regulator – Gunbower Forest, October 2004

Chowilla (including Lindsay–Wallpolla) Floodplain

Approval to proceed to construction for Stage 1 of the Improved Flow Management of the Lindsay–Wallpolla System project, including the construction of regulators for Horseshoe and Webster's Lagoons and Lake Walla Walla.

Watering of 17 areas of severely stressed River red gums on the Lindsay–Wallpolla Floodplain (and also at Hattah Lakes).

Watering of 11 areas of severely stressed River red gums on the Chowilla Floodplain including at Woolshed Creek.

Approval to acquire two sets of mobile pumping equipment to be utilised for future red gum watering activities on the Chowilla Floodplain.

(Photo: S Omundsen)

The permanently inundated Websters Lagoon, which is to be dried out following construction of an inlet control regulator, March 2004

(Photo: D Nicholls)

Pump and levy at mouth of Woolshed Creek – Chowilla Floodplain, March 2005



Murray Mouth, Coorong and Lower Lakes
Installation of 24 remotely operated gates on the Barrages to provide greater operational flexibility and control of water movement and fish passage between the Lower Lakes and the Coorong estuary.

(Photo: K Goodhew)

Remotely operated radial gates at the Tauwitchere Barrage, June 2004

River Murray Channel
Approval to construct a trial refuge habitat to investigate the feasibility of improving the growth rate and survival of native fish through the provision of a sheltered habitat.

Construction of a new fishway at Lock 9.

Approval to proceed to construction of the Packer's Crossing regulator on the Darling Anabranch.

Complementary investigations and actions
Completion of adaptive management project, with a handbook of recommended methods for wetland and floodplain monitoring due to be released in July 2005.

Completion of terrain mapping of the Lower Murray and Darling Rivers, with detailed guidelines for the acquisition of terrain mapping data available through the EWMP team.

Environmental delivery

The Living Murray Environmental Watering Group developed The Living Murray Environmental Watering Plan for 2005–06 with the assistance of the Environmental Development team and the MDBC's partner governments. The plan was agreed to by the Murray-Darling Basin Ministerial Council in November 2004. It meets the interim arrangements for environmental water management under the 2004 COAG Intergovernmental Agreement on the Murray-Darling Basin.

The Living Murray Business Plan identifies the role of the Environmental Watering Group (EWG) and the need for asset environmental management plans to guide water application at the significant ecological assets under the First Step Decision. The Environmental Delivery team provides executive support for the EWG, which considers the development of asset environmental management plans across the River Murray System and actions required to support their implementation.

With the assistance of the Environmental Delivery team, under The Living Murray Business Plan the EWG developed the River Murray Channel Environmental Management Plan for 2005–06 as well as The Living Murray Environmental Watering Plan. Together with the remaining asset environmental management plans, these will guide environmental management across the river system in 2005–06.

The Environmental Delivery team continued to work with the RMW Production team in identifying and contributing to the management of environmental watering opportunities across the River Murray System, for example, the release of water from the Barrages and flooding in the Gulpa Creek wetlands.

Spoonbill leaving nest, Barmah Forest

White Ibis chick in nest, Barmah Forest

(Photos: Arthur Mostead)

The past year has also seen the launch of a new website, <www.mdbc.gov.au/livingmurray/mfat/>, which enables visitors to discover how the Murray Flow Assessment Tool (MFAT) – a decision support tool that assists in modelling environmental flows – works and to view the scientific information on which it is based. Reports produced by the Environmental Delivery team include an assessment of the health of vegetation on the Murray floodplain (see Appendix E) and *The Living Murray – Foundation Report*, due for release in early 2005–06.



Strategy and programs

Risks to shared water resources

Background

Following The Living Murray First Step Decision, the MDBC identified six key processes which, if not addressed, could cause the flow and quality of shared water resources in the Basin to decrease. The key processes (or risk factors) currently identified are:

- climate change
- increased groundwater use
- bushfires
- reforestation
- farm dams
- reduced return flows from irrigation.

Ministerial Council has noted the potential impact of these key processes, and endorsed the MDBC's proposed actions to address the effects of these issues. Immediate priority has been given to bushfires and groundwater use, with strategies for other risk factors to be developed in the medium term. The program of actions to address these issues became the Risks to Shared Water Resources program (Risks program).

Program background, highlights and achievements

The Risks program is formulated on the following components:

- current knowledge base
- critical gaps in knowledge
- integrated assessment of potential impacts
- current management arrangements
- identifying policy and management options.

Communications planning for the Risks program is a priority for 2005–06. Using the best available information the program aims to target priorities to improve the knowledge base and effectively support informed decision-making. A summary of progress follows.

Climate change (and variability)

Potentially, climate change and variability may be the most significant risk factor in the long term to Basin resources. In recognition of the potential significance of climate impacts, the MDBC has identified specific areas of uncertainty to be targeted in research with the objective of improving the confidence in medium- to long-term climate impacts on water resource availability. A three-year collaborative research program commenced in June 2005.

Groundwater use

A comprehensive review (undertaken to provide advice to the Commission and Ministerial Council) of available Basin groundwater information indicates that:

- the trend in significantly increased groundwater use is projected to continue
- increased groundwater use is significantly impacting on streamflow and is undermining the surface water cap
- the sustainability of groundwater use itself is also threatened in some aquifers
- availability of high-quality information on groundwater use is limited, particularly regarding connectivity of surface and groundwater systems
- metering, monitoring and reporting requirements are a high priority for assessment of the impacts of use on both surface and groundwater, and currently are not adequate to ensure sustainable management of the resource.

Bushfires

The MDBC is supporting the Victorian Government's Bushfire Recovery Program, which includes a research project to estimate and assess the impacts of the 2002–03 bushfires on streamflow in the south-eastern Basin, in both the immediate and medium to long term.

Preliminary results from this research project suggest the impact of the bushfires on streamflow will be significant, but may not be of the magnitude of previous estimates. The project concludes at the end of 2005, and the final results will then be reviewed and potentially included in an integrated assessment of all risks.

Reforestation

The MDBC continues to contribute to the understanding of the impacts of plantation forestry on catchment water yield and salinity through major research projects. Further investigations will be based on more accurate scenarios for new

plantations in the Basin, following a comprehensive review of new information from the Bureau of Rural Sciences and others.

Farm dams

A recent investigation into the number, size and capacity of hillside farm dams in the Basin (in the 500–800 mm rainfall zone) indicates that the potential impact of farm dams could be greater than earlier estimates indicated. The study uses innovative methods and the best available technology, and will provide a platform for more detailed analysis of the significance of the impact of farm dams.

Reduced return flows from irrigation

One result of improvements in irrigation efficiency is that less water will be returned to the River from irrigation drains. Currently the potential impacts are not well understood, but streamflow could be reduced by as much as 90 GL/year.[1] A detailed investigation into the extent and scale of these impacts has been developed.

Fire in Goulburn – Broken catchment

(Photo: Michael Bell)

1 MDBC 2002, *Analysis of Drainage Flows from Irrigation Districts*, Technical Report 2002–03.

Interstate water trading

Since the MDBC's Interstate Water Trading Pilot Project began in August 1998, the net volumes of entitlement traded out of New South Wales and Victoria were 4465 ML and 10 720 ML respectively, with an equivalent net volume of 15 185 ML traded into South Australia. In addition, activity on temporary markets within and between states was very high.

The pilot MDBC Interstate Water Trading Project on the River Murray system, which aims to allow irrigators and the environment to maximise the returns gained from available water, has continued. The Productivity Commission has highlighted the importance of trade in water entitlements when the supply of water is reduced:

> Moving from no trade to intra- and inter-regional trade together more than halves the impact of the reductions in water on the gross regional product of the southern Murray-Darling Basin.[2]

After a successful pilot scheme, partner governments to the COAG National Water Initiative have agreed to expand permanent interstate trade (subject to environmental and third-party impacts). The MDBC partners are facilitating this process within the Basin by developing the technical and operational mechanisms necessary to allow exchange between water entitlements of differing supply reliabilities in the southern interconnected Basin. The MDBC has also assisted in the development of principles for access and exit fees.

The Council was scheduled to consider the expansion of permanent interstate water trading in late 2005. However, the current dry conditions may delay the start of expanded permanent interstate water trade until annual allocations return to levels that will allow the conversion of lower security water entitlements to higher security water entitlements.

The MDBC is undertaking an analysis of the relative costs and benefits of using exchange rates to convert traded entitlements compared to a proposed system of 'tagging' traded entitlements. Exchange rates convert entitlements in the state of origin to entitlements in the state of destination. Under a 'tagging' regime, the original characteristics of the traded entitlement are retained.

2 See Deborah Peterson et al., 'Modelling Water Trade in the Southern Murray-Darling Basin', November 2004, <www.pc.gov.au/research/swp/watertrade/index.html>.



Water entitlement and efficiency of use

Preserving the balance between environmental and consumption uses (the Cap)

The MDBC has taken a range of measures to redress the existing imbalance between consumption and environmental use of water resources in the Basin. The aim is to promote the health of the river system and enhance the efficiency of water use. These measures include the introduction of the Cap, The Living Murray, the Sustainable Rivers Audit (SRA) and expansion of permanent interstate water trading.

In 1995 the Ministerial Council decided to cap diversions in the Murray-Darling Basin. This decision, now called 'the Cap', was one of the most important initiatives ever undertaken by Council. As directed by the Ministerial Council, the Independent Audit Group (IAG) conducted the annual review of Cap implementation in October 2004 and reported to the Commission in March 2005 (see box pages 66 to 67).

Renmark on the River Murray, South Australia, November 2004

(Photo: Michael Bell)

Cap audit

The Cap is the balance struck by the Ministerial Council between the significant economic and social benefits that have been obtained from the development of the Basin's water resources on the one hand, and the environmental uses of water in the rivers on the other.

The IAG conducted a Special Audit of the combined Barwon–Darling/Lower Darling Valley of New South Wales in April 2005 and confirmed its earlier finding that diversions in these valleys had exceeded the long-term Cap. Based upon the determination by the IAG, the Commission, in June 2005, declared the combined Barwon–Darling/Lower Darling Valley in breach of the Cap. As a consequence of that, New South Wales will report to the Ministerial Council meeting in September 2005 on the reasons for excessive diversions in the valley, the management actions proposed and the time it will take to bring the diversion within the Cap limits.

An audit of the Cap data management system of the states and the Commission office conducted by Marsden Jacob & Associates identified scope for improving the accuracy of measurements from river off-takes and of the Cap reporting system. A set of structured actions were initiated to respond to the findings and recommendations of the Audit.

The Independent Audit Group provided qualified support for the New South Wales proposal to introduce new arrangements for the Barwon–Darling to apply for 2005–06.

An independent auditor conducted the technical audit of five Cap models, two each from Victoria and New South Wales and one from South Australia, as part of the accreditation of Cap models by the Commission. The Commission approved two Cap models during the year, bringing the total models approved to three. Other Cap models are expected be audited and approved during 2005–06 and 2006–07.

South Australia

Diversions in South Australia were within the limits set by the Cap.

Victoria

Diversions in all Cap valleys were within the limits set by the Cap.



New South Wales

Diversions in the combined Barwon–Darling/Lower Darling Valley exceeded long-term Cap estimates.

The assessment of the Cap compliance for the Gwydir Valley could not be done because the Cap target for 2003–04 was not made available.

An assessment of Cap compliance for the NSW Border Rivers was not possible because the Cap had not been defined in that valley.

Diversions were within the limits set by the Cap in the remainder of New South Wales.

New South Wales should report to the Ministerial Council meeting in September 2005 on the underlying reasons for excessive diversions in the combined Barwon–Darling/Lower Darling Cap Valley including management actions proposed to bring diversions within Cap limits.

Queensland

The water resource plans for the Border Rivers, Moonie and Paroo/Warrego/Nebine became law in December 2003 and Condamine–Balonne in August 2004.

Draft Resource Operations Plans for the Moonie and Warrego/Paroo/Nebine were released for public consultation in February 2005 and were expected to be finalised by July 2005.

Preliminary work has begun on the Resource Operations Plans for the Border Rivers and Condamine–Balonne.

Finalisation of the Border Rivers Resource Operations Plan is dependent on the outcome of negotiations under the Inter-Governmental Agreement between Queensland and New South Wales.

Australian Capital Territory

The IAG encourages the Australian Capital Territory and New South Wales to complete their negotiations on the form of a Cap to apply to the Australian Capital Territory and the surrounding region.

Salinity

Highlights 2004–05

In 2004–05 Ministerial Council:

- noted that significant progress has been made in implementing the Basin Salinity Management Strategy (BSMS) in 2003–04 as reported by the Independent Audit Group for Salinity (IAG–Salinity)
- noted the areas highlighted by the IAG–Salinity as requiring additional effort, including assessment of salinity impacts of new irrigation development, improvements to the salinity registers, and activities to align catchment planning with end-of-valley salinity targets
- noted that South Australia has demonstrated its salinity accountability for the period 1988–2003 and endorsed the Commission's decisions in this regard
- agreed to adopt the end-of-valley targets for salinity submitted by New South Wales, Queensland and South Australia.

In 2004–05 the Commission:

- commended South Australia on the extensive and rigorous assessment that it has undertaken of salinity credits and debits due to accountable actions since 1988
- agreed that South Australia has kept its total of salinity credits in excess of salinity debits since 1988 and approved South Australia's estimated salinity credits and debits for inclusion in the Salinity Register A
- noted that in South Australia due to the delayed groundwater impacts, a long-term salinity impact has been set in train due to post-1988 new irrigation development associated with water trade, and that a zoning policy has been developed to direct future irrigation development away from high impact zones (and into low impact zones)
- adopted new cost functions to simulate the economic effects on water users of the salinity, salt load and flow regime in the River Murray, in accordance with Schedule C Clause (36) to the Agreement
- approved the BSMS 2005–08 summary work program developed by the BSMS implementation working group, and including the risks and recommendations identified by the IAG–Salinity.



Performance assessments and achievements

The IAG–Salinity undertook its second audit during November 2004. It identified significant progress in

- establishing baseline conditions
- setting end-of-valley targets
- accreditation of models to evaluate salt loads in streams
- developing approaches to evaluating the impacts of permanent water trade
- establishing Salinity Registers A and B.

The IAG–Salinity had concerns about delays in implementing some of the rolling five-year reviews of the valleys; the limited capacity and skills available for identifying and evaluating within-valley trade-offs when making investment decisions in regional plans; delays in implementing within-valley management actions; lack of progress in setting up monitoring systems appropriate to the targets set within valleys; and the problems associated with longer-term maintenance of systems, data management and information generation.

Junction of Darling and Murray rivers, Wentworth, New South Wales, November 2004

(Photo: Michael Bell)

Basin Salinity Management Strategy 2001–15

The Basin Salinity Management Strategy 2001–15 provides a comprehensive approach to addressing one of the most challenging environmental issues facing the Basin and is consistent with the Integrated Catchment Management Policy (ICM Policy). Targets established for river salinity in each tributary valley and the Murray-Darling system itself reflect shared responsibility for action between valley communities and between states. It provides a stable and accountable framework that, over time, will generate confidence in progress of joint efforts to manage salinity.

Under the BSMS, partner governments have agreed over the next 15 years to:

- develop capacity to implement the BSMS
- identify values and assets at risk
- set salinity targets
- manage trade-offs with the available within-valley options
- implement salinity and catchment management plans
- redesign farming systems
- target reforestation and vegetation management
- construct salt interception works
- ensure Basin-wide accountability through monitoring, evaluating and reporting.

The BSMS implementation working group met four times during 2004–05, initiating a range of activities to ensure effective implementation of the BSMS.

Communications

The BSMS Communications Plan, which provides a strategic overview and direction, has been developed and approved by the BSMS IWG. Priority actions under the plan include improving information exchange between the MDBC and the partner governments, and communicating in a consistent way the positive achievements and challenges related to the implementation of the BSMS across the Basin.

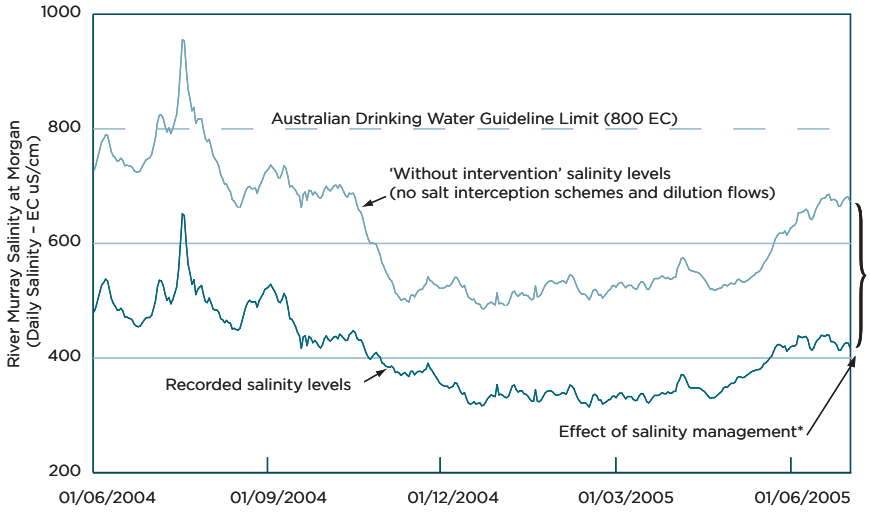
Basin salinity target

Salinity levels in the River Murray, with the exception of the Lower Lakes, were very low during 2004–05 — well below the Basin salinity target (less than 800 EC for 95 per cent of the time at Morgan in South Australia). This was due



to a number of factors, including a high proportion of flows sourced from Hume and Dartmouth storages and low levels of saline groundwater in flows from the Mallee and Riverina plains. Salinity levels in other areas, however, including lakes Albert and Alexandrina, rose due to a lack of flushing flows, and large volumes of salt continue to accumulate in the floodplains of the lower reaches of the river.

Figure 3.3: Daily salinity levels at Morgan, mid May 2004 – mid May 2005



*Salinity effect ranges between 170 EC (20th percentile) and 260 EC (80th percentile) for this period.

Table 3.2: Historical salinity data at Morgan

Time interval	Average (EC)	50 percentile (EC)	95 percentile (EC)
1 year July 04 – June 05	394	374	519
5 years July 00 – June 05	466	451	667
10 years July 95 – June 05	505	507	710
25 years July 80 – June 05	591	565	1010

Basin salinity strategy achievements

In response to the IAG–Salinity findings and in planning for the implementation of core elements of the strategy, a priority work plan has been developed and agreed to by Commission. The plans encompass key implementation themes including assessment of irrigation impacts, salt interception works, in-stream salinity management, catchment planning and implementation and ensuring basin-wide accountability.

The *BSMS Implementation Report 2003–04* was endorsed by Commission in March 2005. Ministerial Council agreed to publicly release the *Report of the Independent Audit Group for Salinity 2003–04* and a non-technical summary brochure in April 2005.

A third modelling forum was held in April 2005. The main outcomes were to:

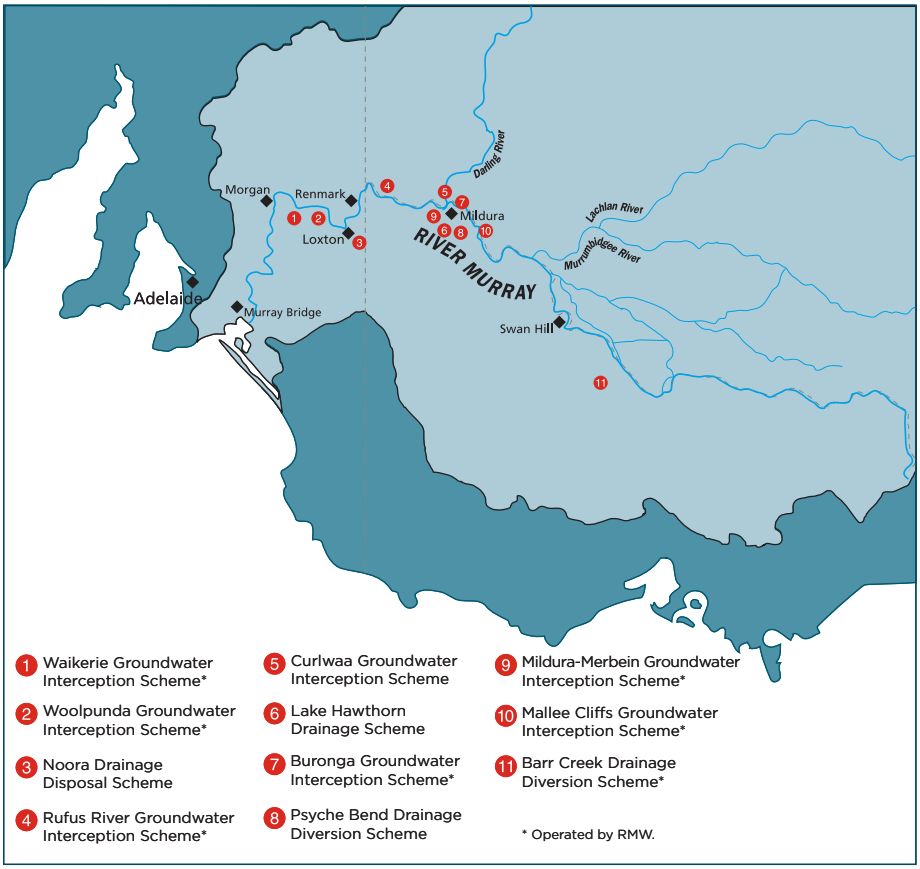
- establish confidence in the use of models in policy formulation
- highlight the need for access to data across jurisdictions and institutions
- communicate the benefits of modelling to regional catchment authorities.

