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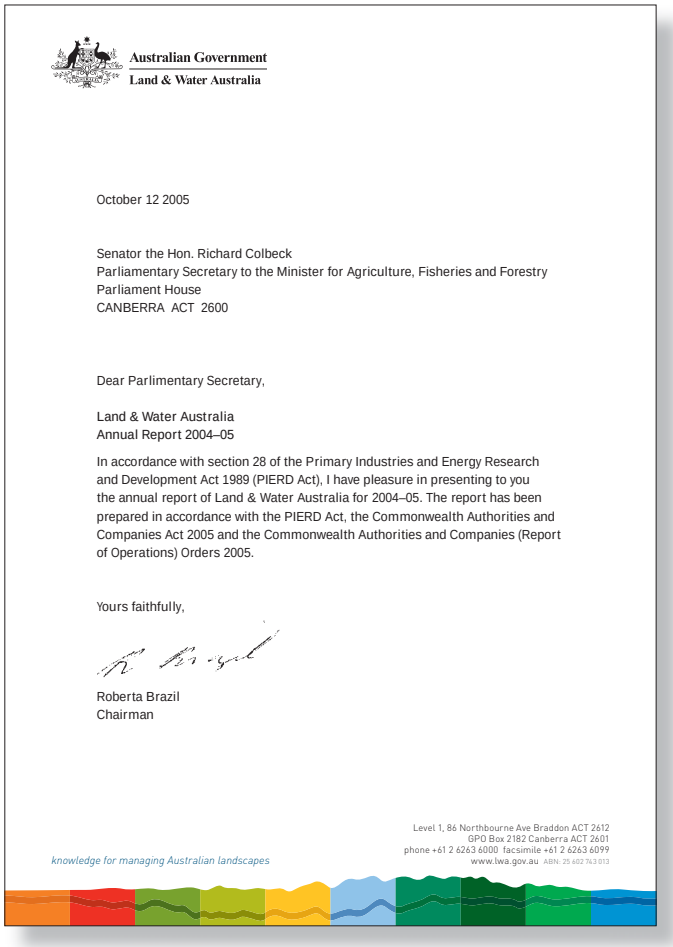
Land & Water Australia

LAND & WATER AUSTRALIA

knowledge for managing Australian landscapes

annual report 2004-05



Australian Government
Land & Water Australia

October 12 2005

Senator the Hon. Richard Colbeck
Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry
Parliament House
CANBERRA ACT 2600

Dear Parliamentary Secretary,

Land & Water Australia
Annual Report 2004–05

In accordance with section 28 of the Primary Industries and Energy Research and Development Act 1989 (PIERD Act), I have pleasure in presenting to you the annual report of Land & Water Australia for 2004–05. The report has been prepared in accordance with the PIERD Act, the Commonwealth Authorities and Companies Act 2005 and the Commonwealth Authorities and Companies (Report of Operations) Orders 2005.

Yours faithfully,

Roberta Brazil
Chairman

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knowledge for managing Australian landscapes

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LAND & WATER AUSTRALIA

Australia's natural resources are extraordinary.

Our landscapes, soils, freshwater resources and our distinctive plants and animals are unique, invaluable and irreplaceable. They constitute the natural capital that underpins our material wealth and productivity, our lifestyles and livelihoods, and our hopes for our children and their descendants.

They support rural dryland and irrigation industries with a gross value of production around $40 billion that sustain rural communities, and are the engine room for a value-added agriculture and food sector that constitutes about 12% of the Australian economy and 22% of export revenue.

In one of the world's most variable climates, isolated on an ancient continent, Australian farmers, rural communities, primary industries, catchment managers, water authorities and governments at all levels are on a remarkable journey to develop and implement more sustainable and distinctively Australian ways of managing land, water and vegetation resources.

This journey gathered momentum from 1990 with the historic bipartisan commitment to a Decade of Landcare and a partnership between governments, farmers and conservation groups that remains without parallel internationally. That momentum has accelerated over the last decade through major national programs including the National Landcare Program, Natural Heritage Trust, National Action Plan for Salinity and Water Quality, and the National Water Initiative – representing a collective public investment in Commonwealth funds alone exceeding five billion dollars. Total investment by farmers, community groups, industry and other levels of government is much greater than this, underlining the importance of a sound knowledge base.

At the start of the Decade of Landcare, the then Land and Water Resources Research and Development Corporation was established to invest in R&D to build the knowledge base for more sustainable management of Australia's land, water and vegetation resources. Since that time, the Corporation (now trading as Land & Water Australia) has invested in more than 1600 research projects that have made a major contribution to Australian understanding about managing water resources, climate variability, irrigation, social and institutional issues, groundwater, grazing systems, salinity, river health, biodiversity, soil health, native vegetation, agroforestry, extension and catchment management. It has evolved into a sophisticated knowledge specialist in Australian natural resource management that is highly regarded as a source of highly applicable knowledge and as a valued and professional investment vehicle through which industries can fund R&D and collaborate with other commodities on issues of common interest.

In 2004-5, Land & Water Australia used its government appropriation of $12.5m through the Agriculture, Fisheries and Forestry portfolio to generate investment exceeding $28m through 12 R&D programs involving 45 co-investing partners including most of the major rural resource-using industries and all jurisdictions.

Land & Water Australia's fifteen year track record as a research investor and broker underlines the success of its charter to support innovation in an entrepreneurial way, governed by an independent, expert board, to broker research partnerships that deliver on national research priorities. We seek to involve industry at all stages of the innovation and adoption process.

This Annual Report summarises another very successful year in which the Corporation has catalysed an outstanding return on investment for the Australian Government, for our industry partners, for seekers of knowledge about managing natural resources, and in the long term for more sustainable management of Australia's irreplaceable natural resources.

