



Prepared for the South Australian Parliament by the Minister for the River Murray



**Government
of South Australia**

September 2006

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FOREWORD

South Australia's Strategic Plan identifies restoring the health of the River Murray as one of the most pressing challenges facing South Australia. As the driest state, on the driest continent in the world, the River Murray is vital to our landscape, our people and our way of life. In addition, South Australia, as the most downstream state in the Murray-Darling Basin, is particularly vulnerable to water management decisions that occur in upstream catchments and their related impacts.

In South Australia, the River Murray and the Murray-Darling Basin are of special social, economic and environmental importance. They play a vital role in sustaining our primary industries as well as securing domestic water supply for Adelaide. For a number of rural communities that rely on resources supplied by the Murray, the River's health is vital to their livelihood.

Evidence of the decline of the health of the River Murray ecosystem is compelling. Scientific data indicates that declining water quality, loss of native plants, animals, fish and wetlands and an increase in pest organisms are all contributing to the River's decline. If nothing is done, the River's health will inevitably decline further.

In recognition of the significant problems facing the River Murray, the *River Murray Act 2003* was proclaimed in July 2003. The Act aims to ensure that all reasonable and practical measures are taken to protect, restore and enhance the River Murray in recognition of its critical importance to the South Australian community.

The Act sets Objectives for a Healthy River Murray relating to the areas of river health, environmental flows, water quality and the human dimensions. Progress towards these objectives has been achieved through significant investment of both funding and activity across the South Australian Murray-Darling Basin region.

It is with pleasure that I present the *River Murray Act 2003* Annual Report for 2005-2006, which highlights the issues and achievements of the last year and demonstrates Government and community commitment to restoring the health of the River Murray.

Hon Karlene Maywald MP

MINISTER FOR THE RIVER MURRAY

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1. INTRODUCTION

The *River Murray Act 2003* came into operation on 24 November 2003, as part of the South Australian Government's election commitment to improve the condition of the River Murray. The Act is dedicated to protecting the health of the River Murray, while recognising the social and economic value of the river to all South Australians.

The River Murray Act aims to ensure that the River and its environs are properly protected from activities occurring within the South Australian Murray-Darling Basin that are likely to have an adverse impact on the health of the River, as well as to promote the intent of the Murray-Darling Basin Agreement 1992. In addition to formally acknowledging South Australia's reliance on the River Murray, the Act recognises the lack of coordination and inconsistencies in the application of various laws that apply to management of the River. The Act builds on existing legislation to better coordinate what is already in place as well as integrate protection of the River Murray into other related South Australian Acts (see Appendix 1). This ensures that the River Murray receives priority consideration in decision-making in South Australia.

Consistent with the principles of transparency and adaptive management, the River Murray Act contains clauses relating to periodic reviews that require an assessment of progress against the Objects and Objectives of the Act.

Section 10 of the Act requires the Minister responsible for the administration of the Act, on or before 30 September of each year, to prepare a report on the operation of the Act for the preceding financial year. The Minister must cause a copy of the report to be laid before both Houses of Parliament within 6 sitting days of the report being prepared. These timelines correspond with timelines for annual reports required under the *Public Sector Management Act 1995*.

The report must include:

- i) information on the implementation of the Act (taking into account the provisions of the Implementation Strategy); and
- ii) information on the extent to which the objects of the Act and the Objectives for a Healthy River Murray are being achieved; and
- iii) report on the following matters for the financial year –
 - a. the referral of matters to the Minister under any related operational Act;
 - b. the enforcement of the general duty of care; and
 - c. action taken by the Minister or an authorised officer under Part 8 of the Act (protection and other orders).

This annual report relates to the period from 1 July 2005 to 30 June 2006.

2. IMPLEMENTATION OF THE ACT

The aim of the River Murray Act is to protect, enhance and restore the River Murray in South Australia ensuring that its use and management are sustainable. More specifically, the Act aims to ensure that both existing and new activities that may adversely affect the health of the River are undertaken in a way that protects, maintains and improves river health.

The purpose of the Act is to provide coordination of, and fill gaps between the many other Acts applicable to the management of the catchment and its resources. The establishment of the referral mechanism has been central to the integration of the River's interest into the existing legislative base.

The first year of implementation of the Act necessarily focussed on bringing key provisions of the Act into operation. This included the drafting and promulgation of a number of regulations that activated parts of the referral system.

During 2005-06, implementation of the Act concentrated on finalising the River Murray Act Implementation Strategy, building relationships with councils, responding to referrals, developing policies relating to various aspects of the referral system (in cooperation with other agencies) and compliance matters.

2.1 IMPLEMENTATION STRATEGY

Section 21 of the Act requires the Minister to prepare and maintain the *River Murray Act Implementation Strategy* (Implementation Strategy).

In accordance with the requirements of the Act the Implementation Strategy must –

- set out the priorities that the Minister will pursue in order to achieve the objects of this Act and to further the implementation of the *Objectives for a Healthy River Murray*, and
- set out strategies that the Minister intends to adopt to meet those priorities.

On 22 November 2005, the Minister for the River Murray approved a draft River Murray Act Implementation Strategy for consultation with key stakeholder representative groups.

A final Implementation Strategy was developed in consultation with prescribed bodies listed in Regulation 5 of the *River Murray Regulations 2003*, as well as other associated bodies. The Minister approved the final River Murray Act Implementation Strategy on 5 June 2006.

Upon approval, the Act states that the Minister must –

- make appropriate provision for the publication of the Implementation Strategy (including by publication in the *Government Gazette*); and
- ensure that copies of the Implementation Strategy are reasonably available for inspection (without charge) and purchase by the public at a place or places determined by the Minister; and
- ensure that notice of any amendment to the Implementation Strategy is published in the *Government Gazette* within a reasonable time after the amendment is made.

Provisions for the marketing and availability of the Strategy, in line with the requirements of the Act, were being put in place at the time of publication of this report and will be progressed in the 2006-07 reporting year.

The Minister is required to review the Strategy at least once in every five years and will provide notice of any amendments through the *Government Gazette*.

2.2 SWITCHING ON PROVISIONS

The referral process is a key operational aspect of the Act, which ensures that applications for certain prescribed activities under related operational Acts are referred to the Minister for the River Murray as part of the approval process.

The referral mechanism for most of the related operational Acts is only activated when regulations are made prescribing the class of approval that must be referred (with the exception of the *Mining Act 1971* and the *Petroleum Act 2000* – see section 4 for further information).

During the reporting time frame, both the *River Murray Variation Regulations 2006* and the *Development (River Murray) Variation Regulations 2006* were brought into effect in January 2006, as well as amendments made to the *River Murray Regulations 2003*, in July 2005. These are in addition to the *Development (River Murray) Variation Regulations 2003* and the *Harbors and Navigation (River Murray) Variation Regulations 2003*, which were brought into effect in November 2003. Further information regarding the Regulations can be found in Appendix 2.

During 2005-06, the numbers of referrals made under new and existing regulations were slightly lower than 2004-05 figures. Further information on this is provided in section 4.1.

2.3 DELEGATIONS

Section 12 of the Act allows the Minister to delegate functions or powers under the Act or under any related operational Act to a body or person, for the time being, holding or acting in a specified office or position.

Some of the Minister's functions and powers are delegated to positions within State Government departments and statutory bodies, rather than to specific persons. This provides maximum flexibility for officers acting in positions to which functions or powers have been delegated, as they are able to undertake the functions and powers without further authorisation.

The delegations are assigned on a hierarchical basis, with persons at more senior positions being able, in addition to their specific delegations, to exercise all of the functions and powers delegated to subordinate officers.

All delegations are commensurate with the level of knowledge and responsibility required to undertake specific functions. Delegated officers must undertake their functions consistently with the Act.

Most delegations were put in place shortly after the Act came into operation and have been amended or added to on an as-needs basis.

2.4 APPOINTMENT OF AUTHORISED OFFICERS

Over one hundred officers have been authorised by the Minister under section 13 of the Act. Field officers from several Government agencies and statutory authorities have been authorised. The agencies are:

- Department of Water, Land and Biodiversity Conservation;
- PIRSA Fishwatch;
- Environment Protection Authority; and
- SA Murray-Darling Basin Natural Resources Management Board.

Although no new training was provided specific to the River Murray Act during 2005-06, a number of training sessions were held for officers authorised pursuant to the *Natural Resources Management Act 2004* (which complements the River Murray Act) and included a large number of officers operating in the Murray-Darling Basin area.

The River Murray Act Compliance and Enforcement Guidelines and information sheet (as required under section 14 (11) of the Act), written during 2004-05, remain in force without amendment.

2.5 RAISING AWARENESS

No new fact sheets were produced during 2005-06.

Publications have been produced in previous financial years to assist users of the Act and the general public to understand the Act and its requirements, namely:

- Fact sheets:
 - Overview of the Act
 - General Duty of Care
 - Referrals
- River Murray Act User's First Guide, and
- Exemption of certain outbuildings and farm buildings.

These publications remain in effect and continue to be available on the DWLBC web site, www.dwlbc.sa.gov.au, and in the offices of relevant government agencies and local councils.

2.6 MANAGEMENT AGREEMENTS

Section 18 of the Act allows the Minister to enter into management agreements with owners of land within the Murray-Darling Basin. The potential scope for management agreements is very wide. Management agreements may relate to:

- the conservation or management of water;
- the preservation, conservation, management, enhancement or re-establishment of any aspect of the natural resources of the River Murray; and
- any other matter associated with furthering the objects or objectives of the Act.

The Minister for the River Murray initiated no new management agreements in 2005-06. However, the Minister did contribute to the formulation of Land Management Agreements that were drafted and administered by local government in order to protect areas of high ecological value. These Agreements were put in place to mitigate impacts of a particular development, and to guide the outcome of a compliance matter.

2.7 AMENDMENT ACT

A River Murray (Miscellaneous) Amendment Act 2005 was assented to on 17 November 2005. The Amendment Act makes administrative and other minor changes to the *River Murray Act 2003* and two associated Acts (being the *Development Act 2003* and the *Renmark Irrigation Trust Act 1936*). The Amendment Act also seeks to clarify certain matters and to reduce current ambiguities associated with administration of, and compliance with, those Acts.

Amendments to the *River Murray Act 2003* include:

- Expanding the definition of activity to include that an activity can be a single act or a series of acts;
- Minor wording changes to correct typographical errors;
- Clarifying that a notice stating where the Implementation Strategy is available is gazetted, rather than the entire document; and
- Expanding the time frames for prosecution of a summary offence from 2 years to 3 years after the date of the alleged offence or, with the authorisation of the Attorney-General, up to 10 years.

