Accountability arrangements established under the Basin Salinity Management Strategy incorporates annual reporting to the Murray-Darling Basin Ministerial Council on progress towards the Basin and end-of-valley targets and the Commission Salinity Registers.

Under the Strategy, the Partner Governments have agreed to provide the Commission and Ministerial Council with:

- An annual report detailing progress with works and measures and estimates of their salinity effects; and

- A rolling five-year review and audit for each valley and Register entry, of the assessed effect on river salinity of actions implemented, and an update of the expected change in salinity, salt load and flow due to the 'Legacy of History'.

The consolidated 2003-04 Annual Report described in this summary is the third in the annual report series.
Key Achievements for 2003–2004:

Approval of models by Commission
Commission approved the flow and salinity models developed for the tributary valleys (REALM and IQQM), the River Murray (MSM-Bigmod) and the rapid assessment tool to assess the salinity impacts of water trade in the Mallee zone (SIMRAT).

Endorsement of Baseline Conditions by Commission
Commission endorsed the Baseline Conditions for salinity for the River Murray and its tributaries.

End-of-valley targets were finalised for Queensland, New South Wales and South Australia
Commission endorsed the end-of-valley targets for salinity for Queensland, New South Wales and South Australia and submitted them to Ministerial Council for adoption.

Establishment of the Independent Audit Group for Salinity

Implementation of the Joint Works and Measures Program for Salt Interception
The Joint Works and Measures Program for Salt Interception Schemes (SIS) was progressed through initial infrastructure projects and scoping studies of suitable schemes including Pyramid Creek SIS, Bookpurnong SIS and Loxton SIS. Salt Interception Schemes in operation during 2003-04 prevented over 389,000 tonnes of salt from entering the River Murray.

Continued investment in valley actions
A total of $100.8 million from the National Action Plan for Salinity and Water Quality was allocated to activities to meet end-of-valley targets within the Murray-Darling Basin. A further $7.5 million in Natural Heritage Trust funding was also allocated to Regions wholly or partly within the Basin.

Setting the Scene

Need for action
The 1999 Basin Salinity Audit found that:

- The reduction in lower River Murray salinity achieved by the 1988 Salinity and Drainage Strategy would be cancelled out within 20 to 30 years
- Average river salinities in key tributary rivers would rise significantly, compromising their use for irrigation and urban purposes within 20 to 50 years
- About 3.4 million hectares of land would be salt-affected within 50 years
- River salinities are having serious impacts on floodplain wetlands of national and international importance
- Impact costs of dryland salinity in eight tributary valleys are estimated to be $247 million per year.

The 1988 Salinity and Drainage Strategy concentrated on reducing irrigation impacts on salinity in the Lower River Murray. The Audit concluded that dryland farming and grazing systems will generate most of the salt driving future increases in salinity.

Strategy objectives
The Basin Salinity Management Strategy 2001-2015 supersedes the 1988 Salinity and Drainage Strategy and is the Murray-Darling Basin Ministerial Council’s response to the salinity impacts identified in the Salinity Audit. It addresses both dryland and irrigation salinity and will:

- Maintain water quality of the shared water resources of the Murray and Darling Rivers for all beneficial uses. River salinity at Morgan, South Australia, will be maintained at less than 800 EC for 95 percent of the time
- Control the rise in salt loads in all tributary rivers of the Murray-Darling Basin, and through that control, protect its water resources and aquatic ecosystems at agreed levels, meeting the end-of-valley targets
- Control land degradation and protect important terrestrial ecosystems, productive farm land, cultural heritage, and built infrastructure at agreed levels Basin-wide as expressed as within-valley targets
- Maximise net benefits from salinity control across the Basin.
Agreed action, 2001–2015

The Partner Governments of the Murray-Darling Basin Commission are committed to working closely with Basin communities in implementing the Strategy over a fifteen-year period, according to the principles of the Ministerial Council’s 2001 Integrated Catchment Management (ICM) Policy Statement. The Strategy has nine elements:

- Developing capacity to implement the Strategy
- Identifying values and assets at risk
- Setting salinity targets
- Managing trade-offs with the available within-valley options
- Implementing salinity and catchment management plans
- Redesigning farming systems
- Targeting reforestation and vegetation management
- Constructing salt interception works
- Ensuring Basin-wide accountability, monitoring, evaluating and reporting
Implementing the End-of-Valley Salinity Network

End-of-Valley Target Setting

In developing the Strategy, the Commission’s Partner Governments agreed to the Basin target at Morgan and nominated interim end-of-valley targets for salinity and salt loads for each tributary valley. Council has played a key role in coordinating target setting across the Basin to ensure consistency for the implementation of the Basin Salinity Management Strategy, while considering the need for compatibility with other State and National salinity strategies and regional NRM planning processes.

During 2003-04 end-of-valley targets were finalised for Queensland, New South Wales and South Australia, while ACT and Victoria will be finalising their targets over the next 12 months.

Table 1 lists the end-of-valley salinity and salt load targets for the Basin, New South Wales, Queensland and South Australia, and the interim end-of-valley salinity and salt load targets for Victoria and Australian Capital Territory.

Table 1: BSMS End-of-Valley Targets.

<table>
<thead>
<tr>
<th>Valley</th>
<th>Interim 2015 Target</th>
<th>Salinity</th>
<th>Salt load</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(%) of 2000 Benchmark Conditions</td>
<td>Median</td>
<td>95%ile</td>
</tr>
<tr>
<td>Basin Target</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morgan</td>
<td>110%</td>
<td>800</td>
<td>110%</td>
</tr>
<tr>
<td>South Australia</td>
<td>Median</td>
<td>80%ile</td>
<td>Average</td>
</tr>
<tr>
<td>SA Border</td>
<td>-</td>
<td>412 EC</td>
<td>-</td>
</tr>
<tr>
<td>Lock 6 to Berri</td>
<td>-</td>
<td>543 EC</td>
<td>-</td>
</tr>
<tr>
<td>Below Morgan</td>
<td>-</td>
<td>770 EC</td>
<td>-</td>
</tr>
<tr>
<td>NSW</td>
<td>Median</td>
<td>80%ile</td>
<td>Average</td>
</tr>
<tr>
<td>Murrumbidgee</td>
<td>108%</td>
<td>112%</td>
<td>106%</td>
</tr>
<tr>
<td>Lachlan</td>
<td>107%</td>
<td>105%</td>
<td>103%</td>
</tr>
<tr>
<td>Bogan</td>
<td>132%</td>
<td>93%</td>
<td>129%</td>
</tr>
<tr>
<td>Macquarie</td>
<td>105%</td>
<td>122%</td>
<td>112%</td>
</tr>
<tr>
<td>Castlereagh</td>
<td>105%</td>
<td>-</td>
<td>99%</td>
</tr>
<tr>
<td>Namoi</td>
<td>108%</td>
<td>110%</td>
<td>114%</td>
</tr>
<tr>
<td>Gwydir</td>
<td>103%</td>
<td>101%</td>
<td>100%</td>
</tr>
<tr>
<td>NSW Border Rivers</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>NSW Upper Murray</td>
<td>102%</td>
<td>102%</td>
<td>-</td>
</tr>
<tr>
<td>Barwon-Darling</td>
<td>118%</td>
<td>103%</td>
<td>131%</td>
</tr>
<tr>
<td>NSW Riverine Plains</td>
<td>-</td>
<td>100%</td>
<td>-</td>
</tr>
<tr>
<td>NSW Mallee Zone</td>
<td>-</td>
<td>100%</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 1: BSMS End-of-Valley Targets continued.