CONTENTS

FROM THE CHAIR

The Land & Water Australia Board pictured at its mid-year meeting in Darwin, June 2005, from back left John Childs, David Pannell, Tim Fisher, Chairman Bobbie Brazil, Executive Director Andrew Campbell, Mike Logan, Government Director Charles Willcocks, Front, Peter Cullen and Warwick Watkins.

Land & Water Australia in 2004-05 has continued to build the knowledge base for sound decisions about the management of Australia's rich and unique natural resources.

Our core business of investing in and managing collaborative R&D programs has continued apace, with very good results. Revenue from partnership programs and our R&D investment have both increased significantly and new activities with our industry partners are performing strongly. In fact revenue from partner co-investment in our research programs now exceeds our government appropriation income, and two thirds of our research expenditure comprises partner funds. This is both a very heartening performance indicator, and a testament to the innovative features of Australia's model for funding rural research through the Rural R&D Corporations.

While Land & Water Australia is alone among RDCs in not receiving income through levies on production, we benefit from the flexibility, independence and licence to be entrepreneurial that is inherent in our enabling legislation and the governance arrangements it establishes. Our attractiveness as an investment vehicle for partners, and our track record in brokering

partnerships to deliver a very solid return on public and industry investment in what is a complex field of science, exemplify the value added through Australia's world-leading rural R&D model.

We have worked very closely with other R&D Corporations to improve collaboration and collective reporting on natural resource management issues. The latter challenge was given to us by Senator Judith Troeth, former Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry. On behalf of the Board I'd like to record our thanks to Judith for the wonderful support she gave to the Rural R&D Corporations in general and to Land & Water Australia in particular.

I'd also like to welcome Senator Richard Colbeck, the Parliamentary Secretary with responsibility for the R&D Corporations, with whom we look forward to working very much. Finally, I'd like to thank Minister Warren Truss for his sterling contribution to the agriculture portfolio and to natural resource management in Australia, and to welcome the Honourable Peter McGauran in his new role as Minister for Agriculture, Fisheries and Forestry.

The Board led the development of a new Strategic R&D Plan, which was approved by Senator Colbeck in June 2005. This new plan refines our strategic directions to better fit the Australian Government's National Priorities for Research and Development, the subsidiary priorities for rural R&D, and the dynamic external operating environment.

In parallel with the development of a new strategic framework, the Board has overseen new initiatives to overhaul substantially the organisation's internal Corporate systems in order to improve our long term capacity and performance, to better manage risk, and to better meet wider accountability requirements.

Land & Water Australia is placing greater emphasis than ever on ensuring that our research is both adoptable and adopted. We have instigated some innovative new initiatives to meet the knowledge needs of the regional delivery arrangements for the Natural Heritage Trust, the National Action Plan for Salinity and Water Quality, and the National Water Initiative.

Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry Senator the Hon. Richard Colbeck.

Photo: www.geoffcomfort.com

The Board appreciates that the staff of the Corporation have continued to perform at a high level during a year of considerable internal change. We value their dedication, commitment and talents very highly.

Sadly we farewell three directors, Mr Mike Logan, Professor Dave Pannell and Mr Warwick Watkins, all of whom have made an outstanding contribution to the Corporation.

Mike Logan's six years on the Board of Land & Water Australia enriched the Corporation with the insights of one of Australia's most innovative irrigators and visionary rural leaders. Mike played critical leadership roles in the Irrigation, Grain & Graze and Climate Variability programs, and internally as Chairman of the Finance Committee in overseeing substantial internal improvements.

Dave Pannell brought an extremely keen intellect and sharp analytical rigour to the Board over the last three years, and discharged his responsibilities as a director with great diligence. He chaired the Social and Institutional Research Program, overseeing the development of a new program plan that was approved by the Board in December 2004. Dave also contributed to the Joint Venture Agroforestry Program and the Board's Communication Committee.

Warwick Watkins has been Deputy Chairman of the Corporation and Chairman of the Audit Committee for six years, and a director for nine years. Warwick's deep understanding and networks across the full breadth of NRM issues and his experience at the highest levels of government have been of inestimable value to me and fellow Directors on the Board of Land & Water Australia. His ability to sum up an issue quickly and to find sensible paths forward will be sorely missed.

It has been an honour to chair a Board comprising people like Mike, Dave and Warwick, but equally I am looking forward very much to working with the new Board.

I am delighted to welcome to the Board Ms Dianne Bentley, Professor Ted Lefroy and Mr Jack Spiers, who commenced duties as directors on 1 July 2005. They join a high performing organisation with sound strategic settings in place.

As ever, the coming year promises to be full of challenge and opportunity. The world of natural resource management is extremely dynamic, and underpinned to a large degree by the knowledge base contributed to by farmers, other resource managers, local communities and scientists. Land & Water Australia has a critical role to play in harnessing and adding to this knowledge base for the benefits of landholders, governments, industries and communities.

It is a wonderful opportunity to contribute to a more sustainable Australia.

Roberta Brazil
Chairman

Then Minister for Agriculture, Fisheries and Forestry the Hon. Warren Truss MP with Land & Water Australia Chair Bobbie Brazil at the launch of Land & Water Australia's Senior Research Fellows, December 2004.

STRATEGIC REPORTING FRAMEWORK

This Annual Report is prepared by the Land & Water Australia Board of Directors to meet the requirements of Section 9 of the *Commonwealth Authorities and Companies Act 1997* in accordance with the Report of Operations Schedule of that Act for the 2004-05 financial year; and the requirements of Section 28 of the *Primary Industries and Energy Research and Development Act 1989.*

At the highest strategic level the report describes the performance of Land & Water Australia in achieving the Australian Government's National Research Priorities. We have a particularly important role in the first national research priority "An environmentally sustainable Australia". At the next level we report against the Australian Government's Rural Research Priorities. These were announced before the National Research Priorities, and where there are areas of overlap we report against the combined priorities (page 7-19).