Salt interception schemes

RMW operates seven jointly funded salt interception schemes along the banks of the Murray River (see Figure 3.4). These schemes intercept saline water flows that would otherwise enter the River, thereby keeping its salinity at acceptable levels.

The efficiency and capacity of the existing schemes are constantly monitored, and further schemes are being investigated and constructed. The salt is captured in disposal basins; investigations are continuing into the commercial use of the resulting products. Successful disposal will place salinity mitigation on a more sustainable basis.

Figure 3.4: Salt interception schemes



Barr Creek Drainage Diversion Scheme (Victoria)

This scheme was effective in reducing the salt load reaching the River Murray. With the exception of a number of short duration pump outages due to either power failure or repairs, pumping from Barr Creek was in accord with the current operating rules. During the year 12 068 ML of water containing 54 913 tonnes of salt was diverted from Barr Creek to the Tutchewop Lakes.

Mildura-Merbein Scheme (Victoria)

This scheme operated in accordance with the operating criteria, although pumping rates on some of the wellpoints were slightly below design capacity. Due to a number of recurring operational problems, four of the pumping sites have been out of service for most of the year. Remedial investigations are continuing in conjunction with the investigations to optimise salt interception within the Sunraysia region.

Mallee Cliffs Interception Scheme (New South Wales)

Scheme performance during the year has ensured that the scheme continues to significantly reduce impacts of saline groundwater on downstream salinity. Efforts are continuing to optimise the performance of the scheme to provide the best possible outcome for the River Murray. Additional groundwater monitoring bores have been installed in the area of the alternative enhanced leakage pit.

Buronga Salt Interception Scheme (New South Wales)

The Buronga Interception Scheme was originally built in 1979 with upgrade work carried out in 1988. In June 2004 approval was granted to rehabilitate and augment this scheme to replace the deteriorating infrastructure and provide additional interception capacity as part of the integration of salt interception in the Sunraysia region.

Work has now been completed on the rehabilitation and augmentation of this scheme. A total of 9.9 km of pipeline has been constructed, together with eight new groundwater pumping stations. The new bore sites optimise groundwater benefits in Victoria as well as in New South Wales. In addition, the rising main to the disposal basin includes spare pumping capacity to address future regional disposal requirements.



Woolpunda Salt Interception Scheme (South Australia)

In general, the Woolpunda Salt Interception Scheme has achieved its design targets. Consequently the pumping rates have been reviewed, resulting in a general reduction of flow and the opportunity to maximise off-peak power use.

In addition, a review of the original monitoring bores was undertaken during the year. This work has quantified salt loads entering the River valley and identified what has been retained within the floodplain. Based on this work, the operation of the scheme can be modified to control salt reaching the floodplain and/or the River.

Waikerie Salt Interception Scheme (South Australia)

An extensive review of the Waikerie Salt Interception Scheme was carried out in 2004–05 to identify further interception opportunities to the west of these works, as well as possible enhancements of the original works. This has resulted in the pumping rates of individual bores being reduced without compromising the effectiveness of the scheme to minimise pumping while maintaining scheme effectiveness.

In addition, further interception opportunities have been identified and will be presented to the Commission for consideration during 2005–06.

Outfall structure for the Buronga Salt Interception Scheme

(Photo: Arthur Mostead)

Rufus River Salt Interception Scheme (South Australia)

All four wellpoint lines have been successfully operating in accordance with the operating criteria and have drawn the groundwater levels down to just below target. The implementation of an effective iron bacteria control system, together with the more recently implemented methods of acid cleaning of the spears and pipelines, have greatly assisted with keeping the scheme operational and significantly increasing the intervals between cleaning operations.

In accordance with Schedule C to the Agreement, and as stated in the BSMS Operational Protocols, a program of joint works and measures currently involving an additional four schemes has been established to offset the predicted future increase on the average salinity at Morgan arising from accountable actions and delayed impacts by a total of 61 EC by December 2007. These are outlined below.

Pyramid Creek Salt Interception Scheme

In December 2002, approval was granted to construct the Pyramid Creek Salt Interception and Harvesting Scheme as a joint work as defined in Schedule C of the Agreement, at a total estimated cost of $12.7 million.

Pyramid Creek is an enlarged natural stream in northern Victoria that is used as a major irrigation carrier. Approximately 50 000 tonnes of salt enters Pyramid Creek each year from highly saline regional groundwater discharge, mainly in the upper reaches. Water not diverted for irrigation eventually enters the River Murray via the Kerang Lakes, the Loddon River and the Little Murray River.

The Groundwater Interception Scheme will intercept this saline groundwater before it impacts on the Ramsar-listed wetlands (Kerang Lakes) and the River Murray and will provide 4.3 EC benefits to the River Murray at Morgan. In addition, to offset the operations and maintenance costs of this scheme, a financial arrangement has been negotiated with a commercial salt harvester to harvest salts from this interception works. To this end an agreement between Goulburn-Murray Water and Pyramid Salt Pty Ltd has been executed.

During 2004–05, stage 1 work was completed. This involves approximately one-third of the interception works and approximately half of the salt harvesting ponds. Work has begun on stage 2 of these works.



Bookpurnong Salt Interception Scheme

In March 2003, the Ministerial Council approved the construction of the Bookpurnong Scheme as a shared scheme between a Joint Work and a State Action as defined in Schedule C to the Agreement at a total estimated cost of $11.1 million.

The Bookpurnong – Lock 4 Preliminary Land and Water Management Plan, prepared in 1999 by the Loxton and Bookpurnong Local Action Planning Group, identified the need for an integrated solution to issues of floodplain degradation, irrigation drainage disposal and saline groundwater discharge to the River Murray. The plan included three main elements: improvement of an on-farm irrigation efficiency; interception of saline groundwater before it reaches the river; and disposal of intercepted water through an existing and underused pipeline to Noora Basin.

It is estimated that the interception of saline groundwater will achieve a total benefit at Morgan of 32.5 EC units (20.5 EC for the joint works component and 12 EC for the State Action component).

Construction of the bore field and stage 1 of the pipe-laying contract were completed in June 2004. Stage 2 of the pipe-laying to collect saline water from 13 floodplain bores is expected to commence in July 2005. Stage 3 of the pipe-laying, to complete the highland borefield connections, will be carried out in 2005–06.

Loxton Salt Interception Scheme

This scheme is an extension of the Bookpurnong Salt Interception Scheme and was also identified by in the Bookpurnong – Lock 4 Preliminary Land and Water Management Plan.

In March 2004, the Ministerial Council approved the construction of the Loxton scheme as a shared scheme between a Joint Work and a State Action as defined in Schedule C of the Agreement at a total estimated cost of $24 million.

It is estimated that the interception of saline groundwater will achieve a total benefit at Morgan of 16.5 EC units (12.5 EC for the Joint Works Component and 4 EC for the State Action component).

During 2004–05 around 50 per cent of the observation and production bores were drilled and pipes have been delivered for the laying of about 7 km of 450 mm diameter MPVC pipeline, which is expected to begin in September 2005.

Subject to funding, the scheme is expected to be fully commissioned by early 2008.

Integration and optimisation of salt interception in the Sunraysia region

A comprehensive study to investigate possibilities for optimising salt interception in the Sunraysia Region was initiated during 2000–01. The study takes a regional 'no borders' approach incorporating the Mildura–Merbein, Buronga, Mallee Cliffs and Psyche Bend salt interception schemes.

In June 2004 the Commission was advised that the study had been finalised and reviewed. Based on the findings of this study, the Commission agreed to the establishment of a Sunraysia Regional Steering Committee to oversee a cross-border approach to salt interception and to immediately progress a program of investigations, which includes the establishment of an integrated monitoring program, review disposal requirements in the region, rehabilitation and augmentation requirement for the Mildura–Merbein interception scheme and future operation of lakes Hawthorn and Ranfurly.

Commission Salinity Registers

The Commission Salinity Registers are the primary record of partner government accountability for salinity debits and credits.

Register A lists salinity credits and debits for actions that have occurred after the baseline date (1 January 2000 for Queensland and 1 January 1988 for New South Wales, South Australia and Victoria) including their salinity (EC) effect at Morgan and salinity damage cost to downstream water users.

Register B records debits for actions that occurred before the baseline date ('Legacy of History'), their EC effect at Morgan, and their salinity damage cost. It also records credits for actions taken after the baseline date that will offset these impacts.

A summary of the Commission Salinity Registers A and B is presented in Table 3.3.



Table 3.3: Summary of credits and debits (in equivalent EC) to Salinity Registers A and B (currently transitional)

SUMMARY – COMMISSION REGISTER A	NSW	Vic	SA	Qld	Total
Credits and debits from joint schemes	14.8	14.8	0	0	29.5
Credits and debits from state actions	–8.5	–4.8	5.1	0	–8.2
Balance – Register A	6.2	10.0	5.1	0	21.3
SUMMARY – COMMISSION REGISTER B	**NSW**	**Vic.**	**SA**	**Qld**	**Total**
Credits and debits from joint schemes	0	0	0	0	0
Credits and debits from delayed Salinity impacts	–3.8	–4.1	–8.6	–0.3	–16.7
Balance – Register B	–3.8	–4.1	–8.6	–0.3	**–16.7**
Balance – Register A and B	**2.5**	**5.9**	**–3.6**	**–0.3**	**4.6**

*Note: Negatives indicate salinity debits. Please refer to the *BSMS Annual Implementation Report 2003–04* for the detailed Salinity Register entries.

Sustainable Rivers Audit 2004–05

The Sustainable Rivers Audit (SRA) is a river health assessment program that started in July 2004 after successful trials over the previous three years. It aims to provide consistent, Basin-wide information on the health of the Basin's rivers in order to promote sustainable land and water management. To achieve this, the program has now developed indicators and methods for river health assessment that are robust and consistent across catchments (and jurisdictions) and will be used repeatedly over time.

The SRA program, through the partner agencies, undertakes data collection across the Basin across three indicator themes – field sampling for fish and macroinvertebrates and modelling for hydrology – and then reports using a standard set of indicators. The program has identified three more indicator themes to be further developed – physical form, riparian vegetation and floodplain health.

Highlights

The SRA program design was finalised, with governance structures put in place and a joint monitoring effort, using consistent methods, started across Queensland, New South Wales, Victoria, South Australia and the Australian Capital Territory.

The first full year of monitoring was completed in June 2005, with some 500 sites across the Basin sampled for macroinvertebrates and fish.

Information is now being assembled to enable the first SRA Implementation Report to be prepared by the Independent Sustainable Rivers Audit Group and tabled to Commission in December 2005. This report will build towards the first audit of basin river health, which will be tabled for Ministerial Council in 2007–08.

Achievements

The Sustainable Rivers Audit Implementation Working Group (SRAIWG) has representation from each of the five partner governments and the CAC. The working group is responsible for overseeing the implementation of the SRA. Four meetings were held during 2004–05 and one year of implementation has been effectively supervised through this group.

The Independent Sustainable Rivers Audit Group has provided direction for the new themes and development and ecological advice to the implementation themes over the first year of the audit. It has also formalised its schedule for audit reporting and the processes for providing advice to the SRAIWG.

Financial service agreements were established between the MDBC and each partner government to formalise the cost-sharing arrangements for the audit.

Mapping of stream networks and site selection was completed for 16 of the 23 valleys in the Basin. Fish and macroinvertebrate sampling was completed to schedule, covering nearly half the Basin. Technical reference groups have been established to support current sampling for each theme (fish and macroinvertebrates) and the three new themes under development over the next three years (physical form, floodplain health and riparian vegetation).

Personnel involved in the Sustainable Rivers Audit first annual meeting, Albury, June 2005

(Photo: Greg Long (MDBC))

A communication plan and a program evaluation plan (covering conceptual development, risk management, program design review and quality assurance) have been developed.

The SRA program report, published in November 2004, sets out the basis for the program and describes the monitoring program in detail.

Native Fish Strategy

In May 2004 the Native Fish Strategy (NFS) was released by the Chairman of the Murray-Darling Basin Ministerial Council. This strategy is designed to bring communities and governments together to ensure that the Basin sustains viable native fish populations throughout its rivers over the next 50 years. The first year of the strategy has been successful in establishing management arrangements to achieve the objectives of the strategy over the next 50 years.

Highlights

During 2004–05, significant activities have included:

- increasing awareness of the strategy across the Basin
- establishing the infrastructure for implementing the NFS, including the Fish Management and Science Committee and 'on-ground' NFS coordinators in each jurisdiction
- constructing and monitoring the performance of fishways at locks and weirs along the River Murray
- refining and promoting the 'demonstration reach' concept
- major projects on fish recruitment and lateral movement in the Barmah–Millewa Forest; daughterless carp; resnagging; and the quantification of fish in water supply off-takes.

Annual implementation report

The Native Fish Strategy completed its first annual implementation report in June 2005. This report provides a framework for the reporting of national and state progress towards implementation of the NFS.

The first year of the strategy has been successful in setting up a way forward for native fish management over the next 50 years. The implementation report provides a synopsis of work in each of the six key areas of the strategy:

- rehabilitating fish habitat
- protecting fish habitat
- managing fish translocation and stocking
- protecting threatened species
- controlling alien fish species
- managing riverine structures.

Future NFS annual implementation reports will continue to track the progress made in each of the jurisdictions in regard to native fish management, as well as that made by the Commission itself. Copies of the annual implementation report are available from the MDBC office or the MDBC website <www.mdbc.gov.au>.



Sea to Hume Dam fish passage program

During the past year, fishways were completed at Lock 7, Lock 9, and at Tauwitchere Barrage.

A total of 59 821 fish were sampled from the Lock 1–3 sites between Sept 2001 and Feb 2005. So far 4747 fish have had Passive Integrated Transponder (PIT) tags inserted as part of the Murray River Fishways Assessment Program; 2266 downstream of Locks 1–3 and 2481 in the vicinity of Lock 7 and 8.

Golden perch and common carp were the most abundant PIT tagged species recorded at the Lock 7 and 8 fishways followed by Silver perch, Murray cod and Bony herring.

Investigative work continued on a number of innovative projects designed to improve the effectiveness and cost efficiency of future fishways.

PIT tag being inserted into common carp

(Photo: Arthur Mostead)

Community stakeholder group's Darling River tour

On 16 May 2005, members of the MDBC Community Stakeholder Group, NFS coordinators and MDBC NFS program staff left Moree for a week-long tour of the Darling River. The purpose of this tour was to engage the Darling River community, raise awareness of the NFS, and discuss local issues relating to native fish in the region.

Children learning the story of the Golden perch, Warrego River, Queensland

(Photo: Arthur Mostead)

Native fish and wetlands workshop

On 7 and 8 June 2005, the MDBC hosted a workshop entitled 'Native fish and wetlands', another in the series of workshops held under the NFS. Fish scientists and managers, as well as representatives from local government, catchment management authorities, recreational fishing, and the conservation movement, attended the workshop. Participants heard presentations from a number of experts the ecology and management of both native and alien fish in wetlands, and discussed means of raising community awareness of these issues. Key recommendations and a prioritised action plan will be included in the proceedings of the workshop, which will be finalised in late 2005.

Murray cod reference group

Following a recommendation from the successful workshop on the management and conservation of Murray cod in June 2004, a Murray cod reference group was formed to advise on key issues such as:

- the identity, size, structure and dynamics of cod populations
- the level of fishing catches from cod populations



- community liaison and involvement
- the adequacy of current management arrangements to protect the Murray cod.

Carp control

The MDBC funded $1.38 million in 2004–05 towards the development of 'daughterless carp' technology by the Pest Animal Control Cooperative Research Centre. Medaka (Japanese rice fish) was selected for testing of different daughterless genetic constructs. These constructs have been built and integrated into the Medaka fish, which are then grown to adulthood and crossed with suitable offspring to determine whether a daughterless construct works. This allows scientists to see whether the construct is present and functioning in the right way, creating male fish only. To date, two constructs have reached this stage of development.

Some of the other projects under this program that contribute to the overall focus on carp management include:

- validating the age of carp from sub-tropical parts of the Murray-Darling catchment
- integrated tagging for determining movement and migration of carp
- identification of 'hot spots' of carp reproduction
- development of a national generic response plan for incursions of alien freshwater fish
- sensory attractants/repellents for control of pest fish.

As well, improvements in design and performance continue to be made by officers of Arthur Rylah Institute and others on the Williams' 'Carp Separation Cage' for use at fishways.

Demonstration reaches

Raising awareness

Raising the awareness of the demonstration reach concept with the community and partner governments is critical to its success. Accordingly, papers were presented at key conferences in 2004–05, including the Fourth Australian Stream Management Conference in Launceston, October 2004 and the Fourth National Waterwatch Conference in Melbourne, February 2005.

Workshop in Queensland

Representatives from Queensland state agencies, regional bodies, Landcare, research institutions, fishing organisations and conservation groups met at a demonstration reach workshop in Stanthorpe during May 2005. The workshop was an opportunity for participants to learn more about the demonstration reach concept, to discuss existing opportunities and activities, identify potential demonstration reach sites, and to agree a way forward to establish demonstration reach sites in the Queensland Murray-Darling Basin.

Publications

During the last year the MDBC released the *Native Fish Strategy Annual Implementation Report 2003–04*. This reports on the first year of implementation of the NFS and provides a framework for reporting on progress at both state and Basin level. Future reports will continue to track progress in implementing the NFS by partner governments and by the Commission.

A range of publications was also developed to raise awareness on issues such as the role of large woody debris as fish habitat, fish tagging technology, and the concept of demonstration reaches.

Indigenous Action Plan

The Indigenous Action Plan (IAP) project team finalised a series of Nation-based forums. The team also established a relationship with Indigenous groups in the northern Basin, with a facilitator to support this process and to assist in establishing a consistent approach on both sides of the Queensland–NSW border.

The IAP team held a series of meetings with Indigenous policy staff from the various partner governments of the Basin to develop a collaborative working relationship. This will both facilitate future IAP implementation processes and the sharing of knowledge to create a synergy between state and Australian Government policy and the IAP.

Throughout the year the Murray Lower Darling Rivers Indigenous Nations (MLDRIN), the Community Advisory Committee (CAC), the IAP project board, and the integrated catchment management policy committee (ICM PC) each contributed to the preparation of the IAP.

Basin Communities Program

The aims of the MDBC's Basin Communities Program (as established by the MDBC 2001 Human Dimension Strategy) are to:

- build the capacity of the natural resource management sector in the Basin
- support good working partnerships between Basin communities and the partner governments.

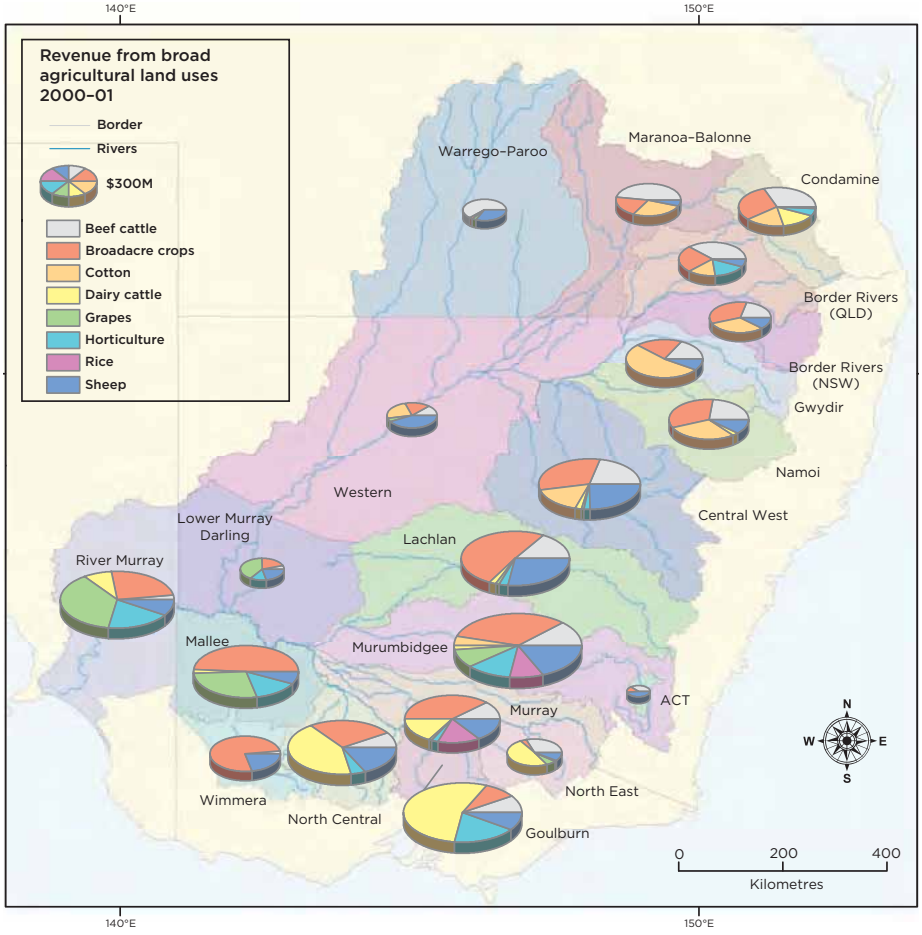
Capacity-building activities this year include:

- commencement of course 3 of the MDB Leadership Program. This brings the total number of leadership course participants to 47
- completion of a major study on quantifying and valuing land use change in the Murray-Darling Basin that trialled a new, more cost-effective way of using remote sensing to estimate land and water use in the Basin. The report also provides information on land use and agricultural revenue on a catchment basis, as shown in Figure 3.5.