Two schedules are also contained within the Act:

- Schedule 1 provides that under the *Development Act 1993*, the Minister for the River Murray will only receive amendments to Development Plans that relate to an area within the Murray-Darling Basin.
- Schedule 2 provides that under the *Renmark Irrigation Trust Act 1936* the Renmark Irrigation Trust (RIT) can undertake transactions using electronic funds transfer (EFTPOS) or any other form that the RIT agrees to by resolution.

3. MEETING THE OBJECTS OF THE ACT AND OBJECTIVES FOR A HEALTHY RIVER MURRAY

The Objects of the Act seek to protect the River Murray by ensuring that all reasonable measures are taken to safeguard, restore and enhance the River. Any existing or proposed activities should be undertaken in a way that benefits the River while providing for the economic, social and physical well being of communities, and promoting ecologically sustainable development.

The Act itself provides both the measures and mechanisms to provide protection for the River. Through regulations, referrals, authorised officers, compliance tools and policies implemented pursuant to the Act, the River and its environs can be protected from inappropriate or damaging activities and developments.

The objects of the Act are:

- i. to ensure that all reasonable and practicable measures are taken to protect, restore and enhance the River Murray in recognition of its critical importance to the South Australian community and its unique value from environmental, economic and social perspectives and to give special acknowledgement to the need to ensure that the use and management of the River Murray sustains the physical, economic and social well being of the people of the State and facilitates the economic development of the State
- ii. to provide mechanisms to ensure that any development or activities that may affect the River Murray are undertaken in a way that provides the greatest benefit to, or protection of, the River Murray while at the same time providing for the economic, social and physical well being of the community
- iii. to provide a mechanism so that development and activities that are unacceptable in view of their adverse effects on the River Murray are prevented from proceeding, regulated or brought to an end
- iv. to promote the principles of ecologically sustainable development in relation to the use and management of the River Murray
- v. to ensure that proper weight is given to the significance and well being of the River Murray when legislative plans and strategies are being developed and implemented
- vi. to respect the interests and aspirations of Indigenous peoples with an association with the River Murray and to give due recognition to the ability of those Indigenous people to make a significant contribution to the promotion of the principles of ecologically sustainable development in relation to the use and management of the River Murray
- vii. to respect the interests and views of other people within the community with an association with the River Murray and to give due recognition to the ability of those people to make a significant contribution to the promotion of the principles of ecologically sustainable development in relation to the use and management of the River Murray, and

- viii. otherwise to ensure the future health, and to recognise the importance, of the River Murray.

The Objectives for a Healthy River Murray, which contribute to the achievement of the Objects, are divided into four key result areas, namely river health, environmental flow, water quality and human dimension objectives.

There are a large number of programs and projects undertaken in the Murray-Darling Basin every year and 2005-06 was no exception. Various government agencies (State, local and the Australian Government), industry groups and community groups have been involved in a broad range of initiatives designed to improve the health of the River. The work being undertaken in the region is significant with a list of projects provided in Appendix 3. A sample of the key programs or projects that directly meet each of the Objectives, which in turn facilitate the achievement of the Objects, is provided below.

3.1 RIVER HEALTH OBJECTIVES

- the key habitat features in the River Murray system are to be maintained, protected and restored in order to enhance ecological processes;

In 2005-06 there were two significant projects undertaken in the SA Murray-Darling Basin that contributed to this Objective.

Firstly, following the completion of the Murray-Darling Basin Commission's Technical Report '*Preliminary Investigations into Observed River Red Gum Decline along the River Murray below Euston*', further investigations were undertaken, including modelling and mapping of tree health at Chowilla and development of future projects. In September 2005, the Murray-Darling Basin Ministerial Council agreed to provide funding to the River Red Gum Rescue Project. The aim of the project being to deliver water to stressed River Red Gums at priority sites along the River Murray. Over the last two years more than 7,000 stressed trees at 21 sites covering an area of over 800 hectares of the Chowilla floodplain have been watered, resulting in a very positive ecological response.

Based on the highly successful results of the project, funding has been requested to continue the project in 2006-07. The ongoing objectives of this project will include rewatering many of the wetlands included in the 2005-06 project to ensure that the trees and young seedlings remain healthy. The project will also focus on identifying new watering sites through a public consultation process.

A second significant project, the development of the River Murray Forest, commenced during 2005-06. The River Murray Forest is an innovative new multi-agency project that provides a strategic approach to landscape revegetation with multiple benefits to the

environment. Planning and preparation for project implementation is underway. A project planning team has been established and a draft business plan prepared. A draft proposal for a project launch has also been developed and contact with regional stakeholders has commenced.

- the environments constituted by the River Murray system, with particular reference to high-value floodplains and wetlands of national and international importance are to be protected and restored

The South Australian Government has initiated a comprehensive program that includes a combination of on-ground works, scientific investigations and monitoring (both physical and ecological) and the development of an Asset Environmental Management Plan as part of the Murray-Darling Basin Ministerial Council's The Living Murray Initiative. The program, among other things, aims to manage existing and additional flows to improve river health for the Murray.

The program is being undertaken through strong partnership arrangements between the South Australian Government, the Murray-Darling Basin Commission, the SA Murray-Darling Basin Natural Resources Management Board, CSIRO Healthy Country Program and the Ramsar Taskforce.

There are two nominated icon sites in South Australia for which Environmental Management Plans were written in 2005. These are the Chowilla Floodplain and the Lower Lakes, Coorong and Murray Mouth. The plans describe each asset, their current management regime and outline optimal water delivery to the sites to maximise ecological outcomes. The plans were updated in 2005-06 to reflect new research findings and greater understanding of these assets. Consultation with targeted community groups has greatly refined and improved these plans.

- the extinction of native species of animals and vegetation associated with the River Murray system is to be prevented

During 2005-06 the Minister for Environment and Conservation released the draft 'No Species Loss – A biodiversity strategy for South Australia' for public consultation. The strategy, while not specifically focused on the Murray-Darling Basin area, enunciates the South Australian Government's policy for halting the decline of the State's terrestrial, aquatic and marine biodiversity over the next 10 years. The policy is particularly relevant to areas of high biodiversity significance, such as the environments surrounding the River Murray.

The overarching strategy has been developed to build upon and integrate with other key government policies such as NatureLinks, South Australia's State Natural Resources Management Plan, Estuaries of South Australia: Policy and Action Plan, the Wetlands Strategy for South Australia and the Living Coast Strategy for South Australia.

The strategy particularly aims to progress the following policy directions required for preventing further loss of species:

- governance arrangements that identify and clarify responsibilities
- collective responsibility and collaborative action for the conservation of biodiversity by all levels of government, industry and community
- landholder duty of care in all land ownership forms
- intergovernmental mechanisms for a statewide network of conservation lands and ecological linkages, and
- knowledge creation and building social and institutional capacity for effective conservation of biodiversity.

- barriers to the migration of native species of animal within the River Murray system are to be avoided or overcome

As part of the Murray-Darling Basin Ministerial Council's plan to restore native fish passage along the River Murray between Lake Hume and the sea between 2003 and 2008, fishways are being constructed at all locks and weirs along the River Murray. Fishways have been completed and are operational at Locks 7, 8, 9, 10 and 15. A vertical-slot fishway and rock-ramp fishway have also been completed at Tauwichee Barrage and a vertical-slot fishway at Goolwa Barrage.

Work is programmed to start at Locks 1 and 3 in the 2006-07 financial year.

3.2 ENVIRONMENTAL FLOW OBJECTIVES

- ecologically significant elements of the natural flow regime of the River Murray system are to be reinstated and maintained

The Living Murray Business Plan, developed during 2005-06, describes the implementation of the Intergovernmental Agreement on Addressing Water Over Allocation and Achieving Environmental Objectives in the Murray-Darling Basin.

To further promote the ecological importance of natural flow regimes in South Australia, the strategy *'Environmental Flows for the River Murray – South Australia's framework for collective action to restore river health 2005-2010'* was released in October 2005, with the subsequent introduction of the River Murray Environmental Management function within the SA Murray-Darling Basin Natural Resources Management Board. The Strategy responds to both the Murray-Darling Basin Ministerial Council's *First Step* decision and the Intergovernmental Agreement on Addressing Water Overallocation and Achieving Environmental Objectives in the Murray-Darling Basin by setting directions and priorities for the recovery, delivery and management of flows in the River Murray in South Australia for the next five years.

The River Murray Environmental Manager function was established to ensure that River Murray environmental water within South Australia is delivered, allocated and managed to maximise river health and improve biological diversity of the River Murray, its floodplains and wetlands while recognising and respecting the needs of other river users and the local community. The focus of the first year has been to set up processes and frameworks to facilitate water donations for environmental purposes and to target priority sites for environmental watering.

Furthermore, South Australia's Water Recovery Package (released in May 2006) identifies measures for recovering 35 GL in order to meet South Australia's water recovery target under the First Step decision of the Living Murray Initiative. The package includes measures to secure Government held water for environmental use, innovative market options and investments in infrastructure for improved water use efficiency.

South Australia actively participated in the Murray-Darling Basin Commission's Interstate Water Trading Project during 2005-06. The Water Trading Project Board has identified six key water products as being tradeable on a broad scale throughout the Murray-Darling Basin and South Australia has been involved in the development of an exchange rates matrix to convert one water product to another, when traded between States..

South Australia is also an active participant in the Department of the Prime Minister and Cabinet's Water Trading Group (established to progress the NWI interstate water trade reforms).

- the Murray Mouth should be kept open in order to maintain navigation and the passage of fish in the area, and to enhance the health of the River Murray system and estuarine conditions in the Coorong

The South Australian Lower Murray Co-ordinating Committee has overseen a series of activities that aim to ensure that the River Mouth is kept open and that the Coorong and Lower Lakes are managed to provide both for the economic and ecological health of the region.

Dredging, which commenced in October 2002, has continued non-stop with two dredges operating to ensure that the River Mouth remains open to protect the ecological health of the Coorong. The work has progressed well and the design channel dimensions were achieved for the first time in May 2006, allowing a 50% reduction in dredging effort. The development of a sophisticated computer model to describe the sand deposition process at work in the Murray Mouth has continued.