Land & Water Australia is also required to report against the four objects of the *Primary Industries and Energy Research and Development Act 1989* (the PIERD Act).

The four PIERD Act objects are listed in the table on page 6, where we also outline the broad way in which Land & Water Australia responds to them. More details are provided in later sections.

Our most detailed level of reporting is against our 2001-06 Strategic R&D Plan, with particular attention paid to describing achievements of planned outputs listed in the Annual Operational Plan 2004-05. The performance of all Land & Water Australia's R&D programs, Corporate functions and the National Land & Water Resources Audit is presented in the Report of Operations. These contribute to achieving our outcome:

"National leadership in generating knowledge, informing debate and inspiring innovation and action in sustainable natural resource management".

Object (PIERD Act section 3)	Corresponding Land & Water Australia activity
(a) Increasing the economic, environmental or social benefits to members of primary industries and to the community in general by improving the production, processing, storage, transport or marketing of the products of primary industries.	The planned output for the first of the Corporation's five R&D arenas — 'Enhanced capacity for Australia's primary industries to manage natural resources sustainably' — encompasses this object. The Corporation works with primary industries (particularly through fellow R&D Corporations) towards increasingly sustainable use of natural resources through profitable farming systems. We evaluate the return on our investments annually in economic, environmental and social terms.
(b) Achieving the sustainable use and sustainable management of natural resources.	This object underpins the entire spectrum of the Corporation's business, as evidenced by the Corporation's mission ('to provide national leadership in generating knowledge, informing debate and inspiring innovation and action in sustainable natural resource management') and the planned outputs of the five R&D arenas.
(c) Making more effective use of the resources and skills of the community in general and the scientific community in particular.	The Corporation makes use of its extensive networks in the general and scientific communities to help in the design, development and implementation of its R&D Programs and projects. The Corporation's communication strategy (now superseded by its Knowledge and Adoption Strategy) has a specific objective to equip present and future land managers, policy makers, educators and others with the knowledge and tools to expand their capabilities in achieving sustainable natural resource management.
(d) Improving accountability for expenditure on R&D activities in relation to primary industries.	The Corporation's accountability activities are directed to meeting all statutory obligations and accountability requirements in a comprehensive, timely and transparent manner.

HIGHLIGHTS OF THE YEAR – MEETING THE NATIONAL AND RURAL RESEARCH PRIORITIES

The Australian Government's National Research Priorities and Rural Research Priorities provide a framework and focus for all of its research agencies. Land & Water Australia is very well placed to contribute to these priorities.

NATIONAL RESEARCH PRIORITY:

AN ENVIRONMENTALLY SUSTAINABLE AUSTRALIA

RURAL RESEARCH PRIORITY:

SUSTAINABLE NATURAL RESOURCE MANAGEMENT

Improving the sustainability of primary industries

- **The Masters of Climate Revisited** publication captures a series of follow-up interviews by Jesse Blackadder with farmers who were first interviewed about their use of climate tools in 1999. The follow-up explored how the farmers had fared during the drought and the role seasonal climate forecasting tools had played. Farmers are remastering the climate forecasting tools that were showing promise in 1999. Leading farmers are increasingly sophisticated risk managers, and are increasingly responsive and opportunistic in farm decision-making. They believe that their understanding of the El Nino Southern Oscillation (ENSO) in seasonal forecasting makes or saves them serious money in 3 years in 10. They are attributing climate change as the cause of increasing climate variability, but are becoming more confident about their ability to anticipate and manage the risks associated with climate variability.

Bill and Anne Yates from Garah, New South Wales shared their experience of using seasonal climate information when making business decisions as part of the Masters of the Climate revisited project.

Photo: Jesse Blackadder.

- Many of the common perceptions about the usefulness of saltbush have been challenged in the **Sustainable Grazing on Saline Land** sub-program of Land Water and Wool, resulting in new management systems that give both production and environmental improvements. In a grazing management study led by Dr Ed Barrett-Lennard (WA Department of Agriculture) on Michael Lloyd's property at Lake Grace, where saltbush was grown in alleys with an understorey of annual legumes and grasses, rotational grazing increased animal production 40% above set stocking. In other trials, saltbush has been able to drawdown highly saline groundwater to a depth of two metres. In addition, work at Yealering, led by Dr Hayley Norman (CSIRO), has indicated that there is significant genetic diversity associated with palatability and nutritive value within saltbush, which provides the opportunity for selecting cultivars with improved characteristics.

The national Grain & Graze program was launched at a special function in Parliament House last September by the then Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry Senator the Hon. Judith Troeth, centre front. Pictured with Senator Troeth are representatives from the Grain & Graze regional initiatives, from back left, Ron Hacker and Sue Rahilly, Central West/Lachlan (NSW), National Coordinator Richard Price, Bob Wilson, Northern Ag Region (WA), Kel Langfield, Central West/Lachlan (NSW), Kirrily Condon, Murrumbidgee (NSW), Chris Jones , Central West/Lachlan (NSW), front, Linda Leonard, Avon (WA), Alison Frischke, Eyre Peninsula (SA), Senator Judith Troeth, Allen Buckley, Mallee (NSW, Vic and SA), Col Hacking, Corangamite/Glenelg-Hopkins (Vic) and Bob Walker, Border Rivers (NSW/Qld).