<table>
<thead>
<tr>
<th>Valley</th>
<th>Interim 2015 Target</th>
<th>Salinity</th>
<th>Salt load</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(%) of 2000 Benchmark Conditions</td>
<td>Median</td>
<td>80%ile</td>
</tr>
<tr>
<td>Victoria</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wimmera</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Avoca</td>
<td>102%</td>
<td>102%</td>
<td>102%</td>
</tr>
<tr>
<td>Loddon</td>
<td>103%</td>
<td>101%</td>
<td>101%</td>
</tr>
<tr>
<td>Campaspe</td>
<td>101%</td>
<td>101%</td>
<td>101%</td>
</tr>
<tr>
<td>Goulburn</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Broken</td>
<td>136%</td>
<td>136%</td>
<td>136%</td>
</tr>
<tr>
<td>Ovens</td>
<td>100%</td>
<td>100%</td>
<td>101%</td>
</tr>
<tr>
<td>Kiewa</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Vic Upper Murray</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Vic Riverine Plains</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Vic Mallee Zone</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Queensland</td>
<td>Median</td>
<td>80%ile</td>
<td>Average</td>
</tr>
<tr>
<td>Qld Border Rivers</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Moonie</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Condamine Balonne</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Warrego</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Paroo</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>ACT*</td>
<td>Median</td>
<td>80%ile</td>
<td>Average</td>
</tr>
<tr>
<td>ACT</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Baseline Conditions Agreed

In order to set realistic targets and measure progress towards these, a set of Baseline Conditions that describe the salinity, salt load and flow regimes for the River Murray and its tributaries for the beginning of the Strategy, defined as 1 January 2000, are necessary. The Baseline Conditions are a modelled data set of the salinity, salt load and flow regimes given the agricultural development and water management situation in the Basin on 1 January 2000 for the 1975–2000 climatic sequence.

The Commission approved the Baseline Conditions for salinity, salt loads and flow over the Benchmark Period for each of the tributary Valleys and the River Murray at Morgan. This is a significant achievement as it clearly defines the starting point for the Basin Salinity Management Strategy and assists in assessing salinity predictions for a range of scenarios, including no further intervention, implementation of the Program of Actions and Accountable Actions as defined by Schedule C to the Murray-Darling Basin Agreement.

1Percentage of 2000 conditions, utilising 1975-2000 climatic benchmark
2Information not currently available
3Interim Targets nominated in the development of the Strategy and are expected to be finalised by June 2005
495%ile

The NSW targets are from the NSW Catchment Blueprints, however, the targets in the blueprints are for 2010 and 2012 and the salt load targets are for the 50th and 80th percentiles. Schedule C requires that average salt load targets be set for 2015. The targets in the blueprints have been adjusted to meet these requirements.

This is the MDBCC monitoring site at Gungalman Bridge and not the community adopted end-of-valley site of Coonamble.
Hydrologic models approved, salt mobilisation models progressing

Describing Baseline Conditions, setting targets, and monitoring and reporting progress towards targets, requires hydrologic and catchment-scale salt mobilisation models. Hydrologic models for the Murray and lower Darling Rivers have been operating since 1983 and have been well-tested. In June 2004, the Commission approved additional hydrologic models:

- Queensland tributary valleys – Integrated Quantity/Quality Models (IQQM)
- New South Wales tributary valleys – IQQM models
- Victorian tributary valleys – REsource ALlocation Models (REALM)
- River Murray – Monthly Simulation Model (MSM–Bigmod)

A catchment-scale salt mobilisation modelling framework is being developed by the Cooperative Research Centre for Catchment Hydrology (CRCCH) with support from the Commission. These models will be able to predict the salinity effects of land use change in the tributaries by simulating the amount of runoff to streams and recharge to groundwater systems that occurs under different vegetation types.

End-of-Valley Monitoring

An important feature of the Strategy is the commitment to monitoring salinity and flow data at end-of-valley target sites. Minimum standards for monitoring salinity and flow, and the locations of monitoring sites, were reviewed in August 2002. These standards are currently being implemented across the Basin.