Briefing of participants in the ANU Field Studies program by members of the local community aboard PS *Ruby*, Wentworth, New South Wales, April 2005

(Photo: John Reid)

Figure 3.5: Amount and proportions of gross revenue from broad agricultural land uses by catchment management region in the Murray-Darling Basin, 2000–01



(Source: MDBC)

The MDBC continues to support the Cooperative Venture for Capacity Building in Rural Industries (managed through the Rural Industries Research and Development Corporation). The Cooperative Venture provided a submission to a House of Representatives inquiry into rural skills training and research in May 2005, based on studies undertaken over the last two years which outlined the changing nature of agricultural extension in Australia.



Activities supporting good working partnerships between Basin communities and Commission partner governments include the following:

- A collaboration between the MDBC, NSW Department of Infrastructure, Planning and Natural Resources and the Murrumbidgee Catchment Management Authority, to support the National Museum of Australia and Museum of the Riverina to develop an online community exhibition Pass the Salt. This demonstrates the impact of large-scale environmental change, namely salinity, on the community in and around Wagga Wagga, New South Wales.
- A collaboration between the MDBC, the Queensland Department of Natural Resources and Mines, the Australian Government Department of Environment and Heritage and the Queensland Murray-Darling Committee, for an Indigenous oral history project in the Maranoa–Balonne, Queensland.
- Under the Commission's Native Fish Strategy and in conjunction with relevant agency and catchment authorities, a study of community perceptions, risks and opportunities of demonstration reaches for native fish in six reaches in the Basin.
- Work with New South Wales and Queensland natural resources agency staff to support a community-led initiative focusing on improved natural resource management in the Darling Basin.

Research into river environments

Research projects into river ecology totalling $2.04 million were conducted during the year through ongoing support to the Murray-Darling Freshwater Research Centre at Albury and Mildura and the CRC for Freshwater Ecology. This support enabled laboratories at Mildura, Albury and Goondiwindi to undertake projects that investigate the importance of river–floodplain interactions, environmental flows and the ecology of wetlands.

One study completed during the year investigated the ecology of Menindee Lakes and their response to flooding. It provided critical information for the management of these lake systems and resulted in the production of a set of management guidelines for ephemeral deflation-basin lakes. These guidelines provide a reference for managers, containing advice on the duration, depth, rate, frequency, timing and variability of flood events in these lakes.

The National River Contaminants Program, our partnership with Land and Water Australia, showed excellent results in this final year of funding, with a series of projects providing:

- predictions of the loss of biodiversity induced by increasing salinity
- improvements in the management and application of fertilisers
- measurements of endocrine-disrupting chemicals in river environments
- insights into sediment and nutrient fluxes following bushfires.

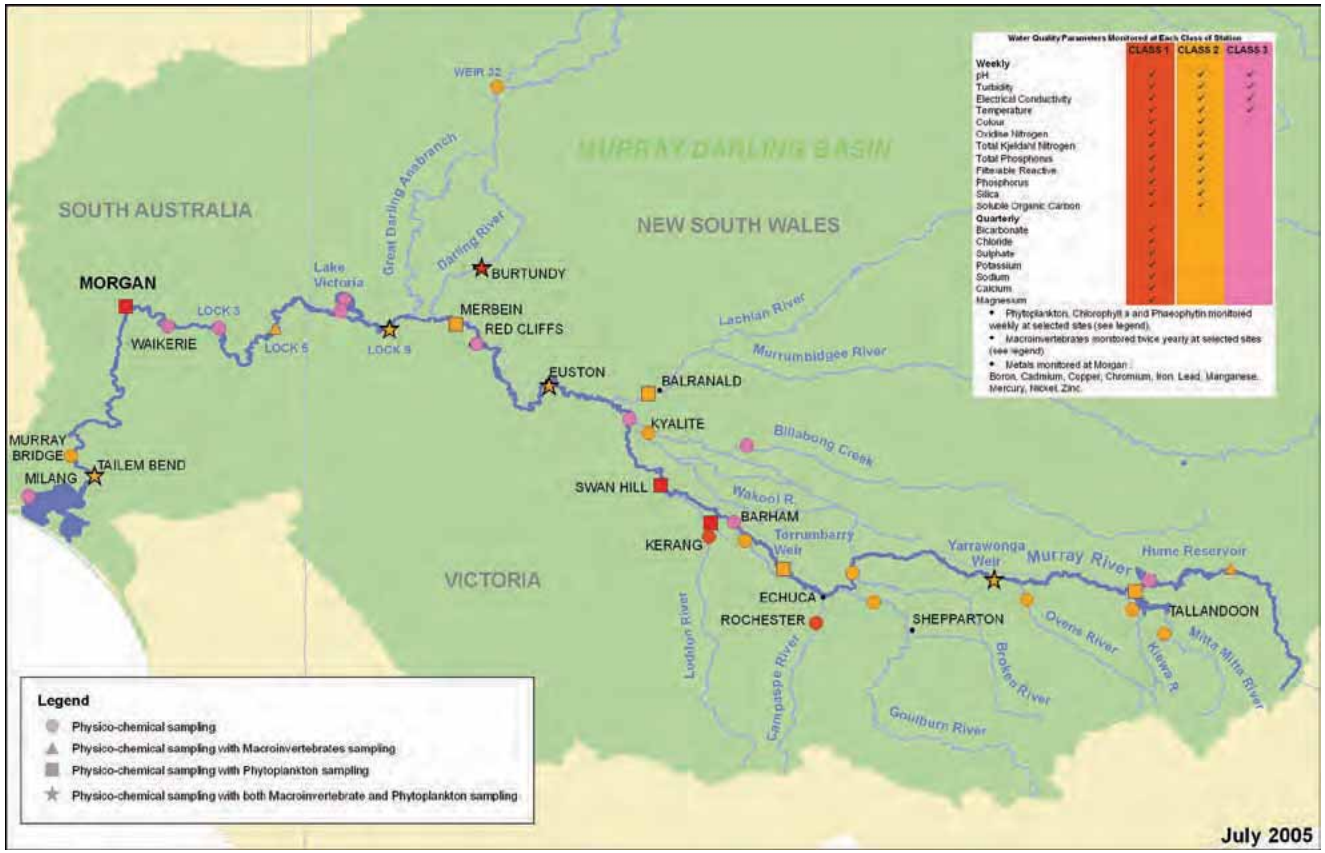
In addition to these projects, a major study into physical and biological responses to flow continued at Narran Lakes and a number of studies were also conducted into factors affecting communities and habitats of native fish.

River Murray Water Quality Monitoring Program

The long-term Water Quality Monitoring Program underwent the third and final stage of a review, which has substantially improved and updated the program (see Figure 3.6). Revised objectives have given a more targeted focus to the monitoring. New physico-chemical parameters have been included in some sites and other parameters now seen as redundant have been removed from other sites. Further analyses have been identified for the macroinvertebrate and phytoplankton sampling which will allow these results to better complement the physico-chemical data. The review included a useful history of the program and explained the background to this statutory requirement. The review is documented in the report *Review of the River Murray Water Quality Monitoring Program*, due to be published in July 2005. The new monitoring arrangements will start at the beginning of July 2005.

The program provides the baseline information on the current status and trends in water quality in the River Murray, with all research and investigations relating to the River relying on this foundation knowledge. Data from the program, at 35 locations along the Murray Valley going back to 1978, is available from the Commission by emailing <DataRequests@mdbc.gov.au>.

Figure 3.6: Revised MDBC River Murray Quality Monitoring Program



Research and communication

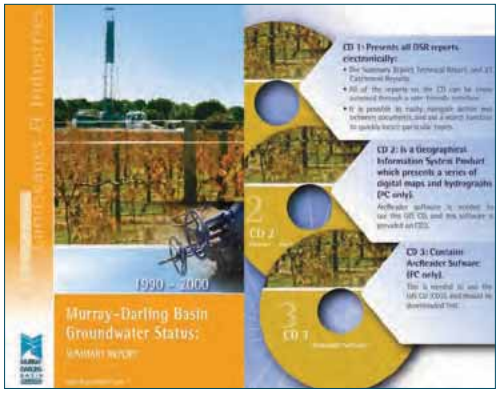
The need to better understand the complex systems of the Murray-Darling Basin and to more effectively inform management responses and decision-making underlies the MDBC's investment in research and communication.

During 2004–05, there has been a focus on communicating the outcomes from the research programs, funded through the Strategic Investigations and Education program, which have run for approximately 10 years.

Dryland program

Groundwater Status Report

The production of the Groundwater Status Report (GSR) information package has been a key achievement of the dryland program, and has allowed target audiences, including state agency staff, regional hydrogeologists and catchment managers, to more easily access groundwater data from across the Basin.



This information package makes use of free GIS software to allow users to access Murray-Darling Basin groundwater in a spatial context, and encourages users to access different levels of detail according to their information requirements. Demonstration workshops for this information package have been held across the Basin.

This Groundwater Status Report will be compiled every five years, with the next one due to begin at the end of 2005. It will incorporate feedback from an evaluation of the GSR process and an information package.



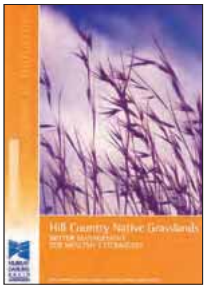
National Dryland Salinity Program

The MDBC, as a major partner of the National Dryland Salinity Program (NDSP), continued its involvement in the NDSP Enhanced Communication Year through the distribution and promotion of its integrated communication products, including a resource directory and action manual for catchment managers and an interactive CD-ROM.

Other

Other publications that have been produced or are currently in production as part of the MDBC's Knowledge Series include:

- *Hill country native grasslands*: a report on better management for healthy catchments and a summary brochure.
- *Dryland and urban salinity costs across the Murray-Darling Basin*: an overview and guidelines for identifying and valuing the impacts of salinity.



Irrigated Regions Program

The Irrigated Regions Program (IRP) has been an MDBC program since 1992. In that time, some 70 individual projects have been completed through an estimated investment of over $40 million by the MDBC and other organisations.

Actions to disseminate information on the IRP programs include the collation of project summaries and the production of 'theme reports' that are intended to communicate the key findings of work undertaken by the IRP to a variety of audiences, including the Commission and Ministerial Council, and others involved in water management and policy development.

A number of theme reports are currently in that will communicate outcomes of the IRP covering topics such as groundwater and channel seepage.

NSW Fisheries staff doing a fish stock audit on Gil Gil Creek near Mungindi on the Queensland – New South Wales border

(Photo: Arthur Mostead)

4

4. Corporate services

(Photo: Arthur Mostead)

MDBC staff participating in an environment clean-up day

Secretariat

Support services to the Murray-Darling Basin Ministerial Council and the Murray-Darling Basin Commission are provided through the Secretariat. Along with the full range of secretariat services to the Council and Commission, in 2004–05 the Secretariat began providing support to the high-level committees within the Commission office – the Finance Committee, the Audit Committee, the River Murray Water Advisory Board and The Living Murray Board.

Ministerial Council met in November 2004 and again in April 2005, the latter including a joint meeting with the Community Advisory Committee. The Commission met in September 2004, November 2004, March 2005 and June 2005. Twelve high-level committee meetings were supported throughout the year.

In addition, the Secretariat manages out-of-session decision-making processes for Council, Commission and high-level committees. The corporate record of all agendas, papers, minutes and reports for these committees is maintained by the Secretariat along with membership details for the Council and Commission. Appendixes A and C detail the membership of Ministerial Council and the Commission respectively.

From early 2004, the Secretariat commenced a coordinating role for the management of the Murray-Darling Basin Agreement, including tracking the progress of amendments through the parliaments of partner governments. A master copy of the Agreement is maintained and public versions issued as amendments are incorporated. Amendments agreed in 2001 and 2002 were in train, with tabling processes in the partner governments begun but not finalised by June 2005.

The Manager Secretariat is also the Executive Officer of the Community Advisory Committee and, along with the staff of the Secretariat, supports the activities of the CAC (reported on separately).

Management of human resources

Overview

The priority for the Human Resources team in 2004–05 was the development and implementation of contemporary human resources policies and procedures to support the operational needs of the MDBC and the development of a Human Resources Strategic Plan for the future.

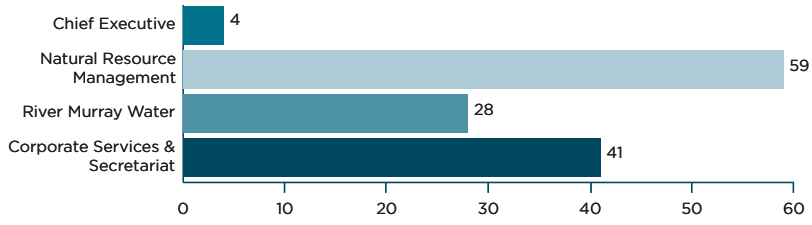
Workforce planning, recruitment and retention

A number of senior positions in the Commission were filled in 2004–05 including the Chief Executive, General Manager Natural Resources, Director Water Policy Coordination and Director River Murray Environmental Management. There were significant changes in the structure of the Natural Resource Management Division to better align with the overall natural resource management priorities of the Commission.

In 2004–05 the total number of fixed-term employees employed by the Commission was 123 and the attrition rate was approximately 10 per cent.

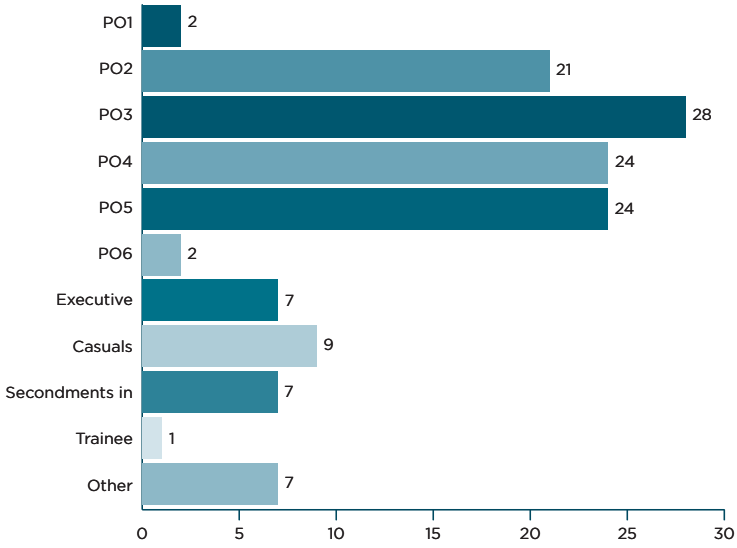
The majority of staff are employed in the Natural Resource Management Division, illustrated in Figure 4.1.

Figure 4.1: MDBC employees by division



The Commission's salary structure is based on six broad salary bands (Professional Officer (PO) levels 1–6). Figure 4.2 shows the number of employees classified according to salary bands.

Figure 4.2: MDBC employees by classification bands



Female employees constitute 53 per cent of Commission employees; the average age of employees is 41 years.

Senior Executives

All Senior Executives are employed under five-year contracts that specify their conditions of employment. In 2004–05 Executive pay rises were aligned with the 4 per cent increase provided for all staff in the Commission's Certified Agreement.

Performance management

A key highlight for 2004–05 was the implementation of the refreshed Performance Management and Development Scheme (PMDS) and a review of individual career development plans. The system is now on an annual cycle with all performance assessments to be completed by the end of May each year. Individual employees' PMDSs will reflect the goals set out in the Commission's Strategic Plan.

Occupational health, safety and welfare

The Commission continues to promote improved work practices and attitudes for a sustainable health and safe work environment. The Employee Assistance Program commenced in September 2004 and OSA Group was selected as the successful contractor to provide this service.

An OH&S audit of the Commission Office was conducted in September 2004 and all audit recommendations were implemented by June 2005. The Commission held OH&S training for all managers and staff and training for staff in manual handling and ergonomic assessments as preventative measures for workplace injuries during the year.

The Commission continues to promote a healthy balance between work and private life through the use of flexitime, time off in lieu for senior officers, personal carers' leave, provision of lunchtime 'yogalates' classes, support for employees in sporting events, inclusion of family members at work functions and training of employees in the resolution of workplace harassment. The healthy workplace culture of the Commission is supported by the normal use of sick leave and by the fact that there have been no stress compensation claims.

Rewards and recognition

The Commission held its inaugural rewards and recognition ceremony for employees in March 2005, demonstrating its commitment to building a modern, flexible workplace where individual, team and organisational achievement is practised and valued. The Commission recognises the significant benefits in investing in its people consistent with the benefits available to other partner contracting governments.

Awards were presented for outstanding contribution by a team or employee, outstanding contribution to safety, outstanding contribution by a support employee, leadership and service to the community. The rewards and recognition policy also promotes informal awards throughout the year that recognise the high achievements of individual staff members or teams.

Learning and development

The Commission's Learning and Development Framework, which supports the Commission's goals to be a learning organisation, was endorsed in December 2004.

The Commission provides professional development opportunities and supports employees in undertaking development activities. There is alignment between learning and development activities and the Commission's business planning processes through the Performance Management and Development Scheme.

The Commission's learning and development framework concentrates on five distinct but complementary elements:

1. external studies support (study leave)
2. specialised training relating to a specific project or program
3. corporate initiatives including leadership programs
4. attendance and participation at significant conferences/seminars
5. the MDBC management development program.

The Commission will monitor and evaluate its learning and development strategy in 2005–06 to ensure it remains effective in meeting key organisation goals.

Chief Executive's awards

The Rewards and Recognition Initiatives were identified during 2004 as part of a series of inter-related HR policies for implementation within the Commission. Their development involved the cooperation and assistance of the Workplace Consultative Committee (WCC) and reflected the desire of the WCC and management to put in place a suitable arrangement for acknowledging the efforts of staff generally. The winner of the award for outstanding contribution by a team or employee was the RMW Production Team.

When nominated, the team was noted for providing an effective 24/7 service in a difficult year. It demonstrated a commitment to 'not waste a drop' during a prolonged and severe drought. The team, which is fundamental to the Commission's reputation as a competent and respected water manager, undertook a number of new initiatives during the year. It also demonstrated a willingness and enthusiasm to train new members and devolve responsibilities as individuals' skills developed.

(Photo: Kevin Ticehurst)

The River Murray Water production team—winners of the award for outstanding contribution by a team or employee. *Back row, left to right*: Damian Green, Janice Coggan, Jim Foreman, Peter Shaw, Neville Garland, Sandie Brown. *Front row, left to right*: Julianne Martin, Heather Peachey, Chris Diaconu, Judy Swann, Bryan Harper

The Outstanding Service awards are designed to acknowledge both performance and commitment to the Commission over the longer term.

(Photo: Kevin Ticehurst)

This year there were 13 recipients of the 10-year service awards: *(left to right)* Brian Lawrence, Ray Leister, Paul Nanninga, Keryn Cobden, Scott Keyworth, Robert Triggs, Maurice Layne, Simon Pellatt, Judy Andrews, Andy Close, Joanne Roberson, Bryan Harper (*absent*: Trevor Jacobs)

Workplace relations

The Commission and employees continue to work cooperatively through the Workplace Consultative Committee (WCC) to improve workplace relations in the Commission. Executive Management of the Commission and staff representatives meet regularly to address workplace relations matters. The WCC will play a pivotal role in forthcoming negotiations for the next Certified Agreement.

Information and communication technology

Strategic Plan

A high-level ICT Strategic Plan was completed in December 2004. Key recommendations of the plan have been implemented and have resulted in:

- establishment of the Information Management Committee (IMC) to oversee ICT governance and risk management
- establishment of an ICT Reference Panel to advise the IMC and to manage, document and communicate the Commission's Enterprise Architecture
- increased resource levels within the ICT Services unit to mitigate identified risks to service continuity.

The ICT Strategic Plan will be updated to support the Commission's Strategic Plan and will be underpinned by operational plans for each of the areas in the Commission responsible for delivering ICT services.

Infrastructure

Three key infrastructure initiatives commenced in 2004–05.

1. Storage consolidation based on the purchase of a base level Storage Area Network. This investment will enable storage to be managed independently of servers. It allows the integration of Unix-based and Windows-based storage, and it represents a scalable storage solution which can grow to cater for future information storage needs.