- Forty case study farms have been analysed by RM Consulting Group for the **Grain & Graze** program across the mixed-farming zone of Australia to identify "Best Practice". Sound business decision making was found to be the key to a profitable business. However, the ability of farmers to make good business decisions varied significantly across the farms. When discussing how or why decisions were made, it was apparent that some farmers were using experience or intuition rather than objective measures.
- An assessment of **current climate trends** and their implications for cropping systems has identified a major change in frost frequency that has already induced significant industry adaptation. Impacts of projected climate change on simulated crop production, deep drainage and runoff were modest.
- A four million dollar **South-East Australia Climate** research collaboration between the Murray-Darling Basin Commission, Australian Greenhouse Office, Victorian Department of Sustainability and Environment and the Managing Climate Variability Program has been agreed. The program will be delivered via three themes of research covering: Characterisation and Attribution of Current Climate, determining the current level of knowledge; High-resolution Climate Projections and Impacts, producing new climate change scenarios and determining the extent of likely change in rainfall; and Seasonal Forecasts, assessing their potential in the Southern grains belt.
- The Grain & Graze program has developed **nine regional initiatives** bringing investment together from R&D Corporations, Farming Systems Groups, State agencies and regional/catchment bodies. The program aims to deliver a 10% increase in mixed farm productivity; improved,

or at least stable, condition for the natural resources on mixed farms, in line with regional or catchment targets; and more confident and knowledgeable mixed farmers.

- The Australian Government Department of Agriculture, Fisheries and Forestry has commissioned Land & Water Australia to implement and manage the **Healthy Soils for Sustainable Farms program**. The aim of the program is to accelerate the transition to practices which maintain and restore farmland soils by involving farmers and community groups in demonstrating and testing new methods in commercial conditions. In doing this the adoption of production systems and practices that address the underlying causes of land degradation rather than the outward symptoms will be promoted.

Managing rivers and irrigated agriculture

- Land & Water Australia assisted regional bodies in the Murrumbidgee, Mt Lofty Ranges and Goulburn-Broken regions to set spatial priorities for erosion control and targets for future sediment loads and riparian protection. Dr Scott Wilkinson from CSIRO used the SedNet model (for assessing soil erosion and sediment transport) and Rapid Appraisal of Riparian Condition (RARC) techniques to assist the regions in **prioritising river rehabilitation works**. RARC has easy to measure attributes of riparian vegetation which were found to correlate strongly with features such as riparian bird and invertebrate diversity. Wide dissemination through a Land & Water Australia factsheet has resulted in strong demand for training workshops by regional planners and on-ground groups.
- **Indicators of river health** for the Lake Eyre Basin, covering one-sixth of Australia, were developed and accepted by the Lake Eyre Basin steering committee. Dr Fran Sheldon from Griffith University led a team to develop indicators for the assessment of the condition of river ecosystems and catchments in the Basin that are very different to those used for river health in more humid environments, recognising the quite distinct ways that arid zone rivers operate.

The recently released Ecological Risk Management framework will assist irrigation industries address environmental risks.

- An **Ecological Risk Management Framework** for the Irrigation Industry was released, aiming to provide a robust process that will assist the irrigation industry to incorporate a transparent, scientific, precautionary and ecologically sustainable approach to its management of environmental risks.
- Estimates of the **value of irrigation to the Australian economy** and an outline of the economic implications for irrigation of water reform were developed by the Centre for International Economics.

In June 2005 the Land & Water Australia Board met in Darwin, giving them an opportunity to view and hear first-hand the management issues facing Australia's tropical rivers. The Board's visit included the Daly River.

- The **Tropical Rivers** research program commenced, with a successful mini-call for projects prior to major program expenditure

commencing in 2005-06. The program is a collaboration between Land & Water Australia, Department of Environment and Heritage and the Department of Agriculture, Fisheries and Forestry with additional funding of $195,000 from The Myer Foundation. The rivers, floodplains, wetlands and estuaries of northern Australia are relatively undisturbed and are highly distinctive compared with those in other regions of Australia, but subject to increasing demands for development. The program will undertake research and knowledge exchange to support the sustainable use, protection and management of Australia's Tropical Rivers under four themes: river assets and threats; regional planning frameworks; social, cultural and economic values; and river ecosystems.

The Environmental Water Allocation program is aiming to improve the way water requirements for key ecological sites such as the Barmah-Millewa Forest on the River Murray are managed.

- A five-year collaborative **Environmental Water Allocation Program** has commenced with a focus on improving the management of and outcomes achieved from environmental water allocations. This research collaboration with the Department of Environment and Heritage, Department of Agriculture, Fisheries and Forestry and the Murray Darling Basin Commission aims to demonstrate and evaluate the benefits of environmental management of stressed rivers such as the River Murray. It will improve knowledge on how best to manage environmental water, and how to measure the impacts of environmental flows, in poorly understood aquatic ecosystems across Australia.

Managing native and riparian vegetation

- The relative importance of **vegetation cover and vegetation patterns** in conserving biodiversity in agricultural landscapes is now better understood. Research led by Dr Andrew Bennett and Dr Jim Radford of Deakin University shows a marked decline in the richness of woodland dependent birds when vegetation cover is reduced below 10%, with a gradual decline starting at around 40% vegetation cover. The richness of mammal species showed a similar decline with a disproportionate loss below 10-12% vegetation cover. The 10% threshold represents local extinction occurring, but a long term goal of 30-35% vegetation cover is needed to maintain resilient populations of most bird and mammal species. This target can be made up of vegetation on both public lands – i.e. stream frontages, state forests, reserves and road sides - and private land.
- CSIRO and Western Australian Department of Conservation and Land Management researchers have found that connecting isolated patches of remaining habitat by creating corridors across farmland will improve the ability of the **endangered Red-tailed Phascogale** to move around the Western Australia wheatbelt and increase their chance of survival.