- significant improvements are to be made in the connectivity between and within the environments constituted by the River Murray system

A project aimed at improving connectivity between environments is being undertaken in the Mallee region. The Mallee dryland corridor extends several kilometres each side of the Murray Valley in South Australia and is a priority location for natural resource management works. The River Murray/ Mallee Dryland Corridor Market Based NRM Investment Program is coordinating the current revegetation grant scheme as well as developing market based and associated community marketing strategies. An investment strategy is being developed for the corridor that integrates the social, environmental and economic objectives of the various stakeholders and considers trade-off issues.

3.3 WATER QUALITY OBJECTIVES

- water quality within the River Murray system should be improved to a level that sustains ecological processes, environmental values and productive capacity of the system

In the 1970s, Waste Disposal Stations were established along the River Murray to provide river vessels with a facility to collect toilet waste and for the disposal of garbage. DWLBC operates a total of twelve stations between Lock 6 and Goolwa.

Previously, most of this waste from houseboats was discharged directly into the River. The discharge of 'black water' was identified as a major risk in the spread of disease by micro-organisms entering intake supplies to townships and private households, as well as to recreational users of the River.

Six of these River Vessel Waste Disposal Stations discharge effluent water into "soakage trenches" located in the floodplain. In 2005-06 the Waste Disposal Station at Swan Reach was fitted with a wastewater treatment plant, under a joint funding partnership with the Mid Murray Council that also allows the Council to treat wastewater from septic tanks. Planning is also well advanced for the upgrade of the Morgan Waste Disposal Station. DWLBC plans to improve the other Waste Disposal Stations in the coming years.

- the impact of salinity on the ecological processes and productive capacity of the River Murray system is to be minimised

The River Murray Salt Interception Program addresses the threat of salinity to the River Murray and its floodplain environments by detailed monitoring of salt loads, assessment and prioritisation of locations for salt interception infrastructure, and development of a Regional Saline Disposal Strategy. Salt Interception Schemes (SIS) reduce the salinity of the River Murray and its floodplains by pumping saline groundwater to evaporation basins, allowing irrigation induced salinity impacts to be offset.

The Woolpunda and Waikerie SIS continue to prevent approximately 350 tonnes of salt per day entering the River Murray. The Government has provided funds to operate salt interception schemes until 2007-08.

A Salt Interception Scheme has also been proposed for Murtho. The Murray-Darling Basin Commission Technical Working Group resolved various technical issues relating to the proposal during 2005-06 and a final version of the Murtho approval submission has been presented to selected members of the Working Group.

Construction of the Loxton Salt Interception Scheme continued in 2005-06 with the completion of the stage 1 pipe-laying contract. The construction of a directional bore has been completed and a trial is underway to review its performance. Construction will continue on the project for the next two years. The Murray-Darling Basin Ministerial Council agreed on new cost sharing arrangements, which comprised of joint works of 98% (Murray-Darling Basin Commission funded) and South Australian State Action of 2% (National Action Plan funded).

Construction of the Bookpurnong Salt Interception Scheme has now been completed with the opening occurring on the 14th September 2006. The scheme capacity has been reduced due to aluminium clogging some bores. Work will continue in 2006-2007 to investigate a solution to this issue.

- nutrient levels within the River Murray system are to be managed so as to prevent or reduce the occurrence of algal blooms, and to minimise other impacts from nutrients on the ecological processes, environmental values and productive capacity of the system

A project designed to reduce nutrient levels within the River and improve water quality is the rehabilitation of the Lower Murray Reclaimed Irrigation Areas (LMRIA). This project provides financial assistance to landowners in the Lower Murray area to improve their irrigation practices, capture and reuse of drainage water and improve water use efficiency thereby reducing nutrient loads in the River. The project will provide a sustainable basis for the dairy industry while also improving the health of the River.

Private Irrigation Trusts and Private Irrigators are required to sign a Funding Deed with the Minister for the River Murray to receive funds for on-ground rehabilitation works. Signing the Deeds proceeded well in 2005-06 with 18 of the 22 Deeds being signed with the remaining Deeds being for two small irrigators and two districts expected to be completed in early 2006-07. Rehabilitation works were carried out in seventeen districts during 2005-06 with many now being well advanced.

The Department of Water, Land and Biodiversity Conservation has also engaged in a partnership with the Environment Protection Authority to study 'before and after' aspects of River water quality and the assessment of external stormwater entering the LMRIA irrigation bays.

- the impact of potential pollutants, such as sediment and pesticides, on the environments constituted by the River Murray system is to be minimised

Zero Waste SA, with the assistance of local government, is undertaking free household hazardous waste collections to help residents dispose of unwanted chemicals in an environmentally safe way. Licensed professional waste management contractors set up temporary collection points in metropolitan and country areas of the State to which householders deliver their unwanted chemicals.

There are also a number of programs aimed at assisting commercial chemical users. ChemClear is an industry-funded initiative for the safe collection and disposal of rural chemicals managed by Agsafe. The objectives of the ChemClear program are to minimise the generation of unwanted rural chemicals, minimise the accumulation of unwanted rural chemicals and any associated risks of impact to the environment, public health and trade, provide for a collection and disposal service for rural chemicals and provide a management system for unwanted registered rural chemicals.

Another program aimed at reducing the impact of pesticides on the environment is the drumMUSTER program. A national program run in concert with local councils, drumMUSTER facilitates the collection and recycling of empty, cleaned, non-returnable crop production and on-farm animal health chemical containers. Collections occur once to twice a year in the Murray-Darling Basin, depending on the local council.

3.4 HUMAN DIMENSION OBJECTIVES

- a responsive and adaptable approach to the management of the River Murray system is to be implemented taking into account ecological outcomes, community interests and new information that may become available from time to time

The River Murray Irrigation Improvement Program is a computer-based Irrigation and Recording Evaluation Systems (IRES) tool. The Program was enhanced in 2005-06 by incorporating refined crop coefficients and enabling users web-access to evapotranspiration data for calculation of field application efficiency indicators. In addition, the improved software allows for expanded reporting and analysis flexibility down to crop type or variety level. Pilot groups have been established in the Murray Bridge/ Mannum and Currency Creek/ Furness districts. Initial development of a centre-pivot module has been undertaken with potato and onion growers.

IRES is a key component of Land and Water Management Case Studies (LWMPCS) in the Riverland of South Australia. The aim of the initiative is to enhance the sustainability of irrigation through improved irrigation management and water use efficiency, thereby helping to protect the health of the river.

- the community's knowledge and understanding of the River Murray system is to be gathered, considered and disseminated in order to promote the health and proper management of the system

In 2005-06 the *State Natural Resources Management Plan 2006* was finalised following a comprehensive consultation process. The *State Natural Resources Management Plan 2006* sets out a 50-year vision and an integrated conceptual framework for natural resources management, which seeks to address key risks and outcomes, through a range of policies and strategies. The plan will be implemented through the activities of agencies and regional Natural Resources Management Boards. The Murray-Darling Basin has been assigned a specific board named the South Australian Murray-Darling Basin Natural Resources Management Board (SA Murray-Darling Basin Natural Resources Management Board).

Seven local members of the South Australian Murray-Darling Basin community, along with the long-standing Presiding Member of the River Murray Catchment Water Management Board, have been appointed to the inaugural SA Murray-Darling Basin Natural Resources Management Board. This combination of irrigators, land managers and active community members provides an excellent foundation for ensuring local knowledge and understanding are applied to the management of the River system.

Local Action Planning Groups continue to be actively involved throughout the South Australian Murray-Darling Basin and are instrumental in ensuring that the community's knowledge of and aspirations for the catchment inform management decisions.

- the interests of the community are to be taken into account by recognising Indigenous and other cultural, and historical, relationships with the River Murray and its surrounding areas, and by ensuring appropriate participation in processes associated with the management of the River Murray system

The SA Murray-Darling Basin Natural Resources Management Board has continued to provide resources during 2005-06 that will enable community groups and individuals to further develop their understanding and capacity to play a meaningful role in natural resource management in the South Australian Murray-Darling Basin.

The Board employs a team of officers with a complementary skills base to provide effective linkages between the community, government and industry. These officers support the community to manage its natural resources and build capacity in areas such as leadership, education, team building, group development, managing change, and adaptive management.

The Murray-Darling Basin Commission has funded two Indigenous Facilitators, located within the SAMDBNRM Board, to engage with Indigenous groups regarding planning and management at the South Australian Living Murray Icon Sites.

- the importance of a healthy River to the economic, social and cultural prosperity of communities along the length of the River, and the community more generally is to be recognised

The Riverland Strategic Tourism Plan takes into account the wide range of economic, social and environmental aspects that confronts, challenges and provides opportunities for the Riverland community and draws these together to set out strategies for realistic growth in tourism, consistent with the community's aspirations. The Riverland Strategic Tourism Plan is a collaborative initiative between the:

- Riverland Development Corporation
- Riverland Tourism Association
- Berri-Barmera Council
- Loxton-Waikerie Council
- Mid Murray Council
- Renmark-Paringa Council
- South Australian Tourism Commission, and
- Department for Environment and Heritage

A copy of the Plan is available from:

http://www.tourism.sa.gov.au/tourism/plan/Riverland_Report_v2.pdf

In addition, the SA Murray-Darling Basin Natural Resources Management Board continued to collaborate with the South Australian Museum initiative to bring science and environmental education about the River Murray to the community. The Museum held its annual road show in Fleurieu Peninsula during 2005-06. The Board also continued to support the annual development of the Museum's Biodiversity Gallery.

4. REFERRALS, ENFORCEMENT OF THE GENERAL DUTY OF CARE AND ACTIONS TAKEN

The provisions within the River Murray Act establishing referrals and the general duty of care are important tools in ensuring the protection of the River Murray.

The referral provisions of the Act require bodies administering related operational Acts to take the River Murray into account in the preparation of plans and undertaking of functions. The bodies must also seek input from the Minister for the River Murray before granting approval for certain types of activities in certain locations. Most of the referral provisions require regulations to be made, which in turn set out the types of activities that need to be referred. As outlined in section 2.2, a limited number of regulations have been made to date. Details of the regulations that have been made can be found in Section 4.1.

The Act also established a duty of care for the River, enforceable by a River Murray Protection Order or Reparation Order. All persons have a general duty of care to take reasonable measures to prevent or minimise harm to the River Murray through actions or activities. A breach of this duty does not constitute an offence but the issuing of a Protection Order or Reparation Order can enforce compliance.