2. Server consolidation based on virtual servers. Like most organisations, the Commission has experienced significant growth in the number of physical servers required to support application and information requirements. This initiative allows a single physical server to host many virtual servers, providing efficiencies in terms of capital and operating costs and providing improved management capabilities.
3. Infrastructure to establish a Commission extranet. This will support new initiatives like the Sustainable Rivers Audit that require the Commission to collaborate with stakeholders located outside of the Commission Office.

This year has also seen the introduction of the use of personal digital assistant (PDA) devices in the form of the Blackberry, providing staff with mobile access to voice and email services.

The level of resources and effort needed to secure the Commission's ICT systems has grown significantly. New measures are being considered to:

- improve identity management
- secure and protect information
- improve defences against viruses and spy ware
- defend client workstations and laptops.

Applications

A lot of effort has gone into improving the records management capabilities of the Commission Office. The records management policies of the Commission have been updated through consultation with staff. A new business classification scheme has been developed and an information container structure implemented consistent with this scheme. This has been done in parallel with a migration to the latest version of the Commission's records management software and has been accompanied by extensive staff training.

Applications supporting the human resource function have been upgraded providing improved executive reporting capability and additional functionality. A web-based interface to the application, which will provide staff with ready access to their personal information and streamline processes such as application for leave, is scheduled for implementation.

New and upgraded financial applications have been established to support improved financial management and reporting.

Client services

Additional resources have been established to support ICT incident management and problem resolution. The new help desk software that has been implemented to document incidents, problems and resolutions will lead to improved service levels and reporting capability.

Corporate communications

Media relations

Issues management through the use of a comprehensive media tracking log has improved the MDBC's ability to focus on, manage and build on specific areas of communication throughout 2004–05. The log was used to identify journalists and their specific requirements so that media relations became more proactive.

The ongoing use of video news releases using contemporary and archived footage enabled the MDBC to portray the Basin and its natural resource management issues in a visual format more closely aligned to its and its partner governments' perception, rather than the often sensational broader media industry view.

Media contact networks were maintained and the number of media releases issued remained stable at about two or three per month.

Two internal two-day media and presentation skills workshops were conducted using consultants Econnect. Working journalists from television, radio and print were guest professionals during these workshops.

Media protocols and other communications requirements were re-iterated to staff both through media training and the MDBC email system.

Several events that took place during 2004–05 provided the MDBC with opportunities to build upon relationships with partner governments. An informal network of natural resource management communicators was started to maximise opportunities, reduce duplication and streamline aspects of common projects.

MDBC website

The number of visitors to the MDBC website and the number of pages they viewed during 2004–05 increased steadily to nearly double the previous year. Hits were regularly over one million a month, pages viewed averaged about 130 000 per month, and individual visits about 25 000 per month. The most consistently sought-after areas throughout the year were River Murray Water weekly reports, media releases, the online encyclopaedia (especially wildlife, mining and agriculture pages) and general information on natural resources, environmental issues and salinity.

In response to changing needs of stakeholders, a new, re-developed version of the website was initiated. The new site will be driven by an open source content management system which will allow individual areas of the MDBC to update their own subject areas. A prototype was completed within the reporting period with the final version due to replace the current site in 2005–06.

E-letter

The Commission's monthly email newsletter was re-designed in html format with a hyperlinked menu. By the end of the reporting period, subscriptions totalled 830, an increase of more than a third on the previous year. The newsletter continued to reflect important developments and initiatives within the Commission and throughout the Basin. Towards the end of 2004–05 items from the newsletter were being used in a trial commercial radio segment project called 'Basin News'.

MDBC library

MDBC maintains a small specialised library, staffed part-time, offering loan and reference services to staff and external clients. The library operates within the MDBC Communications team, working to complement an efficient information provision service. The collection comprises more than 12 200 items, with steady growth, in particular, over recent years. Between November 2002 and June 2005, 4300 items were added to the collection.

The collection continues to be a valuable technical source for information, with 113 requests for information recorded between October 2004 and June 2005.

All MDBC publications continued to be sent to 166 libraries throughout the basin, including school, university, public and council libraries, ensuring that stakeholders have ready access to hardcopy. While this increases the MDBC's profile and product among the community, it also encourages a good working relationship between Basin libraries and the MDBC library.

The library continued working on a project to restore the MDBC's historical images. The project will continue to encapsulate the restoration and access to the remainder of these images, as well as the storage, access and indexing of audiovisual material. This project foreshadows a disaster management plan to be undertaken in 2005–06.

From October 2004 the librarian also contributed to the production of Newscan, a weekly selective compilation of newspaper stories taken from the major dailies and regional papers across the Basin. Articles are copyright cleared and are arranged within the following broad subject categories: integrated catchment management, water quality, water sharing, riverine ecosystem health and terrestrial biodiversity. This free information service is distributed each week to some 400 subscribers.

Marking Sturt's epic Murray-Darling journey

The Commission sponsored several activities to commemorate the 175th anniversary of the arrival of Captain Charles Sturt at the junction of the mighty Murray and Darling rivers at Wentworth on 23 January 1830.

The celebrations began in Merbein and travelled down the Murray, just like Sturt, to historic Wentworth. The Commission saw the anniversary as a way to bolster and deepen a sense of local and Basin history within the community. The main organisations involved were the PS Ruby Board of Management, the Wentworth and Merbein Historical Society, local service clubs and the Wentworth Main Street Events Committee.

The poster pictured at left was used to publicise the events.

(Source: MDBC)

Lock 1 under construction, Murray River, 29 March 1918

The picture shows the cofferdam with the River Murray behind. A derrick-mounted pile driving a 72-foot long barge is moored behind the dam, and other barges and a paddle steamer can be seen in the background.

A gravel hopper for concrete batching is to the left and the light rail and workmen's site can be seen on the right bank of the river.

5

5. Corporate governance

(Source: MDBC)

River Murray Commissioners and staff before the first Commission meeting on 14 February 1917

Functions of the Murray-Darling Commission

The Murray-Darling Basin Agreement states that the functions of the Commission are to:

- advise the Ministerial Council in relation to the planning, development and management of the water, land and other environmental resources of the Murray-Darling Basin
- assist the Ministerial Council in developing measures for the equitable, efficient and sustainable use of water, land and other environmental resources of the Murray-Darling Basin
- coordinate the implementation of or, where the Ministerial Council so requires, to implement any measures authorised by the Ministerial Council
- give effect to any policy or decision of the Ministerial Council, which the Ministerial Council requires the Commission to implement.

The Basin

The Murray-Darling Basin, which covers the catchments of the Murray and Darling rivers, occupies an area of over one million square kilometres in south-eastern Australia (see Figure 5.1). Consisting largely of plains rising to the Great Dividing Range on its eastern and southern rim, the Basin covers 14 per cent of Australia's land area and contains Australia's largest and most developed river system. It contains only 6 per cent of the continent's water resources, approximately two-thirds of the value of irrigated agriculture and approximately 40 per cent of Australia's total gross value of agricultural production come from the Basin. It is home to over 2 million people and another million outside the Basin rely upon its water resources.

Climatic conditions and natural landscapes vary dramatically across the Basin – from sub-tropical climates in the far North, cool humid eastern uplands, and dry semi-arid and arid western plains, to the high alpine country of the Snowy Mountains. The Basin is home to an extraordinary diversity of communities,

landscapes and natural resources. This diversity is accentuated by the volatility in both the Basin's weather and the economic conditions in which its industries compete.

Table 5.1 presents the evolution of the management of the Murray-Darling Basin. Table 5.2 shows significant milestones for the Basin between 1992 and 2005. Figure 5.2 shows the current structure of the Commission.

Figure 5.1: The Murray-Darling Basin

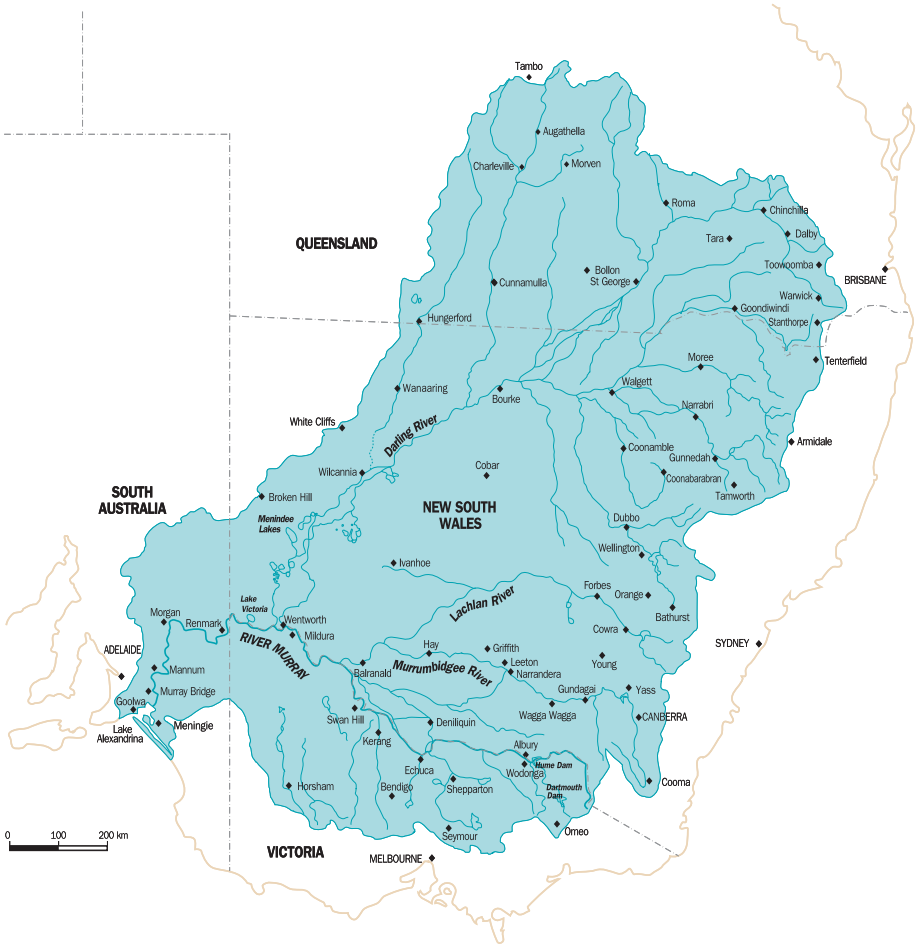


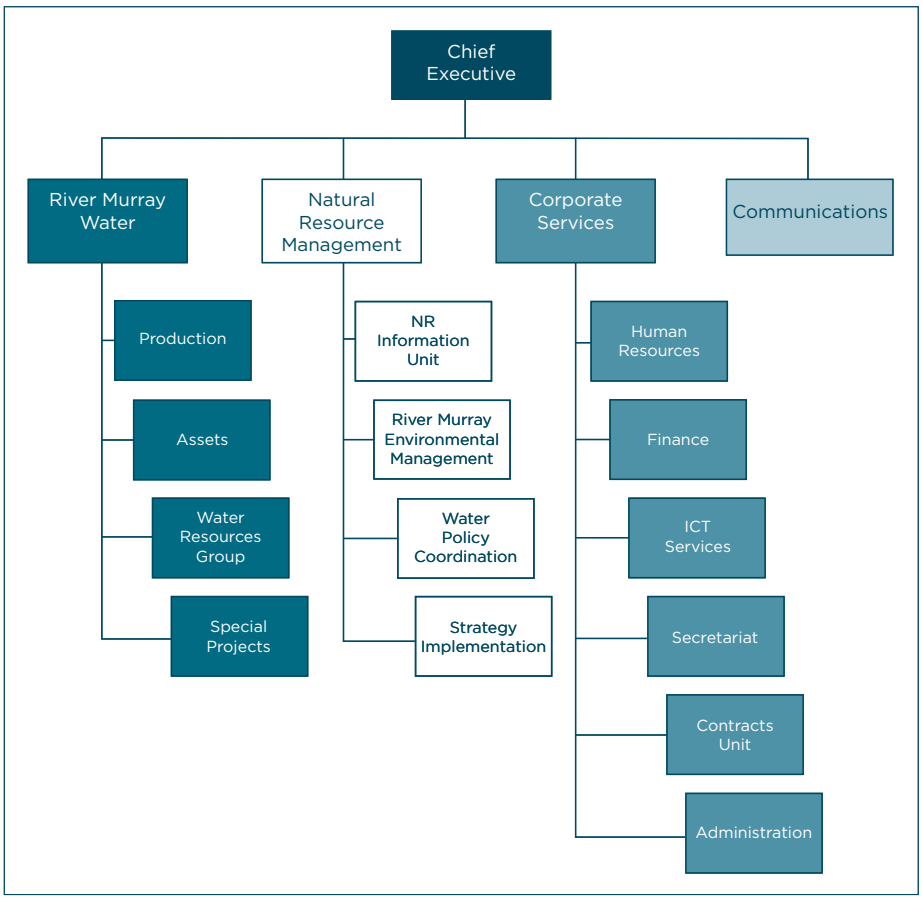
Table 5.1: Evolution of Murray–Darling Basin management

Time	Key Issues	Outcome
pre 1900	Self-governing state colonies unable to resolve inter-state water management.	Interstate conflicts on water use and navigation.
1900–17	Drought, community action & Federation provide impetus for creation of River Murray Commission.	River Murray Waters Agreement adopted by Commonwealth, NSW, Victorian & South Australian governments. River Murray Commission established.
1917–80	Conservation, regulation & diversion works constructed. Analysis & management of water resources.	Large-scale irrigation development in each state.
1970–80	Growing awareness of water quality problems, particularly salinity & water logging.	Recognition of limits of the River Murray Water Agreement.
1983	Recognition of need to manage on whole Basin basis.	Agreement to extend role of River Murray Commission • states to refer relevant proposals before implementation • water quality targets to be set.
1985–86	All governments of the Basin agree that water, land & environment management must coordinate to achieve Basin-wide sustainable outcomes.	Murray Darling Basin Ministerial Council and Commission established by statute. Community Advisory Committee created reporting to Council.
1988 to date	Need for continuously improved knowledge base to deal with: • salinity & water logging in irrigation areas • long-term dryland salinity impacts due to vegetation clearing • unsustainable increase in diversions • declining health of rivers • loss of biodiversity.	Ministerial Council links governments and communities in funding and implementing: • salinity & drainage strategy (1988 & 2001) • agreed limits on water diversions (1995) • adoption of ICM strategy (2001) • The Living Murray initiative – healthy working River (2003).

Table 5.2: MDBC and member governments: significant milestones in the Basin, 1992–2005

Year	Significant milestones
1992	MDB Agreement signed
1994	COAG Water Reform Framework
1996	Emergency response – Hume Dam structural changes initiating major remedial works
1997	NSW – Water pricing introduced
1998	MDB 'Cap' on water diversions set for NSW, SA, Vic 'River Murray Water' established
1999	NSW – White Paper on Water Reform released
2000	Moratorium on further water diversions in Qld while 'Cap' developed QLD *Water Resource Act 2000*
2001	MDBMC Environmental Works & Measures Program MDBMC Integrated Catchment Management Policy Statement MDBMC Basin Salinity Management Strategy
2003	MDBMC Native Fish Strategy COAG Water Reform Agenda refreshed and $500m announced to address water overallocation MDBMC The Living Murray First Step decision to balance water needs of all users NSW – NRM reforms announced 15 October 2003 including introduction of the *Natural Resources Commission Act 2003* and *Catchment Management Authorities Act 2003* QLD Regional NRM bodies established SA – *River Murray Act 2003*
2004	Victorian White Paper released 23 June 2004 National Water Initiative and 'MDB' Intergovernmental Agreements signed The Living Murray Business Plan approved MDBMC Sustainable Rivers Audit NSW – Catchment management authorities constituted as statutory bodies Jan 2004 QLD – Water Resource Plan in place for the Border Rivers, Moonie & Warrego, Paroo, Bulloo & Nebine catchments ACT – 'Think Water, Act Water' strategy released SA – *Natural Resources Management Act 2004* NSW – Water Act implementation (part of NWI reforms) NSW – Water Sharing Plans introduced, July
2005	The Living Murray Business Plan and water recovery proposals activated QLD – Water Resource Plan in place for Condamine & Balonne catchments

Figure 5.2: MDBC organisation chart as at 30 June 2005



Sustainability report: context and drivers of change

Context

The Murray-Darling Basin Commission, in addressing natural resource management issues in the Basin, operates within the philosophy and framework of its 'Integrated Catchment Management Policy'. The policy recognises that the Basin's natural resources are part of a connected system, with interactions between land and water and their associated biophysical processes. Economic, environmental and social factors all have an impact on – and are affected by – the condition of the Basin's natural resources.

The quality and quantity of the water in the Basin's catchments directly affect all aspects of life in the Basin. That quality and quantity is essential to cities and towns and to the economic success of the region's industries and communities – not just for irrigated agriculture but also for more recent growth industries such as tourism. Basin residents (including those in urban centres such as Canberra), and many outside the region, obtain their drinking water from the Basin and will require ongoing access to a quality resource.

The sustainability of the Basin's natural resource base is also essential to the social and cultural wellbeing of the Basin's communities. Water occupies a central position in the fabric of many communities – it provides a social and leisure focus and a spiritual dimension.

At the time of preparing a revised Strategic Plan in mid 2004, the Murray-Darling Basin was experiencing a prolonged period of extreme drought, with inflows to the highly regulated and utilised Murray River system for the preceding four-year period being the lowest on record. Dramatically reduced water availability and widespread water use restrictions have severely eroded the economic foundation of the Basin and aggravated stresses on the natural resource base.

The stresses created by these extreme weather conditions, together with a deepening understanding of significant emerging threats to the Basin's shared natural resources, have reinforced the need for flexible and innovative natural

resource management approaches that can respond to the competing needs of all users, while ensuring ecosystems have sufficient water to thrive.

The Commission's member governments and the Basin communities recognise water as essential to human life and to the economic, environmental, social and cultural value of the Basin's water and other natural resources. Their response to the challenges of implementing sustainable natural resource management over the last decade has been marked by significant milestones, shown in Table 5.2.

The Commission aims to maintain and develop a safe and productive workforce and work environment. Initiatives to support this goal are detailed in the Management of Human Resources in Chapter 4 of this report and cover workforce planning, retention, recruitment, performance management, occupational health and safety, rewards and recognition and learning and development.

Drivers of change

Four broad 'drivers of change' present major challenges for the Basin. They are shaping the state of the Basin and will continue to do so over the next five years.

Global developments

The impact of global climate change, which may substantially change climatic behaviour across the Basin, poses long-term challenges to Basin resources and their users. In addition, the impact of global market trends on the Basin's export industries can be significant in affecting the prosperity of communities and land and water use decisions.

Basin level factors

There is a set of environmental, economic and social factors at a Basin level that have the potential to significantly affect the quality and quantity of water and natural resources. Although work to identify risks to shared resources is an ongoing task, a number of risks are already known:

- unrestrained growth in groundwater use, posing a potential threat to the ability of surface water supplies to be delivered within Cap limits


- broader land use and management practices, including reforestation, which affect water quality and availability
- unrestrained growth of farm dams and floodplain harvesting, which can increase water interception in catchments
- more efficient irrigation practices, which may reduce return flows to rivers
- bushfires, which can potentially impact catchments generally, and the Basin's water specifically.

The magnitude and complexity of these challenges will stretch the capacity of Australia's human resource expertise in natural resource and water management.

National Water Initiative

MDBC member governments have committed to the National Water Initiative (NWI) and to delivering the following NWI commitments in the Basin:

- nationally compatible water access entitlements
- nationally functioning water markets
- best practice water pricing
- integrated management of environmental water, and
- improved measuring and monitoring and provision of information regarding the use of water.

The NWI constitutes a new framework. Roles within that framework, and relationships between the National Water Commission and bodies such as the Murray-Darling Basin Commission, will further evolve and crystallise over the next five years. However, this Strategic Plan aims to ensure that relevant Commission activities are aligned with NWI commitments.

Member governments' initiatives

The Commission's member governments are committing increased effort within their own jurisdictions. Governments recognise that simultaneously meeting the demands of wealth production and the environment requires continual attention to the sustainable management of land and water resources. Initiatives such as water resource planning and the National Action Plan for Salinity and Water Quality (NAPSWQ) play an important and complementary role in achieving sustainable management of water and land in the Basin. They also strengthen the capacity of regional catchment management organisations to deliver catchment-wide natural resource outcomes. The Commission will work closely with its member governments to ensure activities are complementary.

In summary, the Commission and Basin communities recognise that in the long term the Basin must achieve sustainability in terms of economic, environmental and social outcomes. Indeed, without long-term sustainability on all three of these dimensions the viability of the Basin is threatened. The challenge for the Commission and partner governments is to determine at what pace they should effect transition to more sustainable natural resource management practices. In essence, the challenge is 'how quickly should change occur and, given current extreme conditions, when and how should the next changes occur?'

Given that the Commission and the Basin communities see sustainability as a core objective, the Commission has moved to integrate this philosophy into its culture, its operations, and its management systems. Reporting on sustainability is becoming increasingly important, and this component of the annual report is being progressively expanded.

The process began with the pilot 'triple bottom line' report produced by River Murray Water in 2002. Next year the annual report will be restructured to contain an expanded sustainability report, based on triple bottom line principles and including some aspects of the natural resources business and corporate functions.