The endangered Red-tailed Phascogale. Photo CSIRO

- **Genetic analyses** by Dr Andrew Young of CSIRO Plant Industry have shown processes such as inbreeding and hybridisation can threaten the long term persistence of fragmented woodlands. This research, funded through the Native Vegetation R&D Program, has produced landscape management principles and scientifically rigorous seed collection guidelines that take into account this understanding of the reproductive biology in fragmented landscapes.
- Sandy Caruthers and David Paton have improved our understanding of the **threats to individual paddock trees** in agricultural landscapes and identified that clearance remains the major long term concern for tree survival and biodiversity conservation. When combined with dieback, ongoing clearing rates would result in the loss of all paddock trees within 150 years in some agricultural regions. In response, new guidelines have been prepared for identifying and protecting paddock trees of high ecological value. They have developed an efficient, reliable technique for large-scale census of scattered trees, using digital analysis of aerial photography, to determine rates of paddock tree loss in agricultural regions.

New guidelines have been prepared for identifying and protecting paddock trees of high ecological value.

- New research results from the National Riparian Lands Program show that riparian vegetation can play a crucial role in keeping **water temperatures** below lethal temperatures for stream organisms, many of which do not survive above 26 to 28°C. Geographical Information System (GIS) tools reveal where temperature restoration would be most effective across a whole river network.

Riparian vegetation can play a crucial role in lowering stream temperature and protecting aquatic life.

Creating sustainable future landscapes

- A major analysis of drivers of future change in Australia's landscapes ***Futures Thinking – About Landscapes, Lifestyles and Livelihoods in Australia*** was published. The booklet covers briefly the history of NRM before reporting on drivers in terms of landscapes, lifestyles and livelihoods. Scenarios of Australia's future are then analysed and implications for research and development distilled. The accompanying CD-ROM provides a wealth of deeper information and reference sources. It aims to encourage readers to think broadly about the factors that might determine the future and imagine for themselves what challenges could emerge.

Improving social, economic and institutional arrangements

- We often talk of the need for better integration of environmental, social and economic considerations in natural resource management. But translating intent into action is difficult. Land & Water Australia organised an ambitious **Integration Symposium** that has catalysed special editions of both the ***Australian Journal of Environmental Management*** and the ***International Journal of Research Practice***. A CD ROM of the proceedings available free through Land & Water Australia captures the state of the art in a number of well-written case studies. It also includes Guiding Principles for practitioners, expertly distilled by Professor Gabriele Bammer of the ANU.
- Regional natural resource management planning initiatives or broad organisational rationalisation have, on their own, failed to guarantee better results, according to Tiffany Morrison based on doctoral research supported by an Land & Water Australia scholarship **"Pursuing NRM planning and management across regions"**. Based in part on international comparisons, she concludes that NRM planning initiatives have often added to the complexity of the region, been resource inefficient or simply politically impossible to get off the ground. Nevertheless, institutional integration does occur in a region through other formal, informal and implicit processes that also facilitate integration indirectly within and between issues, activities, disciplines and organisations.

Increasing adoption of research findings

- A substantial new regional engagement project was initiated in January 2005 with funding from the Australian Government's Natural Heritage Trust. In its first five months **"National knowledge brokering for regional NRM"** has surveyed regional organisations and run workshops to identify barriers to knowledge exchange. A scoping report summarises these findings and identifies proposals for improving knowledge exchange between the national and regional levels. The project is managing a feasibility study for a "First-stop-knowledge shop" with a technical advisory group bringing together most of the national NRM knowledge providers.

Sturt's Desert Pea

- The new **knowledge and adoption strategy** for Land & Water Australia was endorsed by the Board. The strategy outlines how the Corporation will manage existing and new research for

greater adoption of the results. This includes embedding the management of knowledge for adoption into the research lifecycle and engaging more effectively with regional NRM organisations.

- The National Land & Water Resources Audit, with the help of the States and Northern Territory, completed trials on implementing the **National Monitoring and Evaluation Framework**. The Framework has been agreed by the governments as a policy but testing the implementation has highlighted issues such as the capacity of regional groups to report on natural resource condition, the relevance of the indicators of resource condition, and roles and responsibilities of the various agencies and regions.
- The production of information according to agreed standards and methods is being coordinated by the National Land & Water Resources Audit via a series of national "thematic" committees. The committees are advising on **Australia wide indicators of resource condition**, associated data and information requirements and a series of products. The Audit Advisory Council has agreed on a reporting framework and the first report by these committees has identified that only a few of the nationally proposed indicators have been developed sufficiently to be recommended for national and regional application.
- The **Australian Natural Resource Atlas** continues to be the main repository for national natural resource information. Other atlases and information sources are being linked to the atlas to ensure that there is a "one stop shop" (or at least a shopping arcade) for people to find national resource information.
- **Land Use mapping** has been highlighted as a successful partnership between the Audit, the Bureau of Rural Sciences and States. The Mapping program has delivered the latest national land use map (and is developing regional scale land use mapping). The program was showcased at a function at Parliament House and at the Audit Advisory Council meeting in Brisbane in June. Land & Water Australia is a member of the Audit Advisory Council.
- Two basic assumptions underpin the logic of regional NRM group activity under the Natural Heritage Trust: that particular stakeholder engagement and investment strategies result in changed NRM practices by landholders, and that these changed practices result in improved condition of natural resources. The project **"Stakeholder engagement and practice change in regional NRM organisations"** looks critically at these assumptions and has been undertaken in collaboration with the NHT, in participation with four Catchment Management Authorities in North East Victoria, Southern Rivers (NSW), Southern Gulf (Qld) and Swan (WA). Individual consultants worked with each region, within the framework of an overall communications consultancy, and coordinated by lead researcher Janelle Allison of Queensland University. Their focus is on developing, and learning from, practical examples of how regional NRM groups engage stakeholders and make investments in NRM practice change, how they monitor and evaluate their success, and how they apply what they learn to further improve their business.