For many of the tributaries there are limited data records for salinity and/or flow, consequently there are some limitations to the Baseline Conditions and these are being addressed through monitoring of the Strategy’s end-of-valley monitoring network. This will also assist in improving our understanding of salinity dynamics throughout the Basin. The salinity data recorded during 2003-04 is part of the commitment to improved monitoring of salinity throughout the Basin.

The end-of-valley network, along with the Baseline Conditions1 and recorded salinity during 2003-04, is presented in Figure 2.

Basin Target

The Basin target is to maintain River Murray salinity at Morgan at less than 800 EC for 95% of the time. In 2003-04, salinity at Morgan was less than 573 EC for 95% of the time, well below the target. Figure 3 represents recorded salinity at Morgan (blue line), and estimated salinity without salt interception schemes and dilution flows (red line).

Salinity levels during the drought in 2003-04 were lower than the long-term average as a result of several factors including:

- salt interception schemes preventing 1100 tonnes of salt from entering the river each day
- water is sourced from the top of the river system and has very low salinity levels
- higher salinity drainage and tributary inflows have been dramatically reduced during the drought
- there is low salt discharge from floodplains where salt is accumulating during periods between floods
- reduced saline groundwater inputs to the river.

This is in contrast to other drought periods, for example the 1982-83 drought, which followed a large flood event that mobilised significant amounts of salt, and flows were being sourced from more saline storages including Menindee Lakes and Lake Victoria (Construction of Dartmouth Reservoir had only recently been completed and no water storage was available).

Figure 3: The Effect of Salinity Management in the Murray-Darling Basin

Daily Salinity Levels - June 2003 to May 2004

- Australian Drinking Water Guideline Limit (800 EC)
- Effect of Salinity Management
- “Without Intervention” Salinity Levels (No Salt Interception Schemes and Dilution Flows)
- Recorded Salinity Levels

Date

1/06/2003 1/11/2003 1/04/2004

*Salinity effect ranges between 150 EC (20th percentile) and 240 EC (80th percentile) for this period.
The End–of–Valley Salinity Network of the BSMS: Baseline Conditions* and the 2003–2004 Recorded Salinity

*The baseline conditions are a modelled data set of salinity conditions [refer to text for further explanation].

Legend
- Basin target site
- Gauging station
- Interpretation sites
- End-of-Valley target site
- Main towns
- Main Rivers
Note: The scale of the graphs vary. Not all are sites are included due to lack of data.

* A modelled data set of the salinity, soil load and flow regimes of the basin’s rivers given the agricultural development and water management situation in the Basin on 1 January 2000 for the 1975 - 2000 climatic sequence.
Actions for Salinity Outcomes

New Joint Works Program progressing

In November 2002, the Ministerial Council agreed to a new Joint Works and Measures Program that will increase the efficiency and capacity of existing salt interception schemes, and construct new schemes. By 2009, the Program is expected to offset predicted future increases in average River Murray salinity at Morgan by 61 EC.

Progress with the new Joint Works Program in 2003-04 included:

• Finalisation of the Program’s cost sharing and benefit allocation arrangements
• Commencement of stage one work for the Pyramid Creek scheme
• Completion of bore field construction and stage one of the pipe laying for the Bookpurnong scheme
• Ministerial Council approval for construction of the Loxton scheme as a shared scheme between a Joint Work and a State Action
• Continuation of investigations into additional works that will contribute to achieving the required 61 EC.

Salt Interception Schemes in operation during 2003-04, most of which were constructed under the Basin’s 1988 Salinity and Drainage Strategy, prevented over 389,000 tonnes of salt from entering the River Murray.

Within-valley actions continuing

Improvements in natural resource management in the tributaries have continued in 2003-04 with funding support from the National Action Plan for Salinity and Water Quality (NAP) and the extension of the Natural Heritage Trust (NHT).

Thirty seven Integrated Regional Natural Resource Management Plans were accredited in 2003-04 for NAP and NHT funding. A total of $100.8 million in NAP funding was allocated to the Murray-Darling Basin in 2003-04, and an additional $7.5 million in NHT funding was allocated to regions situated wholly or partly within the Basin. Examples of on-ground works supported by NAP funding include:

• The Community Water Quality and Riverine Management project in Queensland. In 2003-04 the project achieved 30 sub-catchment plans with riverine components, 80 property management plans, 200 km of riparian zone under changed management practices (of which 100 km is fully fenced), and 10,000 ha under changed land management to reduce salinity risk and nutrient runoff;
• A Property Management Planning Pilot being jointly delivered through the Central West and Border Rivers/Gwydir Catchment Management Authorities (CMAs) in New South Wales. The 33 workshops delivered to-date have encouraged farmers to give closer consideration to on-ground works and measures that will contribute to regional plan targets, including salinity management targets;
• The Sustainable Irrigation Surface and Sub-Surface Infrastructure project in the Shepparton Irrigation Region in Victoria. In 2003-04 this project achieved 9,000 ha of laser grading, 12 km of primary drains, 19.5 km of community surface drains, 73 re-use systems, 10,000 ha of improved irrigation systems, 17 groundwater pumps and 200 ha of native revegetation;
• Salt Interception Scheme construction works and design/investigation activities in South Australia, complemented by a significant capacity-building program to increase the knowledge and skills of dryland farmers and irrigators.

Accountability Framework
Commission Salinity Registers

The Commission Salinity Registers are the primary record of jurisdictional accountability for salinity debits and credits. Debits and credits represent increases or decreases in average salinity costs to water users, based on increases or decreases in salinity at Morgan due to actions that will have a Significant Effect.

Register A lists 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), their EC effect at Morgan, their cost outcomes and the debits and credits attributed to those actions.

Examples of actions listed in Register A that can increase salinity at Morgan include new irrigation development, construction of irrigation drains, groundwater pumping, and wetland flushing. Examples of Register A actions that can offset increases in salinity include the salt interception schemes constructed under the Joint Works and Measures Program.

Register B records debits for actions that occurred before the Baseline date, their EC effect at Morgan, and their cost outcomes. Hence Register B addresses “Legacy of History” impacts that will have future effects. It also records credits for actions taken after the Baseline date that will offset the “Legacy of History” impacts.

The debits in Register B represent the predicted increases in salinity at Morgan attributed to each tributary in the 1999 Basin Salinity Audit. Register B actions that attract credits will include the State partners’ Program of Actions to meet end-of-valley targets.

Summary of Commission Registers A and B (currently transitional) for 2003-04 (salinity credits and debits-equivalent EC)

<table>
<thead>
<tr>
<th>SUMMARY—COMMISSION REGISTERS A</th>
<th>NSW</th>
<th>Vic</th>
<th>SA</th>
<th>Qld</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credits and Debits from Joint Schemes</td>
<td>14.8</td>
<td>14.8</td>
<td>0</td>
<td>0</td>
<td>29.5</td>
</tr>
<tr>
<td>Credits and Debits from State Actions</td>
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<td>-4.8</td>
<td>5.1</td>
<td>-</td>
<td>-8.2</td>
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<tr>
<td>Balance - Register A</td>
<td>6.2</td>
<td>10.0</td>
<td>5.1</td>
<td>0</td>
<td>21.3</td>
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</table>

<table>
<thead>
<tr>
<th>SUMMARY—COMMISSION REGISTERS B</th>
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<th>Vic</th>
<th>SA</th>
<th>Qld</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credits and Debits from Joint Schemes</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Credits and Debits from Delayed Salinity Inputs</td>
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<td>-4.1</td>
<td>-8.6</td>
<td>-0.3</td>
<td>16.7</td>
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<tr>
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<td>-4.1</td>
<td>-8.6</td>
<td>-0.3</td>
<td>16.7</td>
</tr>
<tr>
<td>Balance - Register A and B</td>
<td>2.5</td>
<td>5.9</td>
<td>-8.6</td>
<td>-0.3</td>
<td>4.6</td>
</tr>
</tbody>
</table>

*Note: Negatives indicate salinity debits

Assessment of New Irrigation Development in the Mallee Zone

The Salinity Impacts RApid Assessment Tool (SIMRAT) was developed to allow the salinity impacts of new irrigation development to be assessed in the interstate water trade project area of the mallee zone. SIMRAT underwent peer review in accordance with the requirements of Schedule C and was subsequently approved by the Commission as “fit for purpose” to assess the salinity impacts of new irrigation development in the Mallee Zone, including the application in South Australia to support accountability for water trade.

Rolling Five Year Reviews

In 2003-04, reviews were initiated for the following actions associated with Register A:

- Mallee Cliffs Salt Interception Scheme
- Barr Creek Drainage Disposal
- Rufus River Salt Interception Scheme
- Waikerie to Cadell.

Valley reviews were in progress for the Border Rivers and Moonie catchments in Queensland, the Border Rivers, Barwon-Darling, Gwydir, Namoi, Castlereagh, Macquarie, Bogang, Lachlan, Murrumbidgee, Upper Murray, Riverine Plains and NSW Mallee regions in New South Wales, the Mallee in Victoria, and the SA Mallee in South Australia.
Independent Audit Report for Salinity

The second annual audit on Strategy implementation and performance was undertaken by the IAG for Salinity for 2003-04. The IAG-Salinity identified very significant progress, particularly in:

- Establishment of Baseline Conditions
- Setting of end-of-valley targets
- Development and accreditation of the suite of models to evaluate salt loads in streams
- Establishment and use of protocols for assessing debits and credits of Accountable Actions
- Development of approaches to evaluate water trade impacts
- Establishment of the Salinity Registers A and B
- Development of processes for negotiating the final Register entries
- Development of information systems to support irrigation and water use efficiencies (South Australia) and management systems to underpin overall investment and monitoring (Mallee Catchment Management Authority).

The IAG 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 associated longer-term maintenance of the systems, data management, and information generation.

Priority Actions for 2004-05

There will be continued investment in on-ground works for salinity outcomes including the Joint Works and Measures Program, and continued development of the assessment framework for end-of-valley targets, within-valley actions and resource condition trends.

Priority investigations to generate knowledge and provide tools include:

- Continued development of hydrological and salt mobilisation models
- Continuation of the Morgan exceedance study
- Further investigations to assist development of end-of-valley targets
- Salinity assessment of flow manipulations and floodplain rehabilitation
- Projects investigating the effects of land use change and vegetation management
- Continuation of data collection, storage and reporting for the Basin Irrigation and Salinity Mapping project.

Priority activities associated with Strategy implementation include completion of the Mallee Tri-State five year review for Register B and completion of the five year reviews for the Border Rivers and Moonie valleys in Queensland.
A more holistic approach

In keeping with the Integrated Catchment Management philosophy, Commission is developing a multi-objective approach to flow and salinity management. New understanding about flow and salinity interactions has led to:

• An emerging awareness that salt storage in the landscape during drought has assisted in achieving in-stream salinity targets at Morgan, but it has also caused significant degradation of the lower Murray floodplain and wetland ecosystems;

• An appreciation that the Living Murray Environmental Works and Measures Program may contain actions accountable under the Strategy and salinity assessments will be required in order to maximise the effectiveness and efficiency of actions. The Program’s actions with salinity effects could include dilution flow effects, floodplain rehabilitation, wetland inundation and flushing, weir draw-downs, and targeted water recovery from high-impact zones; and

• Identification of possible threats to Basin water yield from climate change, reforestation, groundwater use and management, farm dams, bushfires, and return flows from irrigation.

Further investigations are being undertaken to address the issues emerging from our enhanced understanding, including opportunities to manage peak salinity through a combination of targeted engineering groundwater control together with improved utilisation of the existing dilution flow arrangements.