The Commission's sustainability report will be expanded progressively over the two succeeding years, following in large measure the format of the 2002 'Sustainability Reporting Guidelines' published by the Global Reporting Institute (see box).

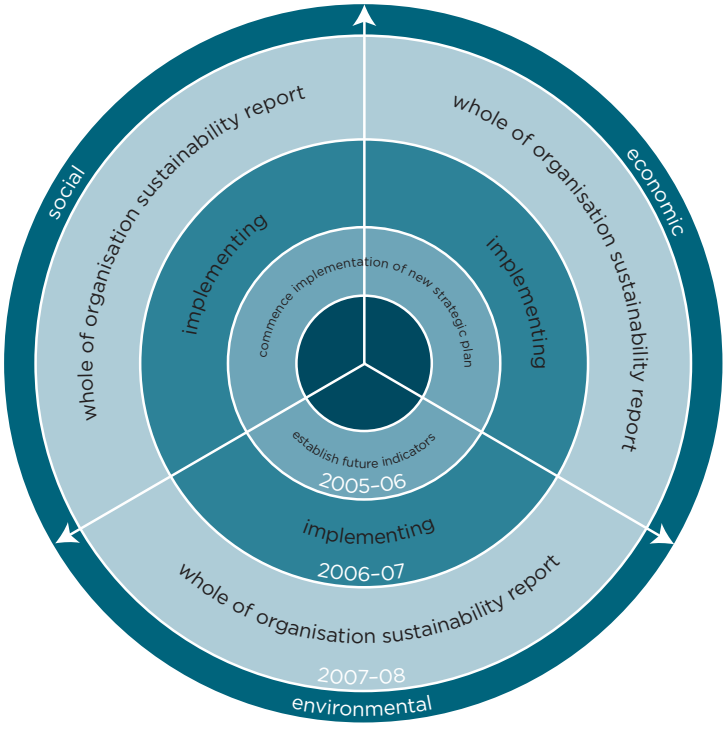
The Global Reporting Initiative (GRI) is an international organisation based in the Netherlands which develops and publishes guidelines for sustainability reporting. It is associated with the United Nations and sponsored by a number of major public and private sector organisations.
The latest published guidelines were issued in 2002, and the next revision is due in 2006. The current guidelines propose the following report contents:

1. Vision and strategy
2. Profile (organisation and operations)
3. Governance structure and management systems
4. Performance indicators – reporting on defined economic, environmental and social parameters
5. A content index relating the report to the GRI guidelines.

The Commission intends to follow the general reporting principles set out by the GRI, while recognising that the unique nature of the Commission will prevent precise compliance in every detail. It is expected that close correspondence with the GRI principles will be achieved by the report for 2007–08.

The planned development of sustainability (or 'triple bottom line') parameters and performance indicators over the next three years is shown in Figure 5.3.

Figure 5.3: Projected sustainability reporting, 2005–08



Investing in future generations

The MDBC continues to invest in improving the ability of primary school children to value natural resources through the project Special Forever. The MDBC has now expanded this investment into a series of two-day youth conferences around the Basin. These conferences involve approximately 200–250 children and are based on young people teaching each other about how to manage natural resources.

(Photo: Firestarter)

The conferences feature a range of presentations and workshops and field activities. Since November 2003 three conferences have been held. Two of these were held during the year under review—one in Toowoomba (July 2004) and one in Narrabri (August 2004).

Four further youth conferences are scheduled for 2005–06, in Adelaide, Bendigo, Canberra and Wagga. In addition, an allocation has been provided for smaller one-day workshops.

6

Australian National
Audit Office

INDEPENDENT AUDIT REPORT

To the Chairman of the Murray-Darling Basin Ministerial Council

Scope

The financial statements and President and Chief Executive Officer's responsibility

The financial statements comprise:

- Statement by the President and the Chief Executive of the Commission;
- Statements of Financial Performance, Financial Position and Cash Flows;
- Schedule of Commitments; and
- Notes to and forming part of the Financial Statements

of the Murray-Darling Basin Commission for the year ended 30 June 2005.

The President and the Chief Executive Officer of the Commission is responsible for preparing the financial statements that give a true and fair view of the financial position and performance of the Commission, and that comply with accounting standards, other mandatory financial reporting requirements in Australia, and in the form required by the Minister of Finance and Administration. The President and Chief Executive Officer of the Commission is also responsible for the maintenance of adequate accounting records and internal controls that are designed to prevent and detect fraud and error, and for the accounting policies and accounting estimates inherent in the financial statements.

Audit approach

I have conducted an independent audit of the financial statements in order to express an opinion on them to you. My audit has been conducted in accordance with the Australian National Audit Office Auditing Standards, which incorporate the Australian Auditing and Assurance Standards, in order to provide reasonable assurance as to whether the financial statements are free of material misstatement. The nature of an audit is influenced by factors such as the use of professional judgement, selective testing, the inherent limitations of internal control, and the availability of persuasive, rather than conclusive, evidence. Therefore, an audit cannot guarantee that all material misstatements have been detected.

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While the effectiveness of management's internal controls over financial reporting was considered when determining the nature and extent of audit procedures, the audit was not designed to provide assurance on internal controls.

I have performed procedures to assess whether, in all material respects, the financial statements present fairly, in accordance with the requirements of the Finance Minister, including accounting standards and other mandatory financial reporting requirements in Australia, a view which is consistent with my understanding of the Commission's financial position, and of its performance as represented by the statements of financial performance and cash flows.

The audit opinion is formed on the basis of these procedures, which included:

- examining, on a test basis, information to provide evidence supporting the amounts and disclosures in the financial statements; and
- assessing the appropriateness of the accounting policies and disclosures used, and the reasonableness of significant accounting estimates made by the President and the Chief Executive Officer of the Commission.

Independence

In conducting the audit, I have followed the independence requirements of the Australian National Audit Office, which incorporate the ethical requirements of the Australian accounting profession.

Audit Opinion

In accordance with sub-clause 84(4) of the *Murray-Darling Basin Agreement 1992*, I now report that the financial statements are in agreement with the accounts and records of the Murray-Darling Basin Commission and in my opinion:

(i) the financial statements are based on proper accounts and records;

(ii) the financial statements are in agreement with those accounts and records;

(iii) the receipt, expenditure and investment of moneys, and the acquisition and disposal of assets by the Commission during the year have been in accordance with the *Murray-Darling Basin Agreement 1992*; and

(iv) the financial statements give a true and fair view, in accordance with applicable Accounting Standards and other mandatory professional reporting requirements in Australia of the financial position of the Murray-Darling Basin Commission as at 30 June 2005, and its financial performance and cash flows for the year then ended.

Australian National Audit Office

Carla Jago
Executive Director

Delegate of the Auditor-General

Canberra

12 September 2005

MURRAY-DARLING BASIN COMMISSION
STATEMENT BY THE PRESIDENT AND CHIEF EXECUTIVE OF THE
COMMISSION ON 12 SEPTEMBER 2005

In our opinion, the attached financial statements for the year ended 30 June 2005:

(a) comply with Australian Accounting Standards and other mandatory professional requirements;

(b) give a true and fair view of the Murray-Darling Basin Commission's financial position as at 30 June 2005 and of its performance, as represented by the results of its operations and cash flows, for the financial year ended on that date.

(c) there are reasonable grounds to believe that the Commission will be able to pay its debts as and when they fall due and payable.

Rt Hon Ian Sinclair AC
President

Wendy Craik
Chief Executive

Murray-Darling Basin Commission
Statement of Financial Performance
for the year ended 30 June 2005

	Notes	2005 $'000	2004 $'000
Revenues from ordinary activities			
Revenues from Government	**3A**	**91,244**	97,026
Goods and services	**3B**	**1,808**	1,091
Interest	**3C**	**2,110**	1,890
Revenue from sale of assets	**3D**	**94**	141
Revenue on recognition of assets	**3E**	**–**	529
Revenues from ordinary activities		**95,256**	100,677
Expenses from ordinary activities			
Employees	**4A**	**10,246**	8,614
Suppliers	**4B**	**70,693**	58,456
Depreciation and amortisation	**4C**	**22,565**	15,007
Value of assets sold	**3D**	**105**	185
Write-down of assets	**4D**	**–**	27
Correction of fundamental accounting error	**4E**	**–**	422,637
Expenses from ordinary activities (excluding borrowing costs expense)		**103,609**	504,926
Borrowing costs expense	**5**	**16**	21
Net surplus / (deficit) from ordinary activities		**(8,369)**	(404,270)
Net credit to asset revaluation reserve	**11A**	**–**	148,007
Total revenues, expenses and valuation adjustments recognised directly in equity		**–**	148,007
Total changes in equity other than those resulting from transactions with owners as owners		**(8,369)**	(256,263)

The above statement should be read in conjunction with the accompanying notes.

Murray-Darling Basin Commission
Statement of Financial Position
as at 30 June 2005

	Notes	2005 $'000	2004 $'000
ASSETS			
Financial assets			
Cash	6A	**40,199**	42,583
Receivables	6B	**7,380**	5,301
Other financial assets	6C	**824**	888
Total financial assets		**48,403**	48,772
Non-financial assets			
Infrastructure assets	7A,D	**1,345,907**	1,350,259
Property, plant & equipment	7B,D	**1,002**	1,000
Intangibles	7D	**124**	–
Inventories	7E	**203**	64
Leasehold improvements	7C	**153**	162
Other non-financial assets	7F	**150**	72
Investment in joint venture entity	7G	**517**	502
Total non-financial assets		**1,348,056**	1,352,059
Total Assets		**1,396,459**	1,400,831
LIABILITIES			
Interest bearing liabilities			
Leases	8	**133**	204
Total interest bearing liabilities		**133**	204
Provisions			
Employees	9	**1,632**	1,592
Other	9	**104**	–
Total provisions		**1,736**	1,592
Payables			
Goods and Services	10A	**26,855**	22,976
Revenue received in advance	10B	**4,700**	4,655
Total payables		**31,555**	27,631
Total Liabilities		**33,424**	29,427
NET ASSETS		**1,363,035**	1,371,404
EQUITY			
Contributions by contracting Governments for purchase of assets	11A	**3,144**	3,144
Asset Revaluation Reserve	11A	**148,007**	148,007
Retained Surpluses	11A	**1,211,884**	1,220,253
TOTAL EQUITY		**1,363,035**	1,371,404
Current assets		**48,403**	48,908
Non-current assets		**1,348,056**	1,351,923
Current liabilities		**32,653**	28,471
Non-current liabilities		**771**	956

The above statement should be read in conjunction with the accompanying notes.

Murray-Darling Basin Commission
Statement of Cash Flows
for the year ended 30 June 2005

	Notes	2005 $'000	2004 $'000
OPERATING ACTIVITIES			
Cash received			
Contributions from Government		**91,449**	87,726
Goods and Services		**1,714**	1,332
Interest		**2,156**	1,842
Net GST received from Australian Taxation Office		**8,088**	6,233
Total cash received		**103,407**	97,133
Cash used			
Employees		**10,172**	8,685
Suppliers		**77,177**	64,462
Borrowing costs		**16**	21
Total cash used		**87,365**	73,168
Net cash from operating activities	**12**	**16,042**	23,965
INVESTING ACTIVITIES			
Cash received			
Proceeds from sales of property, plant and equipment		**94**	141
Proceeds from Investments		**–**	–
Total cash received		**94**	141
Cash used			
Purchase of infrastructure assets		**17,728**	20,763
Purchase of property, plant and equipment		**721**	530
Total cash used		**18,449**	21,293
Net cash (used by) investing activities		**(18,355)**	(21,152)
FINANCING ACTIVITIES			
Cash received			
Contributions by contracting Governments for purchase of assets		–	530
Total cash received		–	530
Cash used			
Repayment of lease debt		**71**	65
Total cash used		**71**	65
Net cash from financing activities		**(71)**	465
Net increase / (decrease) in cash held		**(2,384)**	3,278
Cash at the beginning of the reporting period		**42,583**	39,305
Cash at the end of the reporting period	**6A**	**40,199**	42,583

The above statement should be read in conjunction with the accompanying notes.

Murray-Darling Basin Commission
Schedule of Commitments

as at 30 June 2005

	Note	2005 $'000	2004 $'000
BY TYPE			
Capital commitments			
Infrastructure, property, plant and equipment	**(a)**	**–**	–
TOTAL CAPITAL COMMITMENTS		**–**	–
Other commitments			
Operating leases		**1,469**	2,384
Other commitments		**10,077**	5,513
Total other commitments		**11,546**	7,897
Commitments receivable		**(1,155)**	(718)
Net commitments by type		**10,391**	7,179
BY MATURITY			
Operating lease commitments			
One year or less		**964**	836
From one to five years		**505**	1,548
Over five years		**–**	–
Total operating lease commitments		**1,469**	2,384
Capital commitments			
One year or less		**–**	–
Total capital commitments		**–**	–
Other commitments			
One year or less		**5,074**	3,624
From one to five years		**5,003**	1,889
Over five years		**–**	–
Total other commitments		**10,077**	5,513
Commitments receivable		**(1,155)**	(718)
Net commitments by maturity		**10,391**	7,179

All commitments are stated inclusive of Goods and Service Tax where relevant.

(a) The Commission does not have contracts with the State Construction Authorities who carry out work on their behalf. All construction contracts are between the construction authorities and the various contractors that they engage to complete the work.

The above statement should be read in conjunction with the accompanying notes.

Murray-Darling Basin Commission
Schedule of Commitments

as at 30 June 2005

Operating leases are effectively non-cancellable and comprise:

Leases for office accommodation

Lease payments are subject to annual increases in accordance with upwards movements in the Consumer Price Index and may be renewed for up to five years at MDBC's option, following a once-off adjustment of rentals to current market levels.

Lease for office accommodation fit-out

An additional rent is paid on the office accommodation for the fit-out of the office premises. Fit-out rent is a set amount each year for the continuing term of the lease.

Lease for computer equipment

Lease payments are made for the supply of office computer equipment for a period of three years. Computer equipment rent is a set amount each year for the term of the lease. All leased equipment will remain the property of the lessor.

The above statement should be read in conjunction with the accompanying notes.

Murray-Darling Basin Commission
Schedule of Contingencies

as at 30 June 2005

	2005 $'000	2004 $'000
Contingent liabilities		
Claims for damages / costs	**-**	-
Contingent assets		
Claims for damages / costs	**-**	-
Net contingent liabilities	**-**	-

Details of each class of contingent liabilities and assets, including those not included above because they cannot be quantified or are considered remote, are disclosed in Note 13: Contingent Liabilities and Assets.

The above statement should be read in conjunction with the accompanying notes.

Murray-Darling Basin Commission
Notes to and forming part of the Financial Statements

for the year ended 30 June 2005

Note 1: Summary of Significant Accounting Policies

1.1 Objective of Murray-Darling Basin Commission

The Murray-Darling Basin Commission (MDBC) is the executive arm of the Murray-Darling Basin Ministerial Council. The Council is a partnership of six governments - New South Wales, Victoria, South Australia, Queensland, the Australian Capital Territory and the Australian Government. The partnership is enabled by the Murray-Darling Basin Agreement 1992.

The purpose of the partnership, as stated in the Agreement, is to:

Promote and coordinate effective planning and management for the equitable, efficient and sustainable use of the water, land and other environmental resources of the Murray-Darling Basin.

1.2 Basis of Accounting

The Financial Statements are required by Clause 84 of the Murray-Darling Basin Agreement and are a general purpose financial report.

The Financial Statements have been prepared in accordance with:

- Australian Accounting Standards and Accounting Interpretations issued by the Australian Accounting Standards Board; and
- Consensus Views of the Urgent Issues Group.

This report has been prepared in accordance with the historical cost convention, except for certain assets which, as noted, are held at valuation. Unless otherwise stated, the accounting policies are consistent with the prior year.

Assets and liabilities are recognised in the Statement of Financial Position when and only when it is probable that future economic benefits will flow and the amounts of the assets or liabilities can be reliably measured. Liabilities and assets that are unrecognised are reported in the Schedule of Commitments and the Schedule of Contingencies (other than unquantifiable or remote contingencies, which are reported at Note 13).

Revenues and expenses are recognised in the Statement of Financial Performance when and only when the flow or consumption or loss of economic benefits has occurred and can be reliably measured.

1.3 Revenue recognition

The revenues referred to in the notes are revenues relating to the core operating activities of the Commission.

Other Revenue

Revenue from the sale of goods is recognised upon the delivery of goods to customers.

Revenue from rendering of services is recognised by reference to the stage of completion of contracts or other agreements to provide services.

Interest revenue is recognised on a time proportionate basis that takes into account the effective yield on the relevant asset.

Revenue from disposal of non-current assets is recognised when control of the asset has passed to the buyer.

Note 1: Summary of Significant Accounting Policies *(continued)*

Revenue from Contributing Governments
Revenue received from partner governments is recognised in the year in which the expenditure relating to the contribution is expended. Any revenue which has been approved to be carried forward, in accordance with Clause 75 of the MDB Agreement, to be matched with expenditure in the next year is treated as revenue received in advance.

1.4 Receivables

Receivables for goods and services are recognised at the nominal amounts due, less any provision for bad and doubtful debts. Collectability of debts is reviewed at balance date. Provisions are made when collectability of the debt is judged to be less rather than more likely.

1.5 Transactions with the Owners as Owners

Equity injections
Contributions from partner governments which are designated as 'equity injections' are recognised directly in Contributed Equity in that year.

1.6 Employee Benefits

(i) Wages and salaries, annual leave and sick leave
Liabilities for services rendered by employees are recognised at the reporting date to the extent that they have not been settled.

Liabilities for wages and salaries (including non-monetary benefits) and annual leave are recognised in other creditors in respect of employees' service up to the reporting date and are measured at the amounts expected to be paid when the liabilities are settled. No liability is recognised for sick leave as all sick leave is non-vesting and the expected average sick leave taken in future years is considered to be less than the annual entitlement.

(ii) Long Service Leave
The liability for long service leave expected to be settled within 12 months of the reporting date is recognised in the provision for employee benefits and is measured in accordance with (i) above. The liability for long service leave expected to be settled more than 12 months from the reporting date is recognised in the provision for employee benefits and measured at the present value of expected future payments to be made in respect of services provided by the employees up to the reporting date. Consideration is given to expected future wage and salary levels, experience of employee departures and periods of service. Estimates of employee departures is based on an Australian Government Actuary report dated June 2004.

Expected future payments are discounted using market yields at the reporting date on national government bonds with terms of maturity that match as close as possible the estimated future cash outflows.

The leave liabilities are calculated on the basis of employees' remuneration, including the Agency'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 classification of annual and long service leave liabilities into current and non-current is based on the past history of payments.

Note 1: Summary of Significant Accounting Policies *(continued)*

(iii) Superannuation
Staff of Murray-Darling Basin Commission are members of the Commonwealth Superannuation Scheme, the Public Sector Superannuation Scheme and other Superannuation Schemes. The liability for CSS and PSS superannuation benefits are recognised in the Financial Statements of the Australian Government and are settled by the Australian Government in due course. Murray-Darling Basin Commission makes employer contributions to the Australian Government at rates determined by an actuary to be sufficient to meet the cost to the Government of the superannuation entitlements of the Commission's employees.

1.7 Leases

A distinction is made between finance leases and operating leases. Finance leases effectively transfer from the lessor to the lessee substantially all the risks and benefits incidental to ownership of leased non-current assets. In operating leases, the lessor effectively retains substantially all such risks and benefits. Where a non-current asset is acquired by means of a finance lease, the asset is capitalised at the present value of minimum lease payments at the beginning of the lease term and a liability recognised at the same time and for the same amount. The discount rate used is the interest rate implicit in the lease.

Leased assets are amortised over the period of the lease. Lease payments are allocated between the principal component and the interest expense.

Operating lease payments are expensed on a basis which is representative of the pattern of benefits derived from the leased assets.

Lease incentives taking the form of 'free' leasehold improvements and rent holidays are recognised as lease liabilities. These liabilities are reduced by allocating lease payments between rental expense and reduction of the liability.

1.8 Assets held by Constructing Authorities acquired with Commission funds.

Infrastructure assets used for the storage and distribution of bulk water and for related activities have been constructed with funds provided by the Commission. These assets are located in the States and operated by employees of State Government agencies. The state government agencies invoice the Commission for all expenses incurred in the operation, maintenance and renewal of these assets.

The Murray-Darling Basin Agreement requires each Constructing Authority to account to the Commission for all monies received from the Commission under the Agreement. The Commission must cause a list to be kept of both the assets it acquires and the assets Constructing Authorities acquire with funds made available by the Commission. To meet these requirements, all infrastructure assets are included in asset registers held by the Commission and accounted for in the books of the Commission as assets of the Commission. Minor plant and equipment, with short lived lives, acquired with Commission funds are included on asset lists held by the State government agencies and are expensed by the Commission in the year of purchase. Any revenue received on disposal of the minor plant and equipment being replaced is offset against the cost of the replacement equipment.