Sunrise at Karlwe Karlwe (Devil's Marbles), NT.

- The benefit of building strong participative research relationships of trust and collaboration with indigenous communities over time is clearly

demonstrated by Diana James of the ANU in her project **"Indigenous kinship with country: intercultural values of caring for country"**, undertaken in the Anangu Pitjantjatjara (AP) Yankunytjatjara Lands, Central Australia. The relationship has been developed over 12 years of interaction and deepened by communication in both English and Pitjantjatjara languages. Its objective is to articulate the explicit and implicit bi-cultural values and practices of eco-cultural tourism that can sustain Indigenous caring for Kin Country: Anangu '***ngura walytja***', their ecological and cultural landscapes. The AP Regional Council will implement the bi-cultural eco-tourism management model, with ongoing monitoring of tourism impacts on land and water management, cultural heritage management and the development of governance and business under traditional law, Tjukurpa.

- There is more to effectively transferring the results of research into policy than merely producing a report. There are many pathways that researchers might take to that end as set out in the ***Research meets policy*** booklet and associated guidelines. Communication is an integral and continuous activity in good research, and at its simplest requires knowing your audience and preparing your message accordingly. In the policy context it also requires perfect timing.

Sunrise at "Cadney Homestead" - Stuart Hwy, SA

NATIONAL RESEARCH PRIORITY:

PROMOTING AND MAINTAINING GOOD HEALTH

- In the 1990s Land & Water Australia, in collaboration with the Cotton Research & Development Corporation and the Murray Darling Basin Commission, undertook fundamental research on riverine contamination from pesticide application to cotton farms. This research, and the ensuing development and implementation of the **cotton industry's Best Management Practice Program**, has recently been evaluated, showing a $171m net present value return on investment. One of the significant benefits, accounting for around 20% of the total net benefit, was found to be reduction in the anxiety of farmers, farm workers and local communities about potential health and environmental impacts of off-target pesticide use.
- Natural resource management is not just about dealing with biophysical systems. It is also impacted by human interactions with the environment, and the cultural, social and economic drivers that are at work. A new report ***Australia's farmers: past, present and future*** by Dr Neil Barr of the Department of Primary Industries, Victoria, investigates the demographic change in rural Australia and the implications of the changing social structure on natural resource management. After a long term trend of declining farmer numbers through much of the past century, the decline slowed and almost stopped during the 1990s. Since 1981 the average farmer age has been steadily increasing accompanied by declining entry of young people, especially women. These trends affect the capacity of communities to change current land use and management, and are relevant to issues of national policy significance such water, vegetation and salinity.
- Professor Michael Buxton of RMIT is studying **peri-urban regions** at the interface between town and country around the metropolitan areas of Brisbane and Melbourne and the rural areas of Bendigo and the Gold Coast. He is investigating the nature, extent and drivers of the emerging 'sea-change' and 'tree-change'

phenomena and their implications for future land use and management. The project is developing scenarios based on 'business as usual', 'interventionist' and 'deregulated' options for policy, institutions, governance, regulations and other measures.

Mobile technology including GPS tracking and location systems is changing the way agricultural land is managed.

- Business leaders, farmers, foresters, scientists and policy makers all point to alarming trends in the degradation of rural landscapes and their serious economic, social and environmental implications. But change to new sustainable management approaches is traditionally slow. A new five year **Social and Institutional Research Program** approved to commence in 2005 will harness a range of inter disciplinary social science research to identify the drivers for change and to develop a range of instruments to assist policy choice and institutional change that will facilitate the change to sustainable practices. The program's strategic plan "Making the connections" describes three key themes within which the research will be undertaken: institutions and governance; policy instrument choice; and landscapes, lifestyles and livelihoods. It is underpinned by the principles of collaboration, integration and knowledge exchange; and monitoring and evaluation.

RURAL RESEARCH PRIORITY:

IMPROVING COMPETITIVENESS THROUGH A WHOLE OF INDUSTRY APPROACH

RURAL RESEARCH PRIORITY:

MAINTAINING AND IMPROVING CONFIDENCE IN THE INTEGRITY OF AUSTRALIAN AGRICULTURAL, FOOD, FISH AND FORESTRY PRODUCTS

RURAL RESEARCH PRIORITY:

IMPROVED TRADE AND MARKET ACCESS

- The **Rural Research and Development Corporations' Natural Resource Management Working Group** has been established under the auspices of the RDC's Chairs Committee. The Working Group is chaired by Anwen Lovett of Land & Water Australia. A reporting framework for RDC investment in NRM research was designed and trialled with the RDCs, and completed in June 2005. This framework is now being populated and the results presented to the RDC Chairs and the Department of Agriculture, Fisheries and Forestry who also have a keen interest. A report on collaboration will also be released. The Working Group plan to hold their first NRM Forum in March 2006.
- The **"Better Fertiliser Decisions"** project is providing regionally specific and scientifically validated fertiliser production responses for various pasture types, climatic zones and soil conditions. The project will reduce the potential environmental impact from fertilisers on rivers by promoting better advice from industry consultants and improved on-farm fertiliser management. This large joint project with Dairy Australia, Meat and Livestock Australia, Fertiliser Industry Federation of Australia, the National Land & Water Resources Audit and State agencies has produced response curves for grazed pastures from Nitrogen, Phosphorus, Potassium and Sulphur applications, compiled from over forty years of nutrient response trials across Australia.

- The **Future Woolscapes** project of the Land Water & Wool program has used scenario planning to critically examine the question "What might the world and the wool industry look like in 2030 – and what might be the implications for the industry?" Led by Russell Pattinson, a forum made up of 20 woolgrowers, scientists and industry specialists commissioned reports on specific issues that may impact on the world and the wool industry (e.g. social issues, climate change, competitors, new technologies, consumer preferences). They also produced four totally different wool industry scenarios set in the year 2030 and considered their implications and possible strategies for the wool industry to consider. Potential land use changes, environmental considerations, animal welfare and the emergence of new technologies were at the forefront of the project's findings.