A report on the enforcement of the general duty of care and actions taken is provided in sections 4.2 and 4.3.

4.1 REFERRAL OF MATTERS UNDER RELATED OPERATIONAL ACTS

There was a stabilisation in the numbers of referrals during the 2005-06 reporting period. The anticipated projection of referrals for 2005-06 was 700, which allowed for an increase over the previous year (the number of referrals received in 2004-05 was 657), however the actual total of mandatory referrals received under the River Murray Act was 609, which was lower than anticipated.

Many of the referrals under related operational Acts require regulations to come into effect. New regulations were made during 2005-06, which was a contributing factor to a reduction in referrals. The Acts currently requiring referrals are the *Development Act 1993*, *Mining Act 1971*, *Petroleum Act 2000* and the *Harbors and Navigation Act 1994*. The majority of referrals are being generated pursuant to the *Development Act 1993*.

4.1.1 DEVELOPMENT ACT 1993

Development applications for prescribed activities within the River Murray Protection Area are referred to the Minister for the River Murray. The Minister may impose conditions on the development if the application is to be approved by the relevant authority or may direct the relevant authority to refuse the

application if it is considered to be non-compliant with the Objects of the Act and Objectives for a Healthy River Murray.

Development Applications

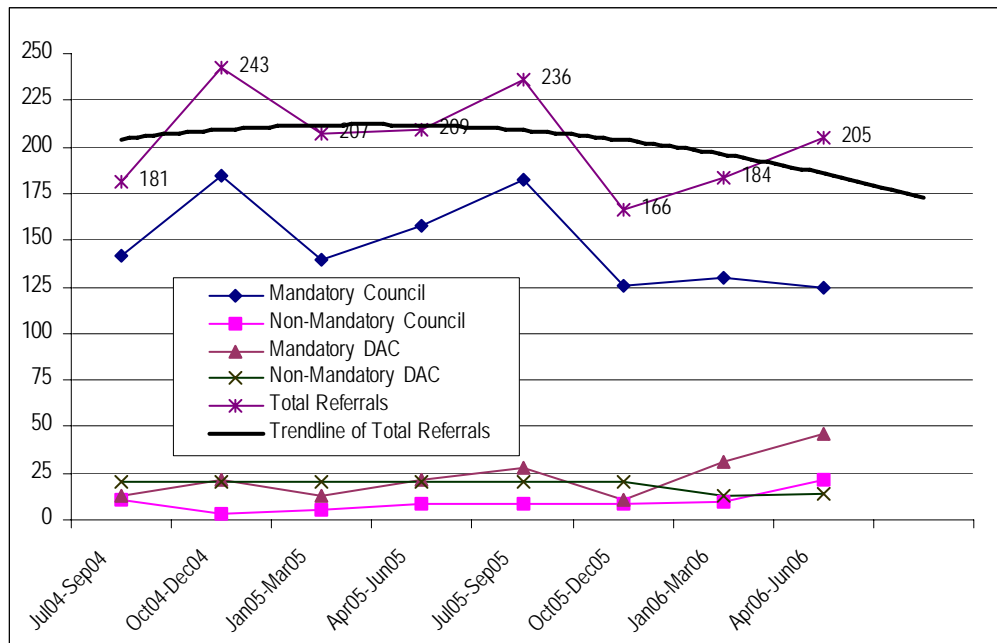
A total of 746 mandatory and non-mandatory development applications were referred to the Minister during 2005-06. Of the 137 non-mandatory referrals, 69 were land division proposals. It is clear from the number of non-mandatory referrals being made that council officers are keen to ensure that all development applications are assessed consistently and result in good outcomes for the River.

Of the 609 mandatory applications referred, over half related to dwellings, sheds, garages and outbuildings in the River Murray Protection Area with the remainder relating to land use, river use, water use, alteration to the landscape and/or impacts upon riparian zones, vegetation or biodiversity.

Of the mandatory applications referred, 229 had conditions imposed by the Minister, while the Minister's delegate negotiated with an additional 99 applicants for further information or amendments to the application so as not to be refused. Twenty-one applications (3%) were refused, with 4 applicants lodging appeals.

Despite a stabilisation of the numbers of referrals, high levels were once again received throughout the year (see graph below). A 25% improvement was made this year on the number of assessments responded to on time, as well as an improvement in the quality of the information provided. A 98.5% on time response rate was achieved during 2005-06 with one quarter attaining a 99.5% on time rate.

Figure 1. Number of Mandatory / Non Mandatory Referrals 2004-2006



New system improvements in document receipt, tracking, access to GIS databases, and additional human resources has enabled the continued improvement.

Additionally, improved linkages between development planning and planning for sustainability outcomes are being facilitated through the implementation of the *Natural Resources Management Act 2004*.

Plan Amendment Reports

Under the *Development Act 1993* the Minister for the River Murray is referred Plan Amendment Reports (PARs) at several stages of the planning process, including the Statement of Intent phase.

Fifty-one PARs and 34 SOI's (Statements of Intent) were referred to the Minister for the River Murray during 2005-06. The Minister responded to each of these referrals with comments and recommendations.

During 2004-05 discussions were held regarding the best method for improving the consistency of Development Plans in the South Australian Murray-Darling Basin to bring them in line with the objects and objectives of the Act. This work was initiated during 2005-06 through the Better Development Plans Project run by Planning SA.

4.1.2 **MINING ACT 1971**

Under the *Mining Act 1971*, applications, including renewals, within a River Murray Protection Area must be referred to the Minister for the River Murray for an:

- exploration licence,
- mining lease;
- miscellaneous purpose licence;
- retention lease; and
- authorization to use declared equipment;

There were 30 referrals made for a variety of exploration licenses, declared equipment use and mining leases during 2005-06. Two resulted in re-negotiation and significant changes to the Mining Lease conditions.

4.1.3 **PETROLEUM ACT 2000**

Under the *Petroleum Act 2000*, Statements of Environmental Objectives, including a revised statement that applies to any part of the Murray-Darling Basin, must be referred to the Minister for the River Murray.

One Classification Assessment and one Statement of Environmental Objectives were referred to the Minister during 2005-06. Proactive measures to prevent erosion of streambanks and beds were detailed in one of the Statements.

In March 2005, a paper detailing implementation issues associated with the Petroleum Act and regulations was released and comments were submitted. In the 2005-06 financial year this was further progressed with discussions between PIRSA and DWLBC on the current administrative arrangements. A draft Memorandum of Understanding of Administrative Arrangement has since been produced. Although not finalised, the aim is to further ensure that the objects of the River Murray Act are operationally enshrined in petroleum activities.

4.1.4 **HARBORS AND NAVIGATION ACT 1994**

River events that require a licence under the *Harbors and Navigation Act 1993* and involve a number of motorised vessels as specified in the Regulations, must be referred to the Minister for the River Murray.

One aquatic activity license was referred during 2005-06, with no objections or amendments. Preliminary discussions have occurred in 2005-06 regarding amending the regulations of the *Harbors and Navigation Act 1993* so that recreational activities do not cause damage to the River Murray system.

4.2 ENFORCEMENT OF THE GENERAL DUTY OF CARE

The general duty of care states, “a person must take all reasonable measures to prevent or minimise any harm to the River Murray through his or her actions or activities”. Harm includes risk of harm, future harm and anything declared by regulation to be harm.

A Compliance Officer for the River Murray Act was engaged full time during the 2005-06 reporting year. In addition to enforcing the general duty of care principle, the Compliance Officer was involved in educating and raising awareness amongst stakeholders, councils, and Government agencies who have a vested interest in the welfare of the health of the River Murray.

One action to enforce the General Duty of Care was instigated during the reporting time frame, which resulted in an action being taken under Part 8 of the Act.

4.3 ACTIONS TAKEN UNDER PART 8 OF THE ACT – PROTECTION AND OTHER ORDERS

Protection Orders may be issued to secure compliance with the general duty of care, a condition of a statutory authorisation or any other requirement. An order may require a person to stop or not start a particular activity, to only carry on an activity at a particular time, to take specified action within a certain time, to undertake tests or monitoring or prepare a plan or report. If urgent action is required, an authorised officer may issue an emergency Protection Order. It is an offence not to comply with a Protection Order.

A Reparation Order can be issued if the Minister is satisfied a person has caused harm to the River Murray by contravening the general duty of care, a condition of a statutory authorisation or any other requirement. A Reparation Order may require a person to take particular action to make good any damage or make payments to enable action to be so taken. The Order may include other requirements to prevent or mitigate further harm to the River. An authorised officer may also issue an emergency Reparation Order.

During 2005-06, forty-two matters were reported relating to activities that were likely to cause harm to the river. Nineteen of these matters resulted in requests for voluntary compliance to repair damage that had been caused to the River and each of these requests were carried out without the need to issue a River Murray Order. An additional matter resulted in a River Murray Reparation Order being issued for reparation work to be carried out. This work was successfully completed.

5. SUMMARY

Implementation of the River Murray Act during the 2005-06 financial year has further increased protection for one of South Australia's great icons. In addition, the three tiers of government as well as the wider community have taken a number of steps (through the application of various projects and programs) to improve the health of the River Murray and its ecosystems.

In 2005-06, a significant proportion of activity was focused on execution of the Act through compliance and referral mechanisms. Employment of a Compliance Officer for the Act on a full time basis provided an avenue to enforce the General Duty of Care. While 42 matters were reported as potentially causing harm to the River only one action resulted in the issue of a River Murray Order. This result demonstrates the significant role that education and negotiation play in promoting the General Duty of Care.

A significant achievement during 2005-06 was the completion of the River Murray Act Implementation Strategy. The Implementation Strategy, which was developed in consultation with prescribed bodies, sets out the priorities the Minister will pursue in order to achieve the Objects of the Act and further pursue the Objectives of a Healthy River Murray. Publication and marketing of this document will be progressed in the 2006-07 financial year.

As discussed in section 3, extensive investments are being made in the South Australian Murray-Darling Basin in order to achieve the Objects and Objectives of the Act. A large number of programs and projects continued or commenced during 2005-06, aimed at improving water quality, environmental flows, key habitat features, protection of native species, and the community's involvement in managing the River.

The River Murray is of strategic importance to the entire State; the levels of investment and activity reflect this. The significant advances that have occurred over the 2005-06 financial year will provide an excellent basis for ongoing improvements in river health into the future.