Note 1: Summary of Significant Accounting Policies *(continued)*

1.9 Cash

For purposes of the statement of cashflows, cash includes cash at bank and short term deposits held with financial institutions which have short periods to maturity, can be readily converted into cash and are subject to an insignificant risk of changes in value, net of any bank overdrafts.

1.10 Other Financial Instruments

Trade Creditors
Trade creditors and accruals are recognised at their nominal amounts, being the amounts that are expected to be settled. Liabilities are recognised to the extent that the goods or services have been received prior to the reporting date.

Contingent Liabilities and Contingent Assets
Contingent liabilities (assets) are not recognised in the Statement of Financial Position but are disclosed in the relevant schedules and notes. They may arise from uncertainty as to the existence of a liability (asset), or represent an existing liability (asset) in respect of which settlement is not probable or the amount cannot be reliably measured. Remote contingencies are part of this disclosure. Where settlement becomes probable, a liability (asset) is recognised. A liability (asset) is recognised when its existence is confirmed by a future event, settlement becomes probable or reliable measurement becomes possible.

1.11 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.

Assets acquired at no cost, or for nominal consideration, are initially recognised as assets and revenues at their fair value at the date of acquisition.

1.12 Property, Plant and Equipment (P,P&E)

Asset Recognition Threshold
Purchases of property, plant and equipment are recognised initially at cost in the Statement of Financial Position, except for purchases costing less than $2,000 in which case they are expensed (other than where they form part of a group of similar items which are significant in total).

Revaluations
Infrastructure assets are carried at valuation. Fair value is measured for infrastructure assets on the basis of depreciated replacement cost.

A revaluation was undertaken of the Commission's infrastructure assets as at 30 June 2003. The revaluation was performed by qualified independent valuers, SMEC AUSTRALIA Pty Ltd. Revaluations are completed every three years and asset values are regularly monitored to ensure that there is no material difference between the carrying value and the asset's fair value.

Frequency
Revaluations of infrastructure assets are undertaken on a three-yearly cycle.

Note 1: Summary of Significant Accounting Policies *(continued)*

Depreciation

Depreciable property, plant and equipment assets are written-off to their estimated residual values over their estimated useful lives to the Commission using, in all cases, the straight-line method of depreciation. Leasehold improvements are depreciated on a straight-line basis over the lesser of the estimated useful life of the improvements or the unexpired period of the lease.

Depreciation rates (useful lives) and methods are reviewed annually and necessary adjustments are recognised in the current, or current and future reporting periods as appropriate. Residual values are re-estimated for a change in prices only when assets are revalued.

Depreciation rates applying to each class of depreciable assets are based on the following useful lives.

	2005	2004
Motor Vehicles	**6.67 years (15% pa)**	**6.67 years**
Computers and IT equipment	**3 years (30% pa)**	**3 years**
Office Equipment	**5.88 years (17% pa)**	**5.88 years**
Furniture, fixtures and fittings	**7.69 years (13% pa)**	**7.69 years**
Infrastructure Assets	Up to 400 years based on an assessment of the useful economic life	Up to 400 years based on an assessment of the useful economic life

The aggregate amount of depreciation allocated for each class of asset during the reporting period is disclosed in Note 4C.

1.13 Impairment of Non-current Assets

Non-current assets carried at fair value at the reporting date are not subject to impairment testing.

Non-current assets carried at cost or deprival value, which are not held to generate net cash inflows, have been assessed for indications of impairment. Where indications of impairment exist, the carrying amount of the asset is compared to the higher of its net selling price and depreciated replacement cost and is written down to that value if greater.

1.14 Inventories

Inventories comprise publications and videos held for sale. Inventories held for resale are valued at the lower of cost and net realisable value.

1.15 Assets Under Construction

Assets under construction are carried at cost and capitalised when completed and ready for use. Costs include both direct and indirect costs, which can be reasonably attributed to the asset under construction.

1.16 Joint Venture Entity

In accordance with AASB 1006 *Accounting for Joint Ventures*, the Commission's interest in a joint venture entity, Murray-Darling Freshwater Research Centre is accounted for using the equity method. The share of the surplus or deficit of the joint venture entity is recognised in the Statement of Financial Performance. Details of the joint venture entity are disclosed at Note 7G.

Note 2: Adoption of Australian equivalents to International Financial Reporting Standards from 1 July 2005

The Australian Accounting Standards Board has issued replacement Australian Accounting Standards to apply from the first reporting period beginning after 1 January 2005. In the case of the Commission, these standards will be adopted for the 2005/06 reporting year. The new standards are the Australian Equivalents to International Financial Reporting Standards (AEIFRS). The purpose of issuing AEIFRS is to enable Australian financial reports to be more readily comparable to financial reports issued by entities reporting from other countries.

The AEIFRS contain certain additional provisions that will apply to not-for-profit entities, including Government agencies. Some of these provisions are in conflict with the IFRS and therefore MDBC will only be able to assert compliance with the AEIFRS.

Existing AASB standards that have no IFRS equivalent will continue to apply, including in particular *AAS 29 Financial Reporting by Government Departments*.

Accounting Standard AASB 1047 Disclosing the Impact of Adopting Australian Equivalents to IFRS requires that the Financial Statements for 2004-05 disclose:

- An explanation of how the transition to the AEIFRS is being managed; and
- A narrative explanation of the key differences in accounting policies arising from the transition.
- Any known or reliably estimable information about the impacts on the financial report had it been prepared using AEIFRS and
- If the impacts of the above are not known or reliably estimable, a statement to that effect.

The purpose of this Note is to make these disclosures.

Management of the transition to AASB Equivalents to IFRSs

MDBC has taken the following steps for the preparation towards the implementation of AEIFRS:

The MDBC Audit Committee is tasked with oversight of the transition to and implementation of the AEIFRS. The General Manager - Corporate Services is formally responsible for the project and will report regularly to the Audit Committee on progress against the formal plan to be approved by the Committee.

The plan requires the following steps to be undertaken and sets deadlines for their achievement:

1. Identification of key staff, project team members and stakeholders in relation to implementing AEIFRS.
2. Identification of all major accounting policy differences between current AASB standards and the AEIFRS.
3. Identification of systems changes necessary to be able to report under the AEIFRS, including those necessary to enable capture of data under both sets of rules for 2004-05, and the testing and implementation of those changes.
4. A transitional balance sheet as at 1 July 2004 under AEIFRS has been completed and presented to the audit committee in April 2004. No material changes to the financial position were noted.

Note 2: Adoption of Australian equivalents to International Financial Reporting Standards from 1 July 2005 *(continued)*

5. An AEIFRS compliant balance sheet as at 30 June 2005 will be completed by 30 September 2005 to meet the reporting deadlines of the Australian government.
6. As at reporting date, the Commission is on track to meet these timeframes.

No system changes have been identified to ensure compliance with the new standards.

Major Changes in Accounting Policy

Changes in accounting policies under AEIFRS are applied retrospectively ie. as if the new policy had always applied. This rule means that a balance sheet prepared under the AEIFRS must be made as at 1 July 2004, except as permitted in particular circumstances by *AASB 1 First-time Adoption of Australian Equivalents to International Financial Reporting Standards*. This will also enable the 2005-2006 Financial Statements to report comparatives under the AEIFRS.

Changes to major accounting policies are discussed in the following paragraphs.

Infrastructure Assets

Infrastructure Assets are currently revalued on a three yearly cycle. Under AEIFRS, it is expected that the carrying value of these assets will be at up-to-date fair value from 2005-06. It is not expected that this change in accounting policy will materially affect the carrying value of the assets as shown under the current accounting policy however as at the date of this report, the effect has not been measured.

Impairment of Non-Current Assets

MDBC's policy on revaluation of non-current assets is at Note 1.12.

Under AEIFRS, all assets must be assessed for indications of impairment. Whilst assets on hand as at 30 June 2005 do not appear to be impaired, an annual assessment will be required under AEIFRS.

Employee Benefits

The provision for long service leave is measured at the present value of estimated future cash outflows using market yields as at the reporting date on national government bonds.

Under the new AEIFRS, the same discount rate will be used unless there is a deep market in high quality corporate bonds, in which case the market yield on such bonds must be used.

Revenue from sale of assets

AASB 1004 Revenue requires the fair value of the consideration received from the disposal of assets to be recognised as revenue. Consequently, when a non-current asset is disposed, an entity will recognise revenue for the gross proceeds received on disposal of the asset and a corresponding expense for the carrying amount.

Under the AEIFRS the Income Statement will show a single net amount for the gain / loss on disposal.

Note 2: Adoption of Australian equivalents to International Financial Reporting Standards from 1 July 2005 *(continued)*

Financial Instruments

Under the AEIFRS, AASB 132 Financial Instruments the choice of disclosing the effective interest rate or weighted average effective interest rate no longer exists. The effective interest rate must be disclosed. A more extensive split is required to be disclosed when showing the carrying amounts of financial instruments. Managements best estimate of the quantitative impacts of AEIFRS indicate as at the date of this report that no material changes are expected to the net assets reported under current Australian Accounting Standards.

The actual effects of the impacts of AEIFRS may differ from these estimates due to:

- continuing review of the impacts of AEIFRS on the Commission's operations;
- potential amendments to the AEIFRS and AEIFRS interpretations; and
- emerging interpretation as to the accepted practice in the application of AEIFRS and AEIFRS interpretations.

	Notes	2005 $'000	2004 $'000
Note 3: Operating Revenues			
Note 3A: Revenues from Governments			
Australian Government		**16,484**	16,614
New South Wales		**27,641**	26,628
Victoria		**25,820**	24,852
South Australia		**20,359**	19,522
Queensland		**875**	869
Australian Capital Territory		**270**	270
Add revenue recognised from prior year		**4,431**	12,982
Add contributions paid in prior year		**–**	250
Less revenue carried to forward year		**(4,636)**	(4,431)
Less equity contribution for purchase of assets		**–**	(530)
Total revenues from Governments		**91,244**	97,026
Note 3B: Sale of Goods and Services			
Hydro generation		**1,273**	538
Land and cottage rents		**519**	519
Sale of publications and videos		**16**	19
Other		**–**	15
Total sales of goods and services		**1,808**	1,091
Note 3C: Interest Revenue			
Interest on deposits		**2,110**	1,890
Note 3D: Net Gains from Sale of Assets			
Motor Vehicles:			
Proceeds from disposal		**94**	129
Net book value of assets disposed		**(105)**	(145)
Net (loss) from disposal of motor vehicles		**(11)**	(16)
Office Equipment:			
Proceeds from disposal		**–**	–
Net book value of assets disposed		**–**	(16)
Net (loss) from disposal of office equipment		**–**	(16)
Computers and IT equipment:			
Proceeds from disposal		**–**	12
Net book value of assets disposed		**–**	(24)
Net (loss) from disposal of computers and IT equipment		**–**	(12)
TOTAL proceeds from disposal		**94**	141
TOTAL value of assets disposed		**(105)**	(185)
Total net (loss) from disposal of assets		**(11)**	(44)
Note 3E: Other Revenues			
Revenue from Joint Venture Entity	**7G**	**–**	529

Revenue on recognition of assets for the 2003-04 financial year refers to the Commission's initial recognition of its 50% share of Murray-Darling Freshwater Research Centre joint venture with Commonwealth Scientific and Industrial Research Organisation (CSIRO). The revenue recognised in the 2004-05 year is the Commission's share of the joint venture surplus for 2004-05.

	Notes	2005 $'000	2004 $'000

Note 4: Operating Expenses

Note 4A: Employee Expenses

Wages and Salaries	**8,391**	6,675
Superannuation	**980**	839
Separation and redundancy	**–**	263
Recruitment	**283**	186
Training and development	**176**	99
Workers compensation	**44**	73
Salary oncosts	**217**	330
FBT	**102**	63
Other	**53**	86
Total employee benefits expense	**10,246**	8,614

The increase in employee expenses relates to the increase in the number of employees and the 5% salary increase as per the certified agreement.

Note 4B: Supplier Expenses

Expenditure by State Constructing Authorities	**42,118**	32,561
Consultants	**22,888**	22,029
Supply of goods and services	**5,027**	3,199
Operating lease rentals	**660**	667
Total supplier expenses	**70,693**	58,456

Note 4C: Depreciation and Amortisation

i) Depreciation			
Infrastructure, property, plant and equipment	**(a)**	**22,486**	14,947
Total depreciation		**22,486**	14,947
ii) Amortisation			
Leasehold Improvements		**79**	60
Total amortisation		**79**	60
Total depreciation and amortisation		**22,565**	15,007

The aggregate amounts of depreciation or amortisation expensed during the reporting period for each class of depreciable asset are as follows:

Motor Vehicles		**14**	41
Office Equipment		**91**	91
Computers		**282**	224
Furniture, fixtures and fittings		**18**	18
Infrastructure Assets	**(a)**	**22,080**	14,573
Leasehold improvements		**79**	60
Total depreciation and amortisation		**22,564**	15,007

(a) Depreciation expense on infrastructure assets includes an adjustment relating to prior years of $7m to reflect changes in the assessment of assets remaining life.

Note 4: Operating Expenses *(continued)*

	2005 $'000	2004 $'000
Note 4D: Write Down of Assets		
Non-financial assets:		
Investment in joint venture entity	–	27
Total write-down of assets	–	27

Note 4E: Correction of fundamental accounting error in 2003/04

The fundamental accounting error of $422.6 million disclosed in 2003/04 related to an error in the calculation of the fair value of Infrastructure Assets recognised for the first time in the 2002/03 year. The effect of this error was to reduce the carrying value of Infrastructure Assets as at 1/7/03 by that amount.

Note 5: Borrowing Costs Expense

Leases	**16**	21
Total borrowing costs expense	**16**	21

Note 6: Financial Assets

Note 6A: Cash

Cash at bank	**10,199**	13,575
Cash on hand	**–**	8
Investments	**30,000**	29,000
Total cash	**40,199**	42,583

Note 6: Financial Assets *(continued)*

	2005 $'000	2004 $'000
Note 6B: Receivables		
Goods and services	**4,455**	1,808
GST receivable from the Australian Taxation Office	**2,802**	3,324
Accrued interest	**123**	169
Total receivable (net)	**7,380**	5,301
Receivables is represented by:		
Current	**7,380**	5,301
Non-current	**–**	–
Total receivables (net)	**7,380**	5,301
Receivables (gross) are aged as follows:		
Not overdue	**7,380**	5,288
Overdue by less than:		
Less than 30 days	–	8
30 to 60 days	–	–
60 to 90 days	–	–
More than 90 days	–	5
	–	13
Total receivables (gross)	**7,380**	5,301
Note 6C: Other financial assets		
Advances to Constructing Authorities	**824**	888
Total other financial assets	**824**	888

Note 7: Non-Financial Assets

Note 7A: Infrastructure Assets

at 2003-2004 valuation (fair value)	**1,940,872**	1,928,478
– accumulated depreciation	**(613,253)**	(591,173)
	1,327,619	1,337,305
Assets under construction - at cost	**18,288**	12,954
Total Infrastructure Assets (non-current)	**1,345,907**	1,350,259

Note 7: Non-Financial Assets *(continued)*

	2005 $'000	2004 $'000
Note 7B: Property Plant and Equipment		
Motor Vehicles		
– at cost	**434**	303
– accumulated depreciation	**(64)**	(50)
	370	253
Furniture, Fittings and Office Equipment		
– at cost	**973**	927
– accumulated depreciation	**(686)**	(577)
	287	350
Computers & IT equipment		
– at cost	**1,508**	1,299
– accumulated depreciation	**(1,163)**	(902)
	345	397
Total Plant and Equipment (non-current)	**1,002**	1,000
Note 7C: Leasehold improvements		
– at cost	**509**	439
– accumulated amortisation	**(356)**	(277)
Total leasehold improvements	**153**	162

Notes to and forming part of the Financial Statements

Note 7: Non-Financial Assets *(continued)*

Note 7D: Analysis of Infrastructure, Property, Plant and Equipment

Table A - Reconciliation of the opening and closing balances of infrastructure, property, plant and equipment

Item	Infrastructure	Construction work in progress	Total Infrastructure & Construction In Progress	Motor Vehicles	Furniture, fittings & office equipment	Computer and IT equipment	Total	Computer Software
	$'000	$'000	$'000	$'000	$'000	$'000	$'000	
As at 1 July 2004								
Gross book value	1,928,478	12,954	1,941,432	303	927	1,299	1,943,961	–
Accumulated depreciation / amortisation	(591,173)	-	(591,173)	(50)	(577)	(902)	(592,702)	–
Net book value	**1,337,305**	**12,954**	**1,350,259**	**253**	**350**	**397**	**1,351,259**	–
Additions:								
by Purchase:								
Purchased	–	–	–	252	46	230	528	124
Constructed	8,890	8,838	17,728	–	–	–	17,728	–
Total by purchase	8,890	8,838	17,728	252	46	230	18,256	124
Assets recognised for the first time								
Construction projects commissioned during the year	3,504		3,504					
Construction projects transferred to Infrastructure		(3,504)	(3,504)					
Depreciation / amortisation expense	(15,000)		(15,000)	(14)	(109)	(282)	(15,405)	–
Adjustment to previous years' depreciation	(7,080)		(7,080)			21	(7,059)	
Disposals	–	–	–	(121)	–	(21)	(142)	–
As at 30 June 2005								
Gross book value	1,940,872	18,288	1,959,160	434	973	1,508	1,962,075	124
Accumulated depreciation / amortisation	(613,253)	–	(613,253)	(64)	(686)	(1,163)	(615,166)	–
Net book value	**1,327,619**	**18,288**	**1,345,907**	**370**	**287**	**345**	**1,346,909**	**124**

Note 7: Non-Financial Assets *(continued)*

	2005 $'000	2004 $'000
Note 7E: Inventories		
Finished goods (cost)	**203**	64
Total Inventories held for sale	**203**	64

All inventories are current assets.

Note 7F: Other Non-Financial Assets

Prepayments	**150**	72

All other non-financial assets are current assets.

Note 7G: Investment in joint venture entity

The Murray-Darling Freshwater Research Centre (MDFRC) was established as a joint venture between the Commission and the CSIRO. On inception, the Centre was charged with the task of carrying out medium to long-term research which would be of benefit to the management of the water resources of the Murray-Darling Basin. Investment in the joint venture entity refers to the Commission's 50% share of Murray-Darling Freshwater Research Centre joint venture with the CSIRO.

Carrying amount on recognition of investment	**502**	529
Share of joint venture entity's net operating surplus / (deficit) for the financial year	**15**	(27)
Investment in joint venture entity at the end of the financial year	**517**	502

Note 8: Interest Bearing Liabilities

Leases		
Finance Lease Commitments		
Payable:		
Within one year	**86**	86
In one to five years	**57**	143
Minimum lease payments	**143**	229
Deduct: future finance charges	**10**	25
Net Lease Liability	**133**	204
Lease liability is represented by:		
Current	**77**	71
Non-current	**56**	133
Net Lease Liability	**133**	204

The finance lease exists in relation to the fitout of offices at 15 Moore Street, Canberra. The lease is non cancellable and for a fixed term expiring on 28 February 2007. The initial term of the lease is still current and may be renewed for a further five years at the Commission's option.

The interest rate implicit in the lease is 8.75%.

	2005 $'000	2004 $'000
Note 9: Provisions		
Employee Provisions		
Annual Leave	**638**	576
Long service leave	**790**	823
Aggregate employee entitlement liability	**1,428**	1,399
On-costs	**204**	193
Aggregate employee entitlement liability and related on-costs	**1,632**	1,592
Current	**861**	769
Non-current	**771**	823
	1,632	1,592
Other Provisions		
Leadership Network	**104**	–
	1,736	1,592

Accrued salaries and wages, are disclosed at Note 10 – Payables.

Note 10: Payables

Note 10A: Goods and Services Payable

Trade creditors and accruals	**26,820**	22,976
Accrued salaries and wages	**35**	–
Total goods and services payable	**26,855**	22,976
Goods and Services payable are represented by:		
Current	**26,855**	22,976
Total supplier payables	**26,855**	22,976

Settlement is usually made net 30 days

Note 10B: Revenue Received in Advance

Carry-over of current year contributions to forward year	**4,636**	4,431
Other	**64**	224
Total revenue received in advance	**4,700**	4,655

All revenue received in advance are current liabilities.