This trial plant near Narrogin in the Western Australian wheatbelt is testing the integrated production of energy, eucalyptus oil and activated carbon using biomass from purpose-grown mallees.

- The Joint Venture Agroforestry Program managed by the Rural Industries Research and Development Corporation has over many years developed new short rotation systems to produce **Eucalyptus oil** along with other products and services – including lowering watertables under salinised landscapes. A scoping study and subsequent R&D funds has led to substantial investment by Western Power in building the pilot Integrated Tree Processing plant at Narrogin in the Western Australian Wheatbelt. The pilot plant will test integrated production of energy, eucalyptus oil and activated carbon using biomass from purpose-grown mallees of which more than 10,000 ha have been established by wheatbelt farmers. A successful plant of this type will generate regional power supply and new sources of revenue and employment for the region, while offering a commercial option for farmers to better manage rising groundwater tables and consequent salinity over large areas of the WA wheatbelt.

Well managed productive grazing systems are good for the environment and profitability.

NATIONAL RESEARCH PRIORITY:

FRONTIER TECHNOLOGIES FOR BUILDING AND TRANSFORMING AUSTRALIAN INDUSTRIES

RURAL RESEARCH PRIORITY:

USE OF FRONTIER TECHNOLOGIES

- Futures analyses have identified emerging technologies as one of the key drivers of change in the agricultural and environmental industries. Biotechnology, microtechnology, materials, remote sensing, information and communication, artificial intelligence and nanotechnology are just some of the frontier technologies that will potentially transform production systems and the management of natural resources. These trends are analysed in a new publication ***Futures Thinking – About Landscapes, Lifestyles and Livelihoods in Australia.***

- Land & Water Australia is funding research on **two ground-breaking technologies**. One technology, being developed by Dr Chris Barber through the University of Western Australia, allows the extraction of water from brackish (salty) aquifers but leaves the salts behind in the soil, avoiding expensive disposal problems. The second project, led by Dr Paul Dare of Flinders University, aims to combine laser altimetry and spectrography into one airborne platform to improve the capability of remotely measuring vegetation structure and monitoring vegetation health.
- A computer system linking geographic information systems, **virtual reality technology** and personal digital assistants has been developed by Dr Ian Bishop of Melbourne University and used in community workshops to envision and evaluate alternative futures. The system was tested in the Cudgewa Valley in north-eastern Victoria via community workshops where the local people were impressed by the interactive and graphical qualities of the system.
- A recent evaluation of **Control Traffic Farming (CTF)**, a project funded by Land & Water Australia in the 1990s and led by Dr Don Yule of the Queensland Department of Natural Resources and Mines, shows that this technology is being applied to over 1 million hectares of cropland across Australia. CTF is a crop production system where the paddock is divided into crop zones and wheel zones on a permanent basis, with zones orientated to provide drainage of surface water to a safe disposal point. The main benefits are less soil erosion, better water management, increased crop yield and more cropping options. A conservative net present value of $51m and benefit to cost ratio of 5:1 has been calculated for 100,000 ha under CTF in central Queensland alone.

RURAL RESEARCH PRIORITY:

CREATING AN INNOVATIVE CULTURE

- In December 2004 Land & Water Australia launched its **Senior Research Fellowships** program. Three inaugural Fellowships were presented to outstanding researchers by then Deputy Prime Minister, the Hon John Anderson MP and the Hon Warren Truss MP, then Minister for Agriculture, Fisheries and Forestry on behalf of the Prime Minister at a launch and dinner at Parliament House. The three inaugural Fellows are Dr Neil Barr, Dr Richard Evans and Professor Sam Lake.

Our 2004 Senior Research Fellows Professor Sam Lake, left, Dr Neil Barr, 3rd from left and Dr Rick Evans, far right, pictured at the announcement dinner with Land & Water Australia's Executive Director Andrew Campbell, the then Minister for Agriculture, Fisheries and Forestry the Hon. Warren Truss MP and Land & Water Australia Chairman Bobbie Brazil.

- The **Master Farmers pilot** project was established with the aim of working with a small group of leading farmers from a range of enterprises to identify and assess the sustainability benchmarks used by elite farmers. The project also aims to establish a commercial definition for sustainability, learn from different sectors and operational approaches, and seek perspectives on current R&D in Australian agriculture and future directions. Twelve farm businesses have been identified and profiling of operations commenced during 2004-05. These businesses were selected on the basis of the innovativeness of their approach to production and sustainability, the data they hold (and their willingness to share) and a good cross section of business types and geography. Workshops will be held during 2005-06.

- A Post-Graduate Certificate Course in **River Restoration and Management** was successfully initiated in 2004 by Charles Sturt University, Wagga Wagga. The course is aimed at practitioners working in catchment management bodies, government agencies and private industry. It has modules in Geomorphology & Hydrology, Stream & River Ecology, River Protection & Restoration, and Policy & Management, drawing on results of ten years of Land & Water Australia-funded research. Community training in river restoration and management (learning from the Streamkeepers courses run in British Columbia) was also initiated at the TAFE level.
- The Natural Heritage Trust and National Action Plan recognise that there are critical social foundations underpinning any improvement in natural resources condition. In a project jointly funded with those programs, Mark Fenton developed a detailed set of over 50 indicators as a basis for a **monitoring and evaluation of the social foundations of regional NRM organisations.** They cover four broad dimensions of social outcomes: acknowledgment, engagement, partnership, and capacity. He proposed implementation in three stages : review of proposed indicators and methodology; pilot testing of the methodology; and full implementation across regional groups. The first two stages were subsequently implemented by NAP and NHT, with a view to moving to full implementation.
- Land & Water Australia's **Community Fellowships** celebrate the importance of individual working on-the-ground to improve natural resource management. Nine Community Fellowships were awarded this year and incorporated ancient knowledge, modern urban tales and amazing personal journeys. The Fellowships are designed to enable ordinary Australians with outstanding and inspirational stories of natural resource and environmental management to share their experiences and enable others to learn from them. Since inception in 2001 the Fellowship program has supported 36 individuals or small groups to share their sustainability stories. The program is supported by private philanthropists.