APPENDIX 1 – RELATED OPERATIONAL ACTS

Aquaculture Act 2001
Coast Protection Act 1972
Crown Lands Act 1929
Development Act 1993
Environment Protection Act 1993
Fisheries Act 1982
Harbors and Navigation Act 1993
Heritage Places Act 1993
Historic Shipwrecks Act 1981
Irrigation Act 1994
Mining Act 1971
Murray-Darling Basin Act 1993
National Parks and Wildlife Act 1972
Native Vegetation Act 1991
Opal Mining Act 1995
Petroleum Act 2000
South Eastern Water Conservation and Drainage Act 1982
Natural Resources Management Act 2004

APPENDIX 2 – REGULATIONS

RIVER MURRAY REGULATIONS 2003

The *River Murray Regulations 2003* (RM Regulations) came into operation on 24 November 2003 and were amended on 1 July 2005. The RM Regulations establish the River Murray Protection Areas (RMPAs). There are two RMPAs – one for the main stem, floodplain and cliffs, the other for the tributaries. The RMPAs are the areas in which applications for activities prescribed under the related operational Acts must be referred to the Minister for the River Murray.

The RM Regulations also prescribe a number of minor mechanistic matters, including the prescribed rate of interest for outstanding debts and the manner of notification for certain processes.

The RM Regulations also provide that the Minister will consult the Local Government Association, regional local government associations, the South Australian Murray-Darling Basin regional NRM board, the Aboriginal Legal Rights Movement Inc and the Aboriginal Heritage Committee established under the *Aboriginal Heritage Act 1988* in relation to:

- development of the Implementation Strategy under the Act
- changes to a River Murray Protection Area; and
- proposed changes to the referrals of development applications under the Development Regulations.

RIVER MURRAY VARIATION REGULATIONS 2006

The River Murray Variation Regulations 2006 came into operation on 19 January 2006.

The Variation Regulations ensure that management plans prepared or amended under section 38 of the *National Parks and Wildlife Act 1972* (that relate to a reserve located wholly or partially within the Murray-Darling Basin) are referred to the Minister for the River Murray before public consultation.

DEVELOPMENT (RIVER MURRAY) VARIATION REGULATIONS 2006

The *Development (River Murray) Variation Regulations 2006* (Development Regulations 2006) also came into operation on 19 January 2006.

The Development Variation Regulations 2006 amend the Development Regulations to include consultation with the Minister for the River Murray when undertaking Plan

Amendment Reports or giving relevant approval under section 25(15) or 26(8) of the Development Act.

The Development Variation Regulations provide exemption of approval under section 49 of the Development Act for works undertaken by the Minister for the River Murray where work is being undertaken in connection with the management of water flows within the River Murray system.

The Regulations also introduce some additional provisions relating to the River Murray in particular and alter a number of referral and concurrence clauses for councils in the Murray-Darling Basin.

APPENDIX 3 – PROGRAMS AND PROJECTS

The South Australian Government supports a wide range of programs that directly contribute to or complement the Objects of the Act and Objectives for a Healthy River Murray. These programs are listed below against the relevant Objective. Many programs contribute to a number of Objectives, but for simplicity have only been listed under the Objective to which they most clearly relate. Programs have not been listed against the Objects of the *River Murray Act 2003*, as the Objectives provide a more detailed breakdown and encompass programs that relate to the Objects.

1.1 *The key habitat features in the River Murray system are to be maintained, protected and restored in order to enhance ecological processes*

- **Amendment of *Native Vegetation Regulations 1991***

The *Native Vegetation Regulations 1991* were amended in 2006 to:

- remove loopholes that resulted in vegetation clearance contrary to the intent of Native Vegetation Act controls
- relax controls to facilitate fire safety and reasonable land management practices
- provide for significant environmental benefit offsets for developments (including works of the Crown) considered by the Minister for Environment and Conservation to be in the 'public interest' and major developments subject to an Environmental Impact Statement process; and
- protect dead trees that are habitat for nationally listed species (under the EPBC Act).

- **Lower Murray Land Use Integration Project**

A tri-State collaboration between South Australia, New South Wales and Victoria is integrating land use data sources and mapping. This technology and learning can be applied in assessing the impact of farming practices on the River Murray.

- **Management Plans for National Parks and Wildlife Act Reserves and Crown Land Wetlands**

Management plans under the National Parks and Wildlife Act relating to a reserve located wholly or partly within the Murray-Darling Basin must seek to further the objects of the River Murray Act. In 2005-06, DEH released management plans for consultation for Red Banks Conservation Park and Totness Recreation Park, and adopted the management plan for Red Banks Conservation Park. Draft management plans commenced during this period for Coorong National Park, Mowantjie Willauwar Conservation Park, Ngaut Nguat Conservation Park and Poonthie Ruwi-Riverdale Conservation Park.

- **New Conservation Park along the Murray**

The Waikerie Forest Reserve (31.5 hectares) has been dedicated as a reserve under the National Parks and Wildlife Act as the Ramco Point Conservation Park.

- **Sustainable Rivers Audit**

The Murray-Darling Basin Ministerial Council initiated the development of a Sustainable Rivers Audit in 2000 to assess river health using 5 themes: macroinvertebrates, fish, water quality, hydrology and physical habitat. However, the only themes that have been adequately developed are the macroinvertebrate and fish components, and recent commitments between the Murray-Darling Basin Commission and member States have agreed to continue sampling and refining methods for these two themes over the next 6 years.

In 2006, the EPA agreed to sample the 35 sites allocated to the lower River Murray section of the basin. This included sites from the Eastern Mt Lofty Ranges (8), lower Murray (2), mid Murray (7) and upper Murray (18). Sampling was carried out from 16 May and concluded on 21 June 2006. Due to poor weather and local flooding issues, only 16 of 18 upper Murray sites from Chowilla to Mildura were sampled. Otherwise, all sites were sampled for macroinvertebrates using South Australian AusRivAS sampling protocols, water samples collected and accessible sites inspected.

1.2 *The environments constituted by the River Murray system, with particular reference to high-value floodplains and wetlands of national and international importance, are to be protected and restored*

- **Chowilla Integrated Natural Resource Management Project**

The Chowilla Integrated Natural Resource Management Project is a multi-disciplinary project that aims to enhance and restore the environmental values of the Chowilla Significant Ecological Asset (also a Ramsar site) by delivering environmental and salinity benefits to the Chowilla floodplain and the River Murray. The project takes an integrated natural resource management approach that includes adaptive management, community engagement, management of surface water flows and the construction of a salt interception scheme. Intensive investigations have been commenced into the physical impacts of salinity and flow management affecting the wetland values. Work is well advanced for the commencement of the first stage of on-ground works to allow better flow control through the Chowilla system.

- **Community Wetland Management**

The SA Murray-Darling Basin Natural Resources Management Board (previously the River Murray Catchment Water Management Board) has continued to contribute funding to wetland management projects run by community groups. Following the completion of baseline surveys in over 60 River Murray wetlands the focus has moved to preparing best practice wetland management plans for a subset of these wetlands. Community grant funding from the Natural Resources Management levy and NAP has been made available to community groups to commence implementation of on-ground works.

- **Integrated Floodplain Management Plans**

Integrated Floodplain Management Plans have been initiated for the priority floodplains at Pike and Murtho. These plans will be advanced through implementation arrangements for floodplain management.

- **Ramsar Ecological Character Description**

The Ramsar Ecological Character Description is a report documenting the ecological character of the Coorong and Lower Lakes Ramsar site. This document provides details of the significant ecological communities, threats to them and provides limits to acceptable change for significant species. This document will provide managers and planners essential information for assessing potential impacts of developments and management initiatives.

- **Ramsar Habitat Mapping and Planning Program**

Detailed mapping provides information to Councils regarding conservation values contained within the Coorong and Lower Lakes Ramsar site. The results of this project will inform decision makers about the manipulation of water levels in the Coorong and Lower Lakes, support improved recreation planning and management and aid future zoning decisions.

- **Riverland Ramsar Site Management Plan**

The Department for Environment and Heritage is drafting a management plan for the Riverland Ramsar site in cooperation with landholders and the community. Through community concern a proposal to realign the Ramsar site boundary to reflect the ecological boundary of the wetland using the 1956 flood level has been developed through an extensive Federal Government and community consultation process. The boundary realignment process has delayed the release of the draft management plan.

- **River Murray Wetland and Floodplain Prioritisation Frameworks**

The River Murray Wetland and Floodplain Prioritisation Frameworks are under development and will determine the priority wetlands and floodplains for future actions (such as water allocation, environmental watering trials, and on-ground remediation works) and investment along the River Murray in South Australia.

- **Wetland Inventory for Fleurieu Peninsula**

A Wetland Inventory for the Fleurieu Peninsula was completed in 2005.

- **Wetland Management Plans**

The Department of Water, Land and Biodiversity Conservation has provided support for the development of technically robust wetland management plans in partnership with the SA Murray-Darling Basin Natural Resources Management Board and wetland management groups. These wetland management plans must meet specific policy criteria in the Water Allocation Plan for the River Murray Prescribed Watercourse (2002). A total of twelve wetland management plans have been finalised. A further twelve are under development, assessment and technical review.

- **Wetlands Strategy for South Australia**

A Senior Wetlands Officer has been employed to implement the Wetlands Strategy to improve the understanding and conservation of wetlands in South Australia, including in the Murray-Darling Basin.

1.3 ***The extinction of native species of animal and vegetation associated with the River Murray system is to be prevented***

- **Assessments of Native Vegetation Clearance and Heritage Agreement**

Applications for native vegetation clearance and Heritage Agreements are assessed and enforced on an on-going basis, to ensure that habitat in general is protected in the Murray-Darling Basin.

- **Carp Ecology and integrated control strategy**

As part of the Pest Animal Control CRC's 'Daughterless Carp' Program SARDI has recently completed:

- A comprehensive review of Australian carp ecology information, entitled 'The State of the Art: a synopsis of information of common carp in Australia'
- Winter sampling of 300+ adult carp in the Murray
- A report detailing the results from a 2-month research visit to the University of Minnesota, USA.

SARDI Aquatic Sciences is taking a lead role in developing innovative physical carp control strategies including the development and field evaluation of wetland carp separation cages, harvesting over-wintering aggregations of carp in the main river channel and exploiting the sensory abilities of carp to attract them into traps. SARDI will continue investigations of carp recruitment 'hot spots' and patterns of carp movement and migration.