Notes to and forming part of the Financial Statements

Note 11: Equity

Note 11A: Analysis of Equity

Item	Retained Surpluses		Asset Revaluation Reserve		Contributed Equity		Total Equity	
	2005 $'000	2004 $'000	**2005 $'000**	2004 $'000	**2005 $'000**	2004 $'000	**2005 $'000**	2004 $'000
Opening balance as at 1 July	**1,220,253**	1,624,523	**148,007**	–	**3,144**	2,614	**1,371,404**	1,627,137
Net surplus / deficit	**(8,369)**	(404,270)	**–**	–	**–**	–	**(8,369)**	(404,270)
Gross revaluation increment / (decrement)	**–**	–	**–**	226,786	**–**	–	**–**	–
Accumulated depreciation revaluation (increment) / decrement	**–**	–	**–**	(78,779)	**–**	–	**–**	–
Net revaluation increment / (decrement)	**–**	–	**–**	148,007	**–**	–	**–**	148,007
Transactions with owners:	**–**	–	**–**	–	**–**	–	**–**	–
Contributions by owners:	**–**	–	**–**	–	**–**	–	**–**	–
Equity injections	**–**	–	**–**	–	**–**	530	**–**	530
Closing balance as at 30 June	**1,211,884**	1,220,253	**148,007**	148,007	**3,144**	3,144	**1,363,035**	1,371,404

	2005 $'000	2004 $'000

Note 12: Cash Flow Reconciliation

Reconciliation of net surplus to net cash from operating activities

Net surplus / (deficit)	**(8,369)**	(256,263)
Depreciation / amortisation	**22,565**	15,007
Share of joint venture (surplus)/deficit	**(15)**	–
Assets recognised for the first time	**–**	(529)
Loss on disposal of assets	**11**	44
Correction of fundamental error	**–**	422,637
Net credit to asset revaluation reserve	**–**	(148,007)
Net write down of non–financial assets	**–**	27
Decrease in advances held by construction authorities	**64**	–
(Increase) in net receivables	**(2,065)**	(2,053)
(Increase) in inventories	**(139)**	(47)
Decrease in prepayments	**(78)**	32
Increase / (decrease) in employee provisions	**40**	(71)
Increase in supplier payables	**3,880**	2,488
(Decrease) in revenue received in advance	**45**	(9,300)
Increase in other provisions	**103**	–
Net cash from operating activities	**16,042**	23,965

Note 13: Contingent Liabilities and Assets

Quantifiable Contingencies

Nil

Unquantifiable Contingencies

In October 2002, a landowner commenced proceedings against the Commission and former Commissioners in the Supreme Court of New South Wales in relation to the release of water from Hume Dam in 1996. The Commission is defending the action.

In 2003, the Commission was joined as a party to a matter before the courts related to land rights. It is not possible to estimate any liabilities arising out of this matter.

Note 14: Executive Remuneration

	2005	2004
The number of executives who received or were due to receive total remuneration of $100,000 or more:		
$100,000 to $109,999	**–**	1
$110,000 to $119,999	**–**	1
$120,000 to $129,999	**1**	–
$130,000 to $139,999	**–**	3
$140,000 to $149,999	**1**	1
$170,000 to $179,999	**2**	2
$190,000 to $199,999	**1**	–
$230,000 to $239,999	**–**	1
$250,000 to $259,999	**1**	–
The aggregate amount of total remuneration of executives shown above.	**$1,059,397**	$1,361,516
The aggregate amount of separation and redundancy/termination benefit payments during the year to executives shown above.	**Nil**	$227,561

"Remuneration" refers to salary, accrued leave, performance pay, employer superannuation, estimated cost of motor vehicles provided as part of a remuneration package, spouse travel entitlements, separation and redundancy/termination benefit payments and related on costs including fringe benefits tax paid during 2004-2005 for officers concerned with the management of the Office of the Commission where the total paid in respect of an individual exceeded $100,000.

Note 15: Remuneration of Members of the Commission

Remuneration is paid to one executive member. No remuneration is paid to non-executive members who are State or Commonwealth public servants or officers of State agencies. The remuneration paid to the executive member is less than $100,000.

	2005	2004
	$	$

Note 16: Remuneration of Auditors

Remuneration to be paid to Australian National Audit Office		
for auditing Financial Statements for the reporting period	**31,000**	43,000
AEIFRS opening balance sheet audit	**7,000**	–
	38,000	43,000

No other services were provided by the Australian National Audit Office

Remuneration paid for internal audit services during the reporting period	**100,679**	–
Other services	**137,637**	31,000
	238,316	31,000

Note 17: Average Staffing Levels

	2005	2004
The average staffing levels for the Commission during the year were:	**117**	103

Note 18: Financial Instruments

Note 18A: Interest Rate Risk

The Commission's exposure to interest rate risk and the effective weighted average interest rate for classes of financial assets and financial liabilities is set out below:

	Notes	Floating Interest Rate		Fixed Interest Rate Maturing in						Non Interest Bearing		Total		Weighted Average Effective interest Rate	
				1 Year or less		1 to 5 Years		>5 years							
		2005	2004	**2005**	2004	**2005**	2004	**2005**	2004	**2005**	2004	**2005**	2004	**2005**	2004
		$'000	$'000	**$'000**	$'000	**$'000**	$'000	**$'000**	$'000	**$'000**	$'000	**$'000**	$'000	**%**	%
Financial Assets															
Cash at Bank	6A	**10,199**	13,575	**-**	-	**-**	-	**-**	-	**-**	-	**10,199**	13,575	**5.32**	4.95
Cash on hand	6A	**-**	-	**-**	-	**-**	-	**-**	-	**-**	8	**-**	8	**n/a**	n/a
Short Term Deposit	6A	**-**	-	**30,000**	29,000	**-**	-	**-**	-	**-**	-	**30,000**	29,000	**5.62**	5.39
Receivables	6B	**-**	-	**-**	-	**-**	-	**-**	-	**7,380**	5,301	**7,380**	5,301	**n/a**	n/a
Advance to Constructing Authorities	6C	**-**	-	**-**	-	**-**	-	**-**	-	**824**	888	**824**	888	**n/a**	n/a
TOTAL		**10,199**	13,575	**30,000**	29,000	**-**	-	**-**	-	**8,204**	6,197	**48,403**	48,772		
TOTAL ASSETS												**1,396,459**	1,400,831		
Financial Liabilities															
Finance Lease	8	**-**	-	**77**	71	**56**	133	**-**	-	**-**	-	**133**	204	**8.75**	8.75
Trade and other creditors	10A	**-**	-	**-**	-	**-**	-	**-**	-	**26,855**	22,976	**26,855**	22,976	**n/a**	n/a
TOTAL		**-**	-	**77**	71	**56**	133	**-**	-	**26,855**	22,976	**26,988**	23,180		
TOTAL LIABILITIES												**33,424**	29,427		

Note 18: Financial Instruments *(continued)*

Note 18B: Credit Risk Exposure

Credit risk represents the loss that would be recognised if counterparties failed to perform as contracted. The risk on financial assets of the Commission which have been recognised on the Statement of Financial Position, is the carrying amount net of any provision for doubtful debts. Due to the nature of the majority of the Commission's clients, such risk is considered by the Commission to be low.

Note 18C: Net Fair Values of Assets and Liabilities

The net fair values of investments have been computed at net realisable value at balance date. For other assets and liabilities, the net fair value approximates their carrying value. No financial assets or liabilities are readily traded on organised markets in standardised form other than investments. The aggregate net fair values and carrying amounts of financial assets and financial liabilities are disclosed in the Statement of Financial Position.

	Notes	2005		2004	
		Total Carrying Amount $'000	Aggregate Net Fair Value $'000	Total Carrying Amount $'000	Aggregate Net Fair Value $'000
Financial Assets					
Cash at Bank	6A	**10,199**	**10,199**	13,575	13,575
Cash on hand	6A	**–**	**–**	8	8
Short Term Deposit	6A	**30,000**	**30,000**	29,000	29,000
Receivables	6B	**7,380**	**7,380**	5,301	5,301
Advance to Constructing Authorities	6C	**824**	**824**	888	888
Total Financial Assets		**48,403**	**48,403**	48,772	48,772
Financial Liabilities					
Finance Lease	8	**133**	**133**	204	204
Trade and other creditors	10A	**26,855**	**26,855**	22,976	22,976
Total Financial Liabilities		**26,988**	**26,988**	23,180	23,180

Note 19: Events Occurring after Reporting Date

No material events occurred after balance date.

Note 20: Unrecognised Liabilities

The Commission is not aware of any significant unrecognised liabilities at 30 June 2005 other than those recorded in the Schedule of Commitments.

Note 21: Liabilities assumed by Governments

Except as indicated by these statements no liabilities have been assumed by Governments.

Note 22: Economic Dependency

The Commission is dependent on contributions by Contracting Governments to undertake its normal activities.

Note 23: Location of Business

With the exception of assistance provided to the Mekong River Commission under AusAID funding the Commission operates solely in Australia.

Note 24: Related Party Disclosures

Members of the Commission

Members of the Commission during 2004-05 were:

	Member	Representative of:	Period of Membership	
President	Rt. Hon I. Sinclair		From	1/12/2003
Commissioners	Mr. D. Borthwick	Commonwealth	From	19/2/2004
	Dr. M. Cooper	ACT	To	22/2/2005
	Ms. L. Corbyn	NSW	To	30/6/2005
	Mr B. Coulter	QLD	From	22/7/2004
	Mr. R. Freeman	SA	From	17/4/2003
	Mr. J. Hallion	SA	From	20/6/2002
	Mr P. Harris	VIC	From	19/10/2004
	Ms. J. Hewitt	Commonwealth	From	16/12/2004
	Prof. L. Neilson	VIC	From	24/2/2003
	Mr. P. Ottesen	ACT	From	23/2/2005
	Mr. J. Purtill	QLD	From	22/7/2004
	Mr. M. Taylor	Commonwealth	To	29/10/2004
	Ms. J. Westacott	NSW	From	16/5/2003
Deputy Commissioners	Mr. G. Claydon	QLD	From	9/9/2004
	Mr. D. Flett	VIC	To	30/6/2005
	Ms. E. Fowler	ACT	From	28/9/2001
	Mr. D. Harriss	NSW	From	1/10/1997
	Mr. A. Holmes	SA	From	20/6/2004
	Ms. A. Howe	SA	From	20/6/2002
	Dr. C. O'Connell	Commonwealth	From	22/2/2001
	Mr. J. Pollock	QLD	From	19/7/2001
	Mr. C. Robson	QLD	From	19/7/2001
	Dr. R. Sheldrake	NSW	To	30/6/2005
	Mr. G. Wilson	VIC	From	20/4/2004
	Mr. B. Wonder	Commonwealth	From	22/4/2004

Loans to Members and Officers
No loans were made to members or officers of the Commission.

Transactions with Related Entities
The Murray-Darling Basin Commission is the executive arm of the Ministerial Council established by the 1992 Murray-Darling Basin Agreement. The Commonwealth and the States of New South Wales, Victoria, South Australia and Queensland are parties to this agreement whilst the Australian Capital Territory participates by a Memorandum of Understanding. Funds for activities under the direction of the Commission are paid to the Commission by the participating governments and disbursed according to Commission priorities. A high proportion of the Commission funded activity is undertaken by State Agencies. All transactions are at arms length and in accordance with budgets and programs approved by the Ministerial Council.

APPENDIXES

Appendix A: Membership of the Ministerial Council

Members from 1 July 2004 to 30 June 2005

Australian Government

The Hon. Warren Truss, MP	Minister for Agriculture, Fisheries and Forestry (Chairman)
The Hon. Dr David Kemp, MP	Minister for the Environment and Heritage (to 17 July 2004)
Senator the Hon. Ian Campbell	Minister for the Environment and Heritage (from 18 July 2004)
Senator the Hon. Ian Macdonald	Minister for Fisheries, Forestry and Conservation

New South Wales

The Hon. Craig Knowles, MP	Minister for Infrastructure and Planning and Minister for Natural Resources
The Hon. Ian Macdonald, MLC	Minister for Primary Industries
The Hon. Bob Debus, MP	Attorney-General and Minister for the Environment

Victoria

The Hon. John Thwaites, MP	Deputy Premier, Minister for Environment and Minister for Water
The Hon. Bob Cameron, MP	Minister for Agriculture

South Australia

The Hon. Karlene Maywald, MP	Minister for the River Murray (from 23 August 2004)
The Hon. John Hill, MP	Minister for Environment and Conservation
The Hon. Rory McEwen, MP	Minister for Agriculture, Food and Fisheries

Queensland

The Hon. Stephen Robertson, MP	Minister for Natural Resources and Mines
The Hon. John Mickel, MP	Minister for Environment (to 25 August 2004 then vacant)

Australian Capital Territory* (non-voting member)

Mr Jon Stanhope, MLA	Minister for the Environment

* ACT participation is through a memorandum of understanding, 27 March 1998.

Appendix B: Membership of the Community Advisory Committee

Members from 1 July 2004 to 30 June 2005

Chairman

Ms Leith Boully	(to 11 April 2005)
Mr Myles Treseder	(Acting Chairman from 12 April 2005)

Member

NSW

Mr Kelvin Baxter
Mr Mark King
Mr Lee O'Brien

Victoria

Mr Don Cummins
Mr Rodney Hayden
Ms Sarah Nicholas

South Australia

Mrs Joanne Pfeiffer
Mrs Sharon Starick
Mr Derek Walker

Queensland

Mr John Grabbe
Mr Clarrie Hillard
Ms Sarah Moles

Australian Capital Territory

Prof Ian Falconer

Interests

Mr Leon Broster	Urban
Mr Hamish Holcombe	Dryland Farming
Mr Lee Joachim	Indigenous
Cr Phyllis Miller	Local Government
Mr Mike Nolan	Indigenous
Mr Nick Roberts	Environment
Mr Myles Treseder	Irrigation Industry (Acting Chairman from 12 April 2005)

Appendix C: Membership of the MDBC

Members from 1 July 2004 to 30 June 2005

Rt Hon. Ian Sinclair	Independent President

Australian Government

Mr David Borthwick	Secretary, Department of the Environment and Heritage
Ms Joanne Hewitt	Secretary, Department of Agriculture, Fisheries and Forestry (from 16 December 2004)
Mr Michael Taylor	Secretary, Department of Agriculture, Fisheries and Forestry (to 29 October 2004)
Mr Bernard Wonder (Deputy)	Deputy Secretary, Department of Agriculture, Fisheries and Forestry
Dr Conall O'Connell (Deputy)	Deputy Secretary, Department of the Environment and Heritage

New South Wales

Ms Jennifer Westacott	Director-General, Department of Infrastructure, Planning and Natural Resources
Ms Lisa Corbyn	Director-General, Department of Environment and Conservation
Mr David Harriss (Deputy)	Regional Director, Murray-Murrumbidgee, Department of Infrastructure, Planning and Natural Resources
Dr Richard Sheldrake (Deputy)	Deputy Director-General, Agriculture and Fisheries, Department of Primary Industries

Victoria

Prof Lyndsay Neilson	Secretary, Department of Sustainability and Environment
Mr Peter Harris	Secretary, Department of Primary Industries (from 19 October 2004)
Mr Denis Flett (Deputy)	Chief Executive Officer, Goulburn-Murray Water
Mr Gregory Wilson (Deputy)	Deputy Secretary, Water Sector Division, Department of Sustainability and Environment

South Australia

Mr Robert Freeman	Chief Executive, Department of Water, Land and Biodiversity Conservation
Mr James Hallion	Chief Executive, Primary Industries and Resources SA
Ms Anne Howe (Deputy)	Chief Executive, South Australian Water Corporation
Mr Allan Holmes (Deputy)	Chief Executive, Department for Environment and Heritage

Queensland

Mr Bryan Coulter	Deputy Director General, Department of Natural Resources and Mines (from 22 July 2004)
Mr James Purtill	Director General, Environmental Protection Agency (from 22 July 2004)
Mr Christopher Robson (Deputy)	Executive Director, Natural Resource Sciences, Department of Natural Resources and Mines
Mr Gregory Claydon (Deputy)	General Manager Water Planning, Department of Natural Resources and Mines

Australian Capital Territory

Mr Peter Ottesen	Executive Director, Office of Sustainability (from 23 February 2005)
Dr Maxine Cooper	Executive Director, Environment ACT, Department of Urban Services (to 22 February 2005)
Ms Elizabeth Fowler (Deputy)	Director, Environment Protection, Environment ACT, Department of Urban Services

Appendix D: Committees and working groups 2004–05

Corporate Services

Audit Committee
Finance Committee

River Murray Water

River Murray Water Advisory Board
Advisory Group for Hume to Yarrawonga Waterway Management
Asset Management Advisory Panel
High Level Working Group on Salt Interception
Hume-Dartmouth Technical Review Committee
Lake Victoria Advisory Committee
River Murray Channel Capacity Working Group
Water Audit Working Group
Water Liaison Committee
Water Policy Committee

Natural Resource Management

Integrated Catchment Management Policy Committee
Basin Salinity Management Strategy Implementation Working Group
Fish Management and Science Committee
Fish Passage Reference Group
Groundwater Technical Reference Group
Independent Audit Group (Cap)
Independent Audit Group (Salinity)
Independent Sustainable Rivers Audit Group
Indigenous Action Plan Project Board
Interstate Water Trade Project Board
Murray Cod Reference Group
Narran Lakes Project Steering Committee
Native Fish Strategy Community Stakeholder Group

Native Fish Strategy Coordinators
Sustainable Rivers Audit Implementation Working Group
Water Quality Monitoring Working Group

The Living Murray

The Living Murray Board
The Living Murray Communication Plan Working Group
The Living Murray Implementation Program Working Group
Environmental Works and Measurers Program Management Committee
Project Assessment Group for The Living Murray

Appendix E: New publications printed by the MDBC

Title	MDBC Publication No.
Aliens in the Basin – An introduction to alien fish in the Murray-Darling Basin!, July 2004	
Basin Salinity Management Strategy 2002–2003 Annual Implementation Report, November 2004	74/04
Basin Salinity Management Strategy 2002–2003 Annual Implementation Report – Summary, November 2004	73/04
Basin Salinity Management Strategy 2003–2004 Annual Implementation Report, April 2005	02/05
Basin Salinity Management Strategy 2003–2004 Annual Implementation Report – Summary, April 2005	03/05
Dryland and Urban Salinity costs across the Murray-Darling Basin – An overview and guidelines for identifying and valuing the impacts, October 2004.	34/04
Footprints by the River, October 2004.	
Hill country native grasslands :Better Management for healthy countries, October 2004.	33/04
Hill country native grasslands :Better Management for healthy countries – Summary brochure, October 2004.	29/04
Key threats to native fish flyer, November 2004.	
Living Murray Business Plan, November 2004	75/04
Living Murray Business Plan, April 2005.	05/05
Living Murray Environmental Watering Plan 2004–2005 – Interim Arrangements, February 2005.	08/05.
MDBC Native Fish Strategy 2003–2004 Annual Implementation Report, March 2005.	07/05
Murray-Darling Basin Commission Annual Report 03/04, October 2004	68/04
Murray-Darling Basin Education Magazine – The Canberra Times, August 2004.	
Murray-Darling Basin Floodplain Management Strategy, August 2004.	36/04

Title	MDBC Publication No.
Murray-Darling Basin Groundwater Status 1990–2000: a summary report, March 2005.	32/04
Murray-Darling Basin Groundwater Status 1990–2000: an overview, March 2005.	
Native fish of the Murray-Darling Basin flyer, November 2005.	
Recommended Methods for Monitoring Floodplains and Wetlands, June 2005	72/04
Report of the Independent Audit Group for Salinity 2002–2003, November 2004.	84/04
Report of the Independent Audit Group for salinity 2003–2004, April 2005.	01/05
Review of Cap Implementation 2003–04 – Report of the Independent Audit Group, March 2005.	12/05
Survey of River Red Gum and Black Box Health along the River Murray in New South Wales, Victoria and South Australia – 2004, April 2005.	06/05
Sustainable Rivers Audit Program, November 2004.	38/04
The Darling, November 2004.	69/04
The Living Murray Environmental Works and Measures Program, November 2004.	31/04
The River Murray Barrages and Fishway Brochure, March 2005.	
What can you do to assist native fish? Flyer, November 2004.	
What is a fishway? flyer, December 2004.	
Water Audit Monitoring Report 2002–03, July 2004.	35/04

COMMUNITY ADVISORY COMMITTEE REPORT 2004–2005

(Photo: Sue Vize)

CAC members visiting 'Trawalla', a pecan farm, near Moree in October 2004

The Hon. Peter McGauran MP
Minister for Agriculture, Fisheries and Forestry
Parliament House
CANBERRA ACT 2600

Dear Minister

We would like to submit the Community Advisory Committee's annual report for 2004–05, to be tabled together with the Murray-Darling Basin Commission's annual report, in the parliaments of Australia, New South Wales, Queensland, South Australia and Victoria, and the Legislative Assembly of the Australian Capital Territory.

This report marks the first year of operation of the fourth Community Advisory Committee. This was a year of significant change and development for the Committee and its new members. The Committee was able to make a significant contribution in relation to The Living Murray and fostering the beginnings of a Darling Initiative to provide for river health in the northern parts of the Basin. We feel strongly that a whole of Basin approach is important to the future of the Murray-Darling Basin Initiative.

We commend the 2004–05 Annual Report of the Community Advisory Committee to the five parliaments and the ACT Legislative Assembly.

Yours sincerely

Leith Boully
Chairman
(1 June 2004 to 11 April 2005)

Myles Treseder
Acting Chairman
(12 April to 30 June 2005)

The Fourth Community Advisory Committee (CAC) was appointed in May 2004. The first part of 2004–05 was a time of building familiarity with the Murray-Darling Basin and the *Initiative* and developing teamwork within the Committee.

The CAC met formally seven times in both the northern and southern Basin. Meetings have involved interaction with local communities to garner information on issues pertinent to the local area, foster relationships and build networks within those communities.

The term of the CAC Chairman, Ms Leith Boully expired on 11 April 2005. With the selection process for a new Chairman still to be finalised, Deputy Chairman and Irrigation representative, Myles Treseder was appointed as Acting Chairman. As at 30 June 2005, Myles Treseder continues in that role.