His Royal Highness the Prince of Wales visited the Gunning NSW property of Land & Water Australia Community Fellowship recipient John Weatherstone, right, in March 2005. Among the guests at a reception to greet the Prince was Land & Water Australia Executive Director, Andrew Campbell, left.

- In 2004 Land & Water Australia became involved with the **Eureka Awards** for the first time, assisting the prizes to become Australia's largest scheme rewarding research into environmental and sustainability issues. The inaugural $10,000 Land & Water Australia Eureka Prize for Water Research was awarded to Alan Williams and Ivor Stuart for a simple fish trap that collects 90 percent of carp without harming native fish. It's the world's first practical, low cost method of separating invasive carp from native fish.

Land & Water Australia Executive Director Andrew Campbell, centre, pictured with the 2004 winners of the Land & Water Australia Eureka Prize for Water Research, Alan Williams, left and Ivor Stuart.

- Aboriginal people control a growing proportion of land in the rangelands and northern Australia and face the challenge of exercising their responsibility to Country within a contemporary NRM framework. A successful **indigenous research forum** held in Darwin in December 2004 showcased a range of innovative approaches being taken to indigenous involvement in NRM research within a portfolio of 12 projects being funded by Land & Water Australia at a total investment cost of $2.5 million. The emerging lessons from the projects for effective engagement with indigenous communities include: developing bicultural models to accommodate dual knowledge systems while building capacity; strategies for better acknowledging and conserving indigenous knowledge; recommendations for institutional change to improve indigenous involvement; involving indigenous people in strategic planning processes; and finding direct links between human health and landscape health.

NATIONAL RESEARCH PRIORITY:

SAFEGUARDING AUSTRALIA

RURAL RESEARCH PRIORITY:

PROTECTING AUSTRALIA FROM INVASIVE DISEASES AND PESTS

- The Department of Agriculture, Fisheries and Forestry has commissioned Land & Water Australia to manage the development of a Strategic Plan for the R&D component of the Australian Government's $40m Defeating the Weeds Menace Program. The Strategic Plan was presented to the Government in October 2005 with the R&D program expected to commence soon.
- More than 20 projects under the **National River Contaminants Program**, jointly developed with the Murray Darling Basin Commission, progressed to their final stages. The program recognises that river contaminants affect not only the health and ecological value of our riverine systems (including wetlands and floodplains) but also threaten consumptive and commercial uses of the water resource. The program has generated new knowledge on the sources, pathways and transformations of specific river contaminants, and is developing and testing new solutions and tools for reducing ecological impacts from contaminants.

REPORT OF OPERATIONS

DIRECTORS' REVIEW OF OPERATIONS AND FUTURE PROSPECTS

Land & Water Australia performed extremely well during 2004-05 in relation to its statutory objects and functions, the Strategic R&D Plan 2001-06, and its principal outputs as set out in the 2004-05 Annual Operating Plan.

Strategically, the 2004-05 year was a pivotal one for the Corporation. The Board took a strategic decision to submit a new Strategic Plan to the Minister one year earlier than scheduled, for a number of reasons. Rapid changes in the dynamic NRM policy and program context, coupled with the scheduled completion of a number of significant research programs in 2004-05, underlined the desirability of reconsidering the strategic investment framework in 2004-05 rather than 2005-06. So strategic planning activity was intense in calendar 2004, and the Board was delighted that the Minister approved a new Strategic Plan.

The new Strategic Plan is discussed further below. This Annual Report is structured around the Strategic R&D Plan 2001-06 which was in force throughout the reporting period. The overall outcome the Corporation worked towards in 2004-05 is encapsulated in that plan's mission statement: ***to provide national leadership in generating knowledge, informing debate and inspiring innovation and action for sustainable natural resource management.*** The strategic directions the Corporation implemented include: active development of partnerships with the major rural industries utilising land and water resources; work to bridge the gap between natural resource management research and policy; more emphasis within the R&D portfolio on work at a landscape scale; a more integrated approach to research investment and management across its social, economic and biophysical dimensions; managing knowledge and information generated by the Corporation's whole portfolio of investments over the last thirteen years, not just current contracts under management; and continuous improvement in our effort to encourage the adoption of our research outputs.

The 2004-05 year saw very solid progress in all of these strategies.

Major new research initiatives in Sustainable Irrigation, Grain & Graze, and Managing Climate Variability are now well underway. These new initiatives, along with the mature Land, Water & Wool program, cement our partnerships with the major broadacre industries in Australia, which are now major investors in natural resource management R&D.

Land & Water Australia managed a number of applied policy-related research projects for the National Action Plan for Salinity and Water Quality and the Natural Heritage Trust on behalf of the Department of Agriculture, Fisheries and Forestry and the Department of Environment and Heritage. It is pleasing to see better engagement between science and policy through such projects.

The sustainability of the resource base on which Australia's primary industries depend is at the core of the Land & Water Australia mandate under the Primary Industries and Energy Research and Development (PIERD) Act 1989, and the National Research Priorities. In accord with s.28 of the PIERD Act and s.516 of the Environment Protection and Biodiversity Conservation (EPBC) Act 1999, we are required to report on Land & Water Australia's contribution to