- **Chowilla aquatic habitats and fish communities project**

This is a collaborative project between SARDI and DWLBC funded through the Living Murray Implementation Program. Key findings to date include:

- Chowilla supports a diverse fish community including threatened species such as Murray cod, freshwater catfish and silver perch. There is also evidence of recruitment of most species.
- The most diverse fish assemblages and those that show the greatest size range of species occur in Chowilla Creek and creeks that join Chowilla directly from the Murray. These creeks have diverse hydraulic environments and abundant instream habitat.
- In comparison to reference sites, significantly higher number abundances of small and large bodied fish species were collected downstream of major weirs in the Chowilla system during spring/summer.

- **Golden Dodder and Branched Broomrape Eradication Programs**

Eradication of golden dodder and branched broomrape from along the River Murray has contributed to protection of environmental diversity and the economic viability of local communities. In 2005-06, over 300 hectares were treated with

methyl bromide, pine oil and Basamid fumigates as part of the Branched Broomrape Eradication Program.

- **Implementation of the Black-eared Miner Recovery Plan**

This long-term project continues to implement key actions to protect the Black-eared Miner population in the core of its range in the Bookmark mallee north of the river. Ongoing monitoring of the core colonies of miners continued during 2005-06 and is underpinning the recovery efforts. The Department for Environment and Heritage manages this project with funding from the SA Murray Darling NRM Board.

- **Impacts of Salinity on the Aquatic Invertebrate and Aquatic and Terrestrial Vertebrate fauna of the River Murray Floodplain in South Australia**

A biological survey is assessing faunal communities and their relationship to salinity in the River Murray Valley from the New South Wales border to Murray Bridge. This survey follows prior groundwater assessments and a vegetation sampling and mapping program in the region, which examined a range of sites from 'natural' to highly salinised. A subset of these sites is being sampled for vertebrates and terrestrial invertebrates, along with sampling of aquatic invertebrates in associated River stretches.

- **Implementation of Threatened Flora Recovery Plan (9 species)**

This plan addresses threats to populations of nine nationally threatened plants that primarily occur in the southwest of the Murray-Darling Basin and around the Lower Lakes area. Surveys have located and assessed all known populations and identified key threats, which were managed during 2005-06 using a range of onground actions, including fencing, weed spraying, rabbit control, signage and increased community awareness. The Department for Environment and Heritage manages this project with funding from the SA Murray Darling NRM Board.

- **Millennium Seed Bank Project**

The Millennium Seed Bank Project was commenced in 2003 and provides significant resources and facilities to enhance the capacity of the Seed Conservation Centre and its collection, storage and research program. Under this program approximately 7600 species have been collected, placed in long-term storage and a research program has commenced for key species. The project has also resulted in increased capacity building through the training of staff and involvement of volunteer and community groups.

- **Native fish population monitoring in the SA MDB**

In 2005-06, PIRSA funded an independent fishery sampling program to collect information (basic biology and performance indicators) for stock assessment of key native fish species (Murray cod and callop). Monthly field sampling over sixteen months with assistance of ex-commercial fishers has established a dataset for callop in regard to spatial and temporal patterns in size/age structure and information on aspects of reproductive biology.

- **National Park Reserve Pest Plant and Animal Control**

Pest plant and animal control has been undertaken in National Park Reserves along the River Murray on an ongoing basis during 2005-06. Adjacent landowners were engaged in order to maximise the benefits to the community and the effectiveness of control within the Reserves.

- **Perennial Vegetation Protection and Revegetation Projects**

Support, both through small grants and technical advice, continues for community groups to undertake investigations that identify high priority sites for biodiversity conservation and to provide incentives to landholders to protect and re-establish perennial vegetation.

- **Pre-European Vegetation Mapping**

Pre-European vegetation mapping of the agricultural region at a scale of 1:50 000 was completed in 2005-06 for the Murraylands region.

- **Recovery of Mallee Emu-wren, Western Whipbird, Red-lored Whistler and Straited Grasswren**

A Draft Recovery Plan for these species was prepared in 2005-06 and implementation is underway. Detailed species profiles, fact sheets and a research plan have also been developed. The Department for Environment and Heritage manages this project with funding from the SA Murray-Darling Basin Natural Resources Management Board.

- **Recovery of Threatened River Corridor Fauna**

Recovery plans have been prepared for four priority species (Regent Parrot, Bush Stone-curlew, Southern Bell frog and Carpet Python). Implementation of the plans is currently underway and is managed by the Department for Environment and Heritage with funding from the SA Murray-Darling Basin Natural Resources Management Board.

An inaugural Recovery Team meeting also took place in 2005-06.

- **South Australian Freshwater Fish Action Plan – Phase 2**

The completion of an Action Plan for Freshwater Fish in South Australia has recently been given a boost through the successful funding application to the Threatened Species Network of WWF. This project forms the second phase of a three-phase project. Phase 2 draws on previous work by collating and interpreting species information (distribution and literature) into species based action statements, as well as an over arching structure (e.g. background to fish and aquatic habitats, broad threatening processes, regional and species priorities) to produce the draft 'Action Plan' document for public comment by mid 2006.

- **Stockyard Plain Basin Revegetation**

Rehabilitation, revegetation and management of the land surrounding the Stockyard Plain Saline Disposal Basin with Indigenous plants of local provenance is continuing.

- **Threatened Plant Action Group**

The Threatened Plant Action group was actively involved in managing 23 nationally threatened plant species *in situ* during 2005-06. This contributed to planning, capacity building, education and awareness raising through training workshops, field demonstrations, presentations, media, newsletters and developing/maintaining partnerships and networks.

1.4 *Barriers to the migration of native species of animal within the River Murray system are to be avoided or overcome*

- **Murray Barrage and River Murray Fish Passage Assessment**

As part of the Murray-Darling Basin Commission Hume Dam to the Sea fishway program a range of types of fishways are being installed for trials at the barrages at Goolwa and Tauwichee, prior to wider application. SARDI is collecting baseline data on the potential migratory fish species, comparing the relative efficiency of the fishway options, conducting specific fishway experiments to optimise final fishway design, placement and operation, and gauging the success of the fish passage at the Murray Mouth barrages. Simultaneously, a tri-state project between SARDI, the Arthur Rylah Institute, Victoria and the NSW fisheries is continuing to provide baseline monitoring for the River Murray fishway program as well as assessing the effectiveness of the recently completed fishways.

2.1 *Ecologically significant elements of the natural flow regime of the River Murray system are to be reinstated and maintained*

- **Control of Lake Victoria**

South Australia is responsible for the operation and maintenance of this off-stream water storage in New South Wales, which forms a key part of the operation of the Murray-Darling system. A Plan of Management has been developed to protect the significant aboriginal cultural heritage on the lakebed. This plan is currently undergoing a five-year review.

- **Eastern Mount Lofty Ranges Prescription Investigations**

On 8 September 2005 the water resources of the Eastern Mount Lofty Ranges were prescribed. To support the development of a Water Allocation Plan for the water resources, a series of hydrological and ecological investigations were undertaken. The Draft Concept Statement for the Water Allocation Plan has also been released for consultation.

- **Environmental Land Management Allocation in the Lower Murray Reclaimed Irrigation Districts**

A review of the Cap on water diversions in the Lower Murray in 2001 led to a 22.2 gigalitres environmental land management allocation (ELMA) being made available for exclusive use within the Lower Murray Reclaimed Areas Irrigation Management zone to assist in minimising the effects of rising saline underground water on former floodplains. In October 2004, the Minister for the River Murray assumed responsibility for ELMA from the Minister for Environment and Conservation. The ELMA will remain in public ownership to ensure its continued

availability across the zone. After considering various issues raised by irrigators, DWLBC provided the Minister for the River Murray with advice on a number of administrative models for managing the ELMA during the 2005-06 financial year. DWLBC will progress implementation of one of the models via its' ELMA Committee, which includes three irrigators from the Lower Murray region. It is anticipated that implementation will be finalised by 1 July 2007.

- **First Step Decision for Water Recovery**

On 9 May 2006, the Australian Government announced supplementary funding of a further \$500 million to accelerate the achievement of the Living Murray objectives, including additional funding for water recovery.

Governments of the Murray-Darling Basin have committed \$500 million to fund the *First Step* of recovering an additional average annual flow in the River Murray of 500 gegalitres. The *First Step* water recovery is aimed at achieving specific but localised ecological benefits at six icon sites along the River Murray. The longer-term goal of 1500 gegalitres through South Australia's Strategic Plan will, according to the best available scientific advice, provide an even chance of attaining a system-wide ecological benefit, particularly for the Lower Murray (i.e. below the Darling Junction).

South Australia has an investment target of \$65 million as part of the \$500 million First Step decision for water recovery. To date, South Australia has invested in the Gauburn-Murray Package from Victoria (\$12.9 million) and is currently assessing a proposal from New South Wales. In addition, South Australia is investing in its own water recovery package.

- **Interstate Water Trade Pilot Project**

The Interstate Water Trade Working Group conducted five formal meetings during 2005-06 that led to the endorsement of a revised Schedule E (Transferring Water Entitlements and Allocations) to the Murray-Darling Basin Agreement. The endorsement by the Ministerial Council in May 2006 established the framework for expanded water trade across the Southern Connected Murray-Darling system and terminated the Pilot Project. The Working Group continues to finalise the operational protocols under Schedule E and investigate alternative trading systems. In addition to the productivity benefits, improved interstate trading arrangements will enable water to be more easily acquired for environmental purposes.

- **Mawson Lakes Dual Reticulation Development**

The Mawson Lakes project aims to reduce the use of traditional surface water supplies, including the River Murray. Reused water from Bolivar Wastewater Treatment Plant is combined with stormwater and supplied through a second reticulation system to Mawson Lakes, providing water for non-potable uses, such as landscaping.

- **National Water Initiative**

The State Government is implementing its commitments under the National Water Initiative (NWI) consistent with the South Australian NWI Implementation Plan, which has been accredited by the National Water Commission. South Australia has secured funding from the Australian Government Water Fund to enhance the state's water supplies and water management, and support South Australia's commitments under the NWI.

- **Permanent Water Conservation Measures**

In order to reduce the urban and domestic consumption of water, including water from the River Murray, water restrictions were introduced to parts of the State on 1 July 2003. These restrictions were replaced by permanent water conservation measures on 26 October 2003. In conjunction with extensive community education, the conservation measures have resulted in a reduction in water use of approximately 10%, which compares favourably with worldwide results for restriction programs.

- **Reducing the Environmental Impact of Using Traditional Water Supplies (for example the River Murray)**

In 2005-06 a number of water initiatives were announced which will help to reduce the environmental impacts associated with traditional water use. In October 2005, the Premier announced joint funding with the Australian Government, totalling approximately \$62 million, for projects that will:

- address sustainable management of the Mount Lofty Ranges water resources (\$51.3 million);
- increase stormwater use in metropolitan Adelaide (\$6.5 million); and
- increase recycled water use in the Northern Adelaide Plains (\$4 million).

The Department of Water, Land and Biodiversity Conservation also assisted the Department of Trade and Economic Development to explore the feasibility of replacing up to 30 megalitres per day of River Murray water supplies with desalinated sea-water to the Upper Spencer Gulf and Eyre Peninsula communities.

- **River Murray Drought Response Strategy**

During 2005-06 the River Murray Drought Water Allocation Policy was implemented for the third year. Initial allocations started at 70% allocation, which improved to 100% allocation by October 2005. The Department of Water, Land and Biodiversity Conservation provided advice to the SA Murray-Darling Basin Natural Resources Management Board's River Murray Drought Liaison Committee (now replaced by the River Murray Advisory Committee) throughout 2005-06.

- **River Murray Environmental Flows Fund**

The River Murray Environmental Flows Fund is a joint South Australian and Victorian fund to secure increased environmental flows for the River Murray. The fund forms part of The Snowy Package, funding the 'Water for Wetlands' project, 'sewer mining' in Port Augusta and a Lake Mokoan water savings project.

- **Save the River Murray Levy**

The Save the River Murray Levy was introduced in the 2003-04 Budget. The Levy is payable by all SA Water customers and raises approximately \$18 million per annum. Funds raised are used towards the River Murray Improvement Program and The Living Murray Initiative.

- **Water Proofing Adelaide**

Water Proofing Adelaide – A Thirst for Change 2005 – 2025, was released on 21 July 2005. It includes 63 strategies for the management, conservation and development of Adelaide's water resources to 2025, including the Mount Lofty Ranges and River Murray water resources. Implementation of the strategies is expected to provide 37 gigalitres per annum from water conservation initiatives, and 33 gigalitres per annum from stormwater, roof runoff and recycled water. In addition, the report identifies the need for environmental flows downstream of Adelaide's major water supply reservoirs. Implementation of these strategies will ensure that, for all but very severe droughts, Adelaide will have sufficient water resources until at least 2025.

- **Wetlands for Water Savings**

An assessment of potential water savings to be generated by implementing a wetting and drying regime in currently permanently full wetlands was made. In 2005-06, infrastructure requirements were identified and costed, including irrigator pump relocation.

3.1 *Water quality within the River Murray system should be improved to a level that sustains the ecological processes, environmental values and productive capacity of the system*

- **Codes of Practice**

The EPA in partnership with relevant industry groups has been finalising a number of industry and activity based codes of practice during 2005/06, including:

- Vessel and Facility Management: Marine and Inland Waters
- Materials handling on Wharves, and
- Industrial, Retail and Commercial Stormwater Management.

Negotiations on both content and implementation issues for the Code of Practice for Vessel and Facility Management are of particular relevance for the River Murray. These have included:

- finalising recommendations for greywater discharge
- the development of new grey and black water treatment technologies
- potential regulation strategies and partnerships with Transport SA
- the design and positioning of pump-out stations, and
- the development and assessment of various related planning policies and development assessments.

The latter has included addressing issues such as the in-water use of copper-chrome-arsenate treated timbers in freshwaters, the development of a marina

planning policy for the River Murray, and the accessibility of waste water disposal mechanisms for permanent and temporary moorings along the River.

- **Loveday Basin Adaptive Management Demonstration Site Project**

Improved irrigation practices have seen a significant reduction in the amount of irrigation drainage water generated in the Loveday and Cobdogla Irrigation Districts. This has allowed a review into the number of irrigation drainage basins required in the region. The Loveday Basin was selected to be an adaptive management demonstration site. The outcomes of the project are anticipated to form a template for other wetland managers who manage irrigation drainage water disposal basins.

- **River Murray and Lower Lakes catchment risk assessment for water quality**

The EPA in partnership with the SA Murray-Darling Basin Natural Resources Management Board and SA Water completed the first stage of the *River Murray and Lower Lakes Catchment Risk Assessment for Water Quality* project in 2005-06. The project was designed to engage and provide information to a wide range of stakeholders on the sources of risk to water quality within the River Murray and Lower Lakes catchment in South Australia.

Risks to water quality were assessed for the length of the River Murray, Lower Lakes and Coorong in South Australia within the River Murray Water Protection Area. Almost 1000 different hazards to water quality and environmental values were identified. The final draft report has been produced and contains tables of potential management actions to mitigate identified water quality risks.

The information gathered will be used to prioritise risks and develop and implement water quality management strategies by responsible agencies and the community to address the risks identified. The implementation of the project will begin in the 2006-07 financial year.

3.2 *The impact of salinity on the ecological processes and productive capacity of the River Murray system is to be minimised*

- **Groundwater Salinity Risk in the Murray Basin Assessment**

Assessment and modelling of future salt trends to the River Murray from native vegetation clearance has continued.

- **Irrigator Accountability for Salinity Impacts**

It has been recognised that future impacts from existing irrigation are a major issue, and not all impacts can be dealt with through an increase in salt interception capacity. The South Australian River Murray Salinity Strategy and the Water Allocation Plan for the River Murray Prescribed Watercourse are very explicit about irrigator accountability for salinity impacts, and this is currently being developed further.

Policies for irrigator accountability will build on earlier work with irrigation communities to develop Land and Water Management Plans and an Irrigation Code of Practice. Investigations focus on how the benefits of improved irrigation practices and therefore reduced salinity impact can be made more apparent to irrigation communities, in terms of cost savings, bankable salinity offsets, or increased development potential in a district.

- **Land and Water Management Plan Case Studies**

2005-06 has seen the Land and Water Management Plan (LWMP) Case Studies consolidated with 3 of the 4 irrigator committees moving from the establishment phase to revision of LWMP's to meet guidelines. Additionally 3 of the 4 case study districts have responded enthusiastically to the technical support offered and have carried out significant on-ground work. Additionally, all 4 LWMP case study committees have encouraged irrigators in their district to participate in the training courses offered by the SAMDC NRM Board. Two of the committees have endorsed these training courses by including goals in their draft LWMP's that aspire to having 100% of irrigators in the district attend the courses.

- **River Murray Salinity PAR**

The Minister for Urban Development and Planning initiated a Ministerial Plan Amendment Report (PAR) in January 2004, which will affect the Development Plans for Councils along the River Murray. The PAR seeks to align land use policies with the levels of risk from salinity along the River Murray by restricting new irrigation to areas of low salinity impact. Prior to the development of the draft PAR, irrigation groups and local councils were consulted to ensure that their views were considered in developing the draft PAR.

A final review of the draft policy position, including the detailed mapping and associated amendment instructions, is currently underway. Once completed the draft policy will be forwarded to the Minister for consideration and approval to place on public consultation. It is anticipated that the draft PAR will be released for formal consultation in September or October 2006.

- **Salinity Response Team**

In 2005-06 the salinity response team has continued to work in conjunction with four community groups and the relevant Local Action Planning committees to develop technically sound Land and Water Management Plans and targets for salinity and water quality outcomes. Two plans have been released at a draft stage and it is anticipated that two more will be released by the end of the year. In addition, the Salinity Response team has been coordinating the development of a Code of Practice for irrigators, which can be implemented on an individual level or at a district scale. This work has occurred in conjunction with PIRSA, Rural Solutions South Australia and the Local Action Planning Groups. The Code of Practice will be released for community consultation in the near future. The Salinity Response Team provides an important link on a day-to-day basis between DWLBC and the community on a number of fronts including Salt Interception.

- **South Australia’s Salinity Register**

In 2005-06 South Australia updated the Salinity Register to include impacts of irrigation water trade for 2004-05. The Salinity Register is currently in credit. It is expected that after the 2005-06 figures are included, the Salinity Register will remain in credit. Other measures such as Salt Interception Schemes will assist in maintaining this position. There is recognition that the delayed salinity impacts of irrigation water use will erode the available credits over time. South Australia continues to monitor the situation to ensure timely action is taken to maintain the Salinity Register in credit. This includes updating the Salinity Register with the best possible information as it becomes available. Amongst other things, a suite of accredited groundwater models for SA is currently being developed to achieve this.

- **Salinity Zoning Policy**

The salinity zoning policy commenced on 1 July 2005 which affects water allocation transfers, conversions from water (holding) to water (taking) allocations and variations to licences to change the land on which water can be used. The policy directs irrigation development to locations where it will have a low salinity impact, or to salt interception scheme zones, and away from areas where it will have a more significant impact on the salinity of the floodplains and River Murray. Further irrigation development can only occur in high salinity impact areas if the salinity impact is offset. An evaluation framework has been developed to determine if the policy objectives are appropriate and effective, and if the policy is being managed efficiently.

- **Salinity Impact Management System**

Application and development of GIS based salinity impact assessment tools for the River Murray has continued.

- **Salinity Impacts of Living Murray actions**

Rehabilitation and on-going protection of the River Murray and its floodplain will require a complementary set of integrated management tools including improved river operation and manipulation of flows. However the implementation of flow management actions may result in salinity impacts. A policy framework and tools for the management and reporting of salinity impacts from environmental flow initiatives is currently being initiated, at a state level and at the Murray-Darling Basin Commission level.

- **Upper South East Dryland Salinity and Flood Management Program**

The Upper South East Dryland Salinity and Flood Management Program was developed to combat increasing salinisation in the Upper South East, by constructing drains that remove saline groundwater and surface water and lower the water table. The Coorong sub-program monitors and manages discharges of saline drainage water from this scheme into the Coorong, in order to optimise the ecological character of the Coorong.

The project also includes a Biodiversity Offset Scheme. The function of the Scheme is to conserve biodiversity values through management covenants and incentives and to offer landholders the opportunity to meet their required

contribution to the USE Program in kind rather than in cash. Approximately 260 expressions of interest have been received to date from landholders.

3.4 *The impact of potential pollutants, such as sediment and pesticides, on the environments constituted by the River Murray system is to be minimised*

- **Reuse of stormwater and drainage water**

During 2005-06 the SA Murray-Darling Basin Natural Resources Management Board invested in 3 wastewater reuse projects.

- **Stormwater management**

During 2005-06 the SA Murray-Darling Basin Natural Resources Management Board invested in 10 stormwater improvement projects.

4.1 *A responsive and adaptable approach to the management of the River Murray system is to be implemented taking into account ecological outcomes, community interests and new information that may become available from time to time*

- **Active Adaptive Management Guidelines**

The Active Adaptive Management Guidelines and 13 demonstration projects covering the range of on-ground works are being undertaken in the SA Murray-Darling Basin region including revegetation, biodiversity management, wetland management, erosion control, grazing management, weed and pest animal control and protection of Indigenous culture and resources.

- **Guidelines for Sustainable Irrigation Development**

A 'go live' (pilot) web site that provides guidelines to facilitate sustainable irrigated agriculture development in South Australia has been developed based on feedback from developers, local government and with the assistance of a multi-agency steering committee. The pilot site is a 'portal' that guides prospective developers through the necessary approval processes (including requirements under the *River Murray Act 2003*) and provides linkages with key agencies and information sources. The site is also a reference source for agency staff to support a whole of government approach aimed at improving transparency and efficiency. Testing of the site to ensure accuracy of contents and ease of use is currently underway.

- **Interagency River Murray Working Group**

An interagency working group has been formed to provide a forum for discussion and resolution of environmental and planning related issues in order to facilitate greater co-ordination of the functions and responsibilities of relevant government agencies. The initial focus has been on the development of a Strategy for Marina Developments on the River Murray.

- **Lower River Murray Draw-down Monitoring Project**

As part of the National Action Plan for Salinity and Water Quality Monitoring, monitoring was undertaken to assess the draw-down in water level on the ecosystem components of the Murray River below Lock 1, specifically the Lower Lakes and Coorong. Monitoring included tracking the impact of changing water levels on trees, fish, birds, water quality or groundwater in the River and lake systems. The results will form the basis of a Drought Monitoring Report.

- **Monitoring Ecological Outcomes from Barrage Releases**

Monitoring has been carried out on the ecological impacts on the Murray Mouth and Coorong from a managed release of freshwater through the barrages. The sampling included water quality, phytoplankton, zooplankton, macro-invertebrates, fish and food resources for birds. A key component was focusing on the impact of native fish ecology, and spatial and temporal variations of the catch of key commercial species.

- **On-ground Stream monitoring**

Stream flow and salinity loggers, water level probes and rainfall station gauges were installed in the Eastern Mount Lofty Ranges in 2003-04 and continue to be monitored. Further stations were installed in 2005-06 that added to the existing network.

- **Ongoing Monitoring of the Lower Lakes and Coorong**

Extensive monitoring including water levels, water quality, salinity, and ecology has been enacted on an on-going basis. Selected sites were upgraded with telemetered capability, with data managed and delivered through conventional and web-based systems. A program to complete the update of the monitoring stations in the Lower Lakes and extend the monitoring into the Coorong is currently underway, with funding from the Murray-Darling Basin Commission.

- **River Murray Integrated Environmental Monitoring Program**

A biophysical monitoring program has been developed to determine the ecological benefits to the River Murray system of flow manipulation, salinity and other management actions.

- **South Australian Tourism Commission River Murray Policy**

The SATC River Murray Policy is intended to clarify the SATC's standing on issues pertaining to the management and use of the River Murray. The SATC Policy addresses three critical issues pertinent to tourism for the River Murray and its broader floodplain ecosystem, namely:

- consumer perception;
- environmental management; and
- proposed development.

The SATC Policy supports the direction of the key government agencies (Department of Water, Land and Biodiversity Conservation and the Department for Environment and Heritage) in their management of the River system. As an advocate for the tourism industry with a significant stake in the River Murray, the SATC seeks to be an integral part of policy and planning activity that affects the

river to ensure that tourism interests are considered in the respective agencies decision making and policy directions.

- **State Groundwater Monitoring**

Groundwater levels and salinity levels have been monitored to provide an ongoing assessment of the state and condition of State groundwater resources, especially with regard to land clearing, extraction and irrigation and salt interception schemes. This includes the River Murray and Eastern Mount Lofty Ranges regions.

4.2 *the community's knowledge and understanding of the River Murray system is to be gathered, considered and disseminated in order to promote the health and proper management of the system*

- **Drought Liaison Committee**

The Drought Liaison Committee continued to provide significant input into decision-making on water restrictions and the Drought Response Strategy during 2005-06.

- **National Parks and Wildlife Consultative Committees**

Consultative Committees for the Murraylands and Coorong and Lower Lakes continue to provide avenues for community input into the management of parks and reserves. In January 2006 the Murraylands Consultative Committee merged with the Mallee Consultative Committee.

- **River Parks visitor Facilities Development**

Indigenous community representatives have provided advice to the Department for Environment and Heritage to protect and recognise sites of cultural heritage significance in the development of visitor facilities in the Murray River National Park.

4.3 *The interests of the community are to be taken into account by recognising Indigenous and other cultural, and historical, relationships with the River Murray and its surrounding areas, and by ensuring appropriate participation in processes associated with the management of the River Murray system*

- **Community Involvement and Awareness Strategy**

The SA Murray-Darling Basin Natural Resources Management Board has continued to implement a comprehensive three-year communications strategy, which aims to provide a coordinated and planned approach to driving community involvement and awareness. The strategy was based on research and consultation that identified target audiences, attitudes, understanding and levels of involvement by the community in catchment management.

- **Friends of Riverland Parks**

Supported by the Department for Environment and Heritage, this community group has undertaken a range of on-ground monitoring and rehabilitation programs,

including surveys of Regent Parrots, Bush-stone Curlews, pythons, possums and rabbits, and revegetating areas of Murray River National Park.

- **Indigenous Engagement**

The First Peoples of the River Murray are in the early stages of negotiating Indigenous Land Use Agreements with the Department for Environment and Heritage over Crown Land and National Parks and Wildlife Act Reserves.

On the 10 October 2005, the Minister for Environment and Conservation entered into a co-management agreement with the Mannum Aboriginal Community Association Inc for the co-management of the Ngaut Ngaut Conservation Park.

Development of a comprehensive Indigenous Action Plan has commenced in line with CoAG directions to all Ministerial Councils. Site specific engagement process have been implemented for all major projects and where appropriate the local Indigenous community has been actively involved in the project, such as the employment of two Indigenous Rangers as part of the Murray Mouth Sand Pumping Project.

- **Regional Biodiversity Support**

This project supports Landcare groups and landowners to develop, implement and evaluate integrated programs to achieve regional biodiversity and natural resource management priorities. Landowners (including private landowners, State and local government and statutory authorities) will be supported to establish and effectively manage their land to contribute to a comprehensive, adequate and representative system of protected areas. Biodiversity conservation, vegetation protection programs (i.e. Heritage Agreements) and best practice management strategies will be promoted to landowners and recipients of Bushcare funding.

- **River Murray Licensing Project**

The River Murray Licensing Project, run by the Department for Environment and Heritage aims to identify and license all structures in the River Murray Protected Area previously built without formal licensing has been commenced in 2005-06 and is predicted to be completed in 18 months time.

- **South Australian Biodiversity Advisory Group**

An advisory group was established to coordinate biodiversity conservation actions across the Murray-Darling Basin in South Australia, resulting in the development of the investment strategy for the SA Murray-Darling Basin Natural Resources Management Board. The group comprised members of Local Action Planning groups and biodiversity project staff from the Environment and Conservation portfolio and the SA Murray-Darling Basin Natural Resources Management Board.

- **South Australian Murray-Darling Basin Resource Information Centre (SAMRIC)**

SAMRIC was established in November 2005 following the State Government announcement in the June 2005-2006 Regional Budget Statement 6, that it would

provide upfront assistance and ongoing operational support of \$1.257 million over four years.

SAMRIC primarily deals with spatial data and information, with a focus on natural resource management issues. It provides a focal point for the cooperative collection, integration and accession of data and information, which would otherwise remain within specific agencies and in a range of not necessarily compatible and consistent formats. SAMRIC will be used both by the public and private sectors to identify areas within the SA Murray-Darling Basin region suitable for sustainable development whilst addressing environmental issues.

- **Targeting the Long-term Protection and Active Management of Biodiversity “Hot-Spots”**

The aim of this project is to target the long-term protection of significant areas of remnant vegetation outside the protected area network in the South Australian MDB region, and to increase the capacity and motivation of landowners to undertake required management and maintenance activities.

4.4 The importance of a healthy River to the economic, social and cultural prosperity of communities along the length of the River, and the community more generally, is to be recognised

- **Community Information Material Development**

Materials have been published to inform the community and all levels of government about the *River Murray Act 2003*, including a First Users Guide, website and Fact Sheets. These publications are available on the DWLBC website: www.dwlbc.sa.gov.au.

- **Greening Parliamentary Public Works Committee Submissions**

All Parliamentary Public Works Committee submissions are now required to incorporate consideration of Ecologically Sustainable Development (ESD) principles. Criteria have been developed for agencies to address ESD in major projects, and in assessing projects for incorporation of appropriate sustainable building technology.

- **Maritime Heritage Program**

This program protects and enhances community awareness of maritime heritage, including heritage along the River Murray. In 2005-06 information on maritime heritage sites was refined, updating the on-line GIS intergovernmental ‘Coast Maps’ and public access ‘Atlas of South Australia’, and distribution of the heritage booklet ‘River Boat Trail’ continued.

- **Sustainable Recreation Support**

Implementation of the ‘Sustainable Recreation Strategy for the SA River Murray and Lower Lakes’ continues through the employment of a Sustainable Recreation Coordinator. The project seeks to facilitate changes in attitude and behaviour, by encouraging respect for, and minimising recreational impacts on the riverine environment. Current initiatives include the restoration of existing degraded sites

and the prevention of further damage and planning for new recreation areas or activities.

- **Water Conservation Community Education**

SA Water embarked on a major program of community education to inform the public about restrictions and permanent water conservation measures. This included the “Slow the Flow” TV, radio, press and bus back advertising, a “Slow the Flow” brochure delivered to all homes in South Australia, a range of fact sheets, SA Water website updates, presentations to community and interest groups and a two day gardening industry and community event at the Botanic Gardens. To support this campaign, SA Water also employed dedicated water conservation officers, established a 1800 hotline on water conservation, initiated a rebate scheme for water efficient household items, and formed partnerships with the Botanic Gardens of Adelaide and the Nursery & Garden Industry Association (South Australia) to educate the community about water wise gardening.