The CAC Chairman attended Ministerial Council meetings in November 2004 and April 2005, as well as all Commission meetings until the expiry of her term. The Acting CAC Chairman attended the Commission meeting held in June 2005. The CAC provided advice on a range of issues throughout the year, in particular relating to The Living Murray, establishment of a Darling initiative and Indigenous involvement in natural resource management.

The CAC developed its first Business Plan which was endorsed by Ministerial Council on 26 November 2004. The *Murray-Darling Basin Agreement* 1992, the CAC's Terms of Reference and the Integrated Catchment Management Policy (2001) provide the context for the CAC's work priorities for this year. The key objectives in the Business Plan are:

1. Provide strategic advice on natural resource management issues of significance reflecting the range of community views across the Basin to Council.
2. Disseminate Council's decisions to the wider community.
3. Provide advice to Council on the effectiveness of the Commission's community engagement processes
4. Participate in community engagement and policy development in a strategic and timely manner as directed by Ministerial Council.
5. Provide advice to Council on the effectiveness of the Integrated Catchment Management approach.



Waggamba Landcare group from Goondiwindi, (Qld) attending a farm field day in the Border Rivers area of NSW and Qld

(Photo: Arthur Mostead)

Strategic Advice on Natural Resource Management Issues

The Living Murray

The Living Murray continues to be a primary focus of CAC policy advice to Council, particularly relating to the community engagement process surrounding the implementation of The Living Murray Business Plan. Key areas for the CAC's advice in 2004–05 were:

- informing the wider community on The Living Murray Business Plan and its implementation
- ensuring that the management of unregulated flow (non-Cap water or surplus flows) does not undermine the outcomes of The Living Murray
- the key role of improved knowledge on the ecology and condition of the Murray to underpin implementation and further decision-making, and build community confidence in the science supporting The Living Murray

- improving community input to the development of environmental watering plans and asset management plans
- ensuring that Indigenous people and their knowledge is incorporated into environmental watering plans and asset management plans.

The CAC has been concerned at the lack of information and community engagement in the implementation of The Living Murray over the first year. The CAC continues to have input into the development of The Living Murray Communication Strategy through involvement in focus groups. The Strategy is expected to be finalised for implementation in late 2005.

In addition, the CAC has a role in providing advice on the development of The Living Murray Environmental Watering Plan and the River Murray Channel Asset Environmental Management Plan. There were only limited opportunities to have input to this process in 2004–05.

Darling Initiative

Following discussions with communities in the northern Basin, the CAC provided advice to Ministerial Council that communities in the Darling Basin had indicated their desire to establish "a community-led initiative to guide the integrated management of the rivers of the Darling Basin." A working group from the region was formed to further the development of a proposal for the initiative, to report back to the Darling community in August 2005.

Indigenous Action Plan

The CAC continued to provide advice on the development of the Murray-Darling Basin Indigenous Action Plan and engagement of Indigenous people in natural resource management in general. The CAC has provided input to the development of the Plan through the Project Board and through CAC meetings.

Specific advice has also been provided to Council on the need to finalise the Memorandum of Understanding with Murray Lower Darling Rivers Indigenous Nations and to develop a similar relationship with the Northern Rivers Indigenous Nations.



Work is currently underway to develop protocols for the conduct of CAC activities in a manner respectful of Indigenous people. These protocols are being developed with the input of Indigenous people in the Basin facilitated through the CAC's Indigenous members.

Basin Salinity Management

The CAC received the outcomes of two independent reviews of the Basin Salinity Management Plan. Members were very supportive of the progress made to date. The CAC supported the recommendations made by the Independent Audit Group, with priority given to:

- research and investigations into mechanisms leading to salt accessions during flood recessions
- further information from partner governments for provisional entries to be made to complete the salinity registers and allow more thorough evaluation
- tracking of temporary water trades with a view to assessing salinity impacts

Cap on Diversions

The CAC noted that it is now 10 years since the introduction of the Cap on Diversions and that although adherence to the Cap is assessed on an annual basis, there has been no review of the Cap mechanisms since 2000. The CAC advised Ministerial Council that the 10 year mark would be an appropriate time to review the effectiveness of the Cap, incorporating a review of groundwater use.

Interstate Water Trade

The CAC was briefed on the progress with establishing permanent interstate water trade in the southern-connected Basin. CAC members advised Ministerial Council of the need for clear rules to be agreed, including consideration of environmental impacts, before the market is opened, and to ensure there are opportunities for community input prior to be decisions being taken on further reforms to interstate water trade.

Disseminating Council's decisions

A Community Forum co-hosted by the CAC and the Commission, saw more than 130 people representing a wide range of interests across the Basin gather in Mildura on 4 June 2005. Ministers, partner government representatives and Commission staff explained how the The Living Murray Business Plan will guide the implementation of the First Step Decision for The Living Murray and outlined processes for the water recovery, management, accounting and delivery to the six Living Murray significant ecological assets.

A series of smaller local forums at each of The Living Murray Significant Ecological Assets commenced with a meeting in Renmark on 24 June.

The CAC continues to provide information on Council's decisions through distributing communiqués and attending local and regional community meetings.

Community Engagement

CAC meetings were held in a number of locations across the Basin including Echuca, Wentworth and Moree. These meetings provided CAC members with an opportunity to meet with representatives from local organisations and visit sites including Barmah-Millewa forest, Menindee Lakes, Tandou and Cubbie Station. The CAC invites local people involved in natural resource management to meet with CAC members at these regional meetings.

Seven members of the CAC visited northern NSW in October 2004 to meet with local community representatives and discuss natural resource management issues in this part of the Basin. The key issues raised during this tour informed the CAC's advice to Council and provided the ground work for two forums on the development of a natural resource management initiative for the improved management of the rivers in the Darling Basin.

In December 2004, the CAC convened a representative group of people from throughout the Darling Basin to consider the future natural resource management of the Darling Basin. The meeting requested the CAC coordinate a larger community forum to consider the issues more fully.



On 25 February 2005, more than 130 members of the Darling Basin community met in Moree to discuss a common goal of developing a Darling Basin initiative. The meeting overwhelmingly supported the establishment of a community-led initiative to guide the integrated management of the rivers of the Darling Basin and elected a working group, independent of the CAC, to develop a process and structure to take the initiative forward. The group will report progress to the Darling Basin community in August 2005.

The CAC established The Living Murray Community Reference Group (CRG) in April 2005. This Committee held its first meeting in May 2005. The key roles for this group are to provide advice on the development of the River Murray Channel Asset Management Plan and the overarching Environmental Watering Plan for all of the Significant Ecological Assets. Wide community input through strong linkages between the CRG, the CAC and The Living Murray initiative continues to inform decision making on The Living Murray initiative.

Through the Secretariat, the CAC continues to support the Murray-Darling Basin Leadership graduate network. In March 2005 the first meeting of the network was held in Canberra with 11 graduates from courses one and two. The meeting produced a plan of action for the coming year and provided advice to Minister Truss and the President on this proposal, which includes utilising the network to provide advice to the Commission and CAC.

Policy Development

CAC members continued to be active in MDBC committees throughout the year, participating on:

- ICM Policy Committee, Finance Committee and Water Policy Committee (did not meet in 2004–05)
- The Living Murray Board, Interstate Water Trade Project Board, Indigenous Action Plan Project Board, Basin Salinity Management Strategy Implementation Working Group, Sustainable Rivers Audit Implementation Working Group, Indigenous Interagency Coordinating Group, Groundwater Technical Reference Group

- Community Reference Group for The Living Murray
- Murray Lower Darling Rivers Indigenous Nations, Australian Landcare Council and CSIRO's Water Accounts and Benefits Project Reference Panel.

A number of committees were inactive during the year, including the Program Knowledge Committees. It is expected that the committee restructuring following the completion of the Commission's Strategic Plan will ensure an active CAC participation in all areas of policy development in the future.

The CAC's main activity in providing policy advice is through its reports to Ministerial Council.

The Integrated Catchment Management approach

Integrated Catchment Management in the Murray-Darling Basin 2001-2010 (ICM Policy) was launched in 2001 and established a long-term partnership between the CAC and the Ministerial Council. The CAC supports the ICM approach as the basis for all natural resource management activities across the Basin and has adopted the values and principles in the ICM Policy to guide the way it operates.

The CAC was instrumental in the development of a set of draft performance measures adopted in principle by Council in May 2003. The performance measures are designed to determine whether or not processes to implement the ICM approach have been set up and how effectively they have worked. The performance measures cover seven key areas: knowledge, governance, institutional arrangements, investment, engagement, capacity building and target setting.

Focus groups and surveys conducted late 2003–early 2004 by Colmar Brunton Social Research, have provided baseline data on the key performance measures relating to community perceptions on key aspects of implementing the ICM approach including knowledge, engagement and governance. Results in these three key areas informed a joint discussion with Ministerial Council held 1 April 2005.

A publication summarising the key findings will be published early in the 2005–06 financial year.



Performance Report

The CAC Business Plan includes a number of performance indicators. Analysis of progress in implementing the Business Plan is tracked against these indicators. Effectiveness of CAC advice is monitored through a decision tracking register. Other milestones can be monitored through the delivery of reports or outputs specified. In March-April 2005, the Secretariat conducted a survey "CAC Member Survey of Services Provided by the Secretariat" (the 2005 Survey). The purpose was to gauge the effectiveness of the Secretariat in meeting the members' needs and to provide baseline information for future surveys. Twelve members responded, equating to a 60 per cent return rate.

Strategic Advice to Council

The CAC provided advice to Council for the November 2004 and April 2005 meetings through formal agenda papers to both meetings covering: implementation of The Living Murray Business Plan, the need to review the Basin Cap on diversions, priority issues for the Basin Salinity Management Strategy, strategic planning priorities, implementation of permanent Interstate Water Trading rules, a community-led Darling Basin initiative, Indigenous Engagement and Floodplain Management.

Discussions at the joint Council/CAC meeting held 1 April 2005 have been reported under Integrated Catchment Management above.

Key outcomes:
Recommendations to Council:
62% of the CAC's recommendations were adopted
29% of the CAC's recommendations were noted but not adopted
9% of the CAC's recommendations were neither adopted nor noted

Disseminate Council Decisions

The 2005 Survey showed that all responders are actively engaged in networking across the range of interests in communities.

CAC members use the formal Communiqué, issued following each Council meeting, as the basis to inform the community of Council's decisions. Following each Commission and CAC meeting, the Secretariat also provides CAC members with a Communiqué to assist in discussions with community networks.

Key outcomes:
Two communiqués circulated.

One regional and one local forum to inform the community of Council's Living Murray initiative.

Advice on Community Engagement

The CAC continues to provide formal advice to Ministerial Council on engagement activities for The Living Murray. The establishment of the CRG will strengthen this advice in the future. Two members participated in a working group on the development of The Living Murray Communication Strategy.

Key outcomes:
Advice to Council in November and April on TLM engagement, the Darling Initiative and the Indigenous Action Plan

Establishment of TLM Community Reference Group

Formation of a CAC Working Group to develop a Murray-Darling Basin Engagement Policy

Policy Development

The CAC provided advice on a range of existing policies currently under implementation and participated in the development of policies on:

- Indigenous engagement
- Interstate Water Trade
- Murray-Darling Basin Commission Strategic Plan

Key outcomes:
Eleven members attended 30 high-level committee, project board and implementation working group meetings of the Commission (note that some committees did not meet in 2004–05); 26 per cent submitted reports



Effectiveness of the ICM Approach

In 2004–05 the CAC reviewed the output of the first survey on perceptions of effectiveness of the ICM approach. Advice was provided to Ministerial Council and a publication summarising the outcomes of the survey was prepared.

The CAC has proposed that future monitoring of the effectiveness of the ICM approach be incorporated into a State of the Basin reporting format drawing together all activities of the Murray-Darling Basin *Initiative*.

Key outcomes:
Perceptions on Implementing Integrated Catchment Management in the Murray-Darling Basin prepared

Communication and Capacity Building

Under the CAC Business Plan, building effective networks within the Murray-Darling Basin *Initiative* and in the wider community is seen as a high priority. CAC members have approached Ministers and Commissioners to establish direct communication and briefings prior to meetings.

Capacity building for CAC members was largely undertaken through developing a better knowledge of the Basin and the programs within the Murray-Darling Basin *Initiative*. CAC members have now visited all states/territories within the Basin and been briefed on all on-going projects and key policies of the Initiative and commenced briefings on policies currently under development.

Key outcomes:
New South Wales has arrangements for regular meetings between members and Commissioners/Ministers. South Australia and Queensland have a protocol for formal meetings between members and Commissioners/Ministers.

Secretariat support

The CAC is supported by a secretariat to provide effective support to the Chairman and members and active furtherance of the CAC's Business Plan

Key findings of a recent survey of CAC members relating to the standard of services provided by the Secretariat were:

Professionalism of the Secretariat: 83 per cent rated "All" and 17 per cent rated "Most" of the staff as helpful, knowledgeable and professional, with no adverse comments made on the service provided by the Secretariat

Logistics: 84 per cent were happy with travel arrangements and the standard of accommodation provided, while 91 per cent believed meeting papers and other paperwork was processed within acceptable timeframes.



GLOSSARY

anabranch. A branch of a river that leaves the main stream and rejoins it further downstream.

barrages. Five low, wide weirs built at the Murray Mouth to reduce the amount of seawater moving in and out of the Mouth due to tidal movement. They also help control the water level in the Lower Lakes and River Murray below Lock 1.

aquifer. An underground layer of soil, rock or gravel able to hold and transmit water.

baseline conditions. The current status of a system.

Basin Salinity Management Strategy (BSMS). This strategy guides communities and governments in working together to control salinity in the Murray-Darling Basin and their catchments. It establishes targets for the river salinity of each major tributary valley and the Murray-Darling system itself that reflect the shared responsibility for action both between valley communities and states.

biodiversity. The variety of life forms, plants, animals and micro-organisms; the genes they contain; the ecosystems they form; and ecosystem processes.

Cap on water diversions. The limit imposed on the volume of surface water that can be diverted from rivers for consumptive uses. Started in 1995 as the Interim Cap.

catchment. The area of land drained by a river and its tributaries.

cavitation. Erosion of hydraulic structure surfaces (e.g. steel or concrete) due to the implosion of cavities in a fluid, particularly evident in areas of high flow and marked change of pressures, and characterised by pitting of the surface. It can be structurally damaging if severe and not addressed.

channel capacity. The volume of water that can pass along the river channel at a certain point without spilling over the tops of the banks.

connectivity. Related to maintaining connections between natural habitats, such as a river channel and adjacent wetland areas.

Council of Australian Governments (COAG). The peak intergovernmental forum in Australia, comprising the Prime Minister, state premiers, territory chief ministers and the President of the Australian Local Governments Association.

drawdown targets. A lake level to which it is planned to lower a reservoir or lake as part of an operations cycle, e.g. for environmental or water quality reasons. In some cases there is a targeted rate at which the drawdown occurs, as well as the level target.

dredging. A process whereby machines equipped with scooping or suction devices remove mud etc., in order to deepen a waterway.

easement. A grant of rights over land by a property owner in favour of another person to enter onto land for the purpose of installing and maintaining facilities such as cables, pipelines, etc. An easement may also grant the right to cross over land in order to gain access to other land.

EC (units). Electrical conductivity unit commonly used to indicate the salinity of water (1 EC = 1 microsiemen per centimetre, measured at 25˚C).

end-of-valley targets. A water quality target for salinity, set for a point in the lower reach of each catchment.

environmental flows. Any river flow pattern provided with the intention of maintaining or improving river health.

environmental outcome. Project outcomes that benefit the ecological health of the river system.

Environmental Works and Measures Program (EWMP). An eight-year, $150 million program to deliver works and measures to improve the health of the River Murray system by making the best use of the water currently available, optimising the benefits of any water recovered in the future, and considering other policy interventions.

estuary. The part of a river in which water levels are affected by sea tides, and where fresh water and salt water mix.

failure modes effects analysis. A process to determine all the modes by which an asset may fail, the likelihood of that failure and the consequences of failure.

First Step Decision. A decision announced in November 2003 by the Murray-Darling Basin Ministerial Council. The initial focus of the First Step Decision is on maximising environmental benefits for the six significant ecological assets.

fishway. A structure that provides fish with passage past an obstruction in a stream.

flow regime. The spatial and temporal pattern of flows in a river.

fresh. A small rise in river flows, over and above normal flow conditions.

groyne. A protective structure of stone or concrete that extends from the shore into the water to prevent a beach or riverbank from washing away.

hydrology. The study of the distribution and movement of water.

integrated catchment management (ICM). A process through which people can develop a vision, agree on shared values and behaviours, make informal decisions and act together to manage the natural resources of their catchments. Their decisions on the use of land, water and other environmental resources are made by considering the effect of that use on all those resources and on all people within the catchment.

lock. Consists of a rectangular chamber of concrete with gates at each end. It allows vessels to move from one water level to another.

macroinvertebrate. An invertebrate animal (animal without a backbone) large enough to be seen without magnification.

Murray-Darling Basin (MDB). The entire tract of land drained by the Murray and Darling Rivers. The basin covers land in Queensland, New South Wales, the Australian Capital Territory, Victoria and South Australia.

Murray-Darling Basin Commission (MDBC). The executive arm of the Murray-Darling Basin Ministerial Council. MDBC is responsible for managing the River Murray and the Menindee Lakes system of the lower Darling River and advising the Ministerial Council on matters related to the use of water, land and other environmental resources of the Murray-Darling basin.

Murray-Darling Basin Initiative. A partnership of governments and communities formed to enhance the environmental resources of the Murray-Darling Basin.

Murray-Darling Basin Ministerial Council (MDBMC). A council of ministers of contracting governments who hold land, water and environment portfolios. A minister of the Australian Capital Territory also participates under the terms of the memorandum of understanding.

National Action Plan for Salinity and Water Quality (NAPSWQ). A commitment of $1.4 billion over seven years for applying regional solutions to salinity and water quality problems. The aim is for all levels of government, community groups, individual land managers and local businesses to work together in tackling salinity and improving water quality.

National Water Initiative (NWI). In June 2004 the Council of Australian Governments reached agreement on a National Water Initiative to improve the security of water access entitlements, ensure ecosystem health, expand water trading, and encourage water conservation in our cities.

Native Fish Strategy (NFS). This strategy aims to ensure that the Murray-Darling Basin sustains viable fish populations and communities throughout its rivers. The goal of this strategy is to rehabilitate native fish communities to 60 per cent of their estimated pre-European settlement levels within 50 years of implementation.

pile field. A series of closely spaced timber logs driven vertically into stream beds and banks to reduce erosion by dispersing stream energy and diverting flow away from sensitive areas.

rain rejection. The rejection of water (because it has rained while the water is in transit via river or irrigation canal) ordered for irrigation after it leaves the reservoir but before it is taken up by irrigators.

Ramsar-listed wetland. A wetland of international importance as listed in the Ramsar Convention in Iran.

Reference Group. A committee involving a range of expertise to inform and critique projects and project findings.

regulated flow. A controlled flow rate resulting from the influence of a regulating structure, such as a dam or weir.

remotely operated gate. A regulating gate that may be operated from a remote location, such as an office.

renewals annuities. A constant annual amount of funds that over a given time will provide sufficient funds for foreseeable maintenance programs to keep assets at a standard fit for purpose.

riparian. Of, inhabiting, or situated on, the bank and floodplain of a river.

river health. Status of a river system based on water quality, ecology and biodiversity.

River Murray Water (RMW). An internal business unit of the MDBC responsible by specific delegation for exercising the MDBC's function for water and asset management.

salinity. The concentration of dissolved salts in groundwater or river water, usually expressed in EC units or milligrams of dissolved solids per litre.

salinity credits and debits. Accounting units for the Salinity and Drainage Strategy. Credits are obtained through measures that reduce salinity of the River Murray.

salt interception scheme. Involves large-scale groundwater pumping and drainage projects that intercept saline water flows and dispose of them, generally by evaporation.

significant ecological asset (SEA). Six sites that were chosen because they are of regional, national and international importance for their ecological value, and there is concurrence that they are at risk and require improved water flow regimes. These sites are Barmah-Millewa Forest, Gunbower and Koondrook-Perricoota forests, Hattah Lakes, Chowilla Floodplain, Murray Mouth, Coorong and Lower Lakes, and the River Murray Channel.

stoplog. A beam (timber, concrete or steel) inserted into a slotted frame to retain water.

Sustainable Rivers Audit (SRA). A program designed to measure the health of the rivers within the Murray-Darling Basin. The Audit aims to determine the ecological condition and health of river valleys in the Murray-Darling Basin; to give us a better insight into the variability of river health indicators across the Basin over time; and to trigger changes to natural resource management by providing a more comprehensive picture of river health that is currently available.

turbidity. The relative clarity of water, which may be affected by material in suspension in the water.

water market. The buying and selling of water entitlements, on either a temporary or permanent basis, in order to improve the efficiency of water use.

weir. A dam placed across a river or canal to raise or divert the water, or to regulate or measure the flow.

weir pool. The body of water stored behind a weir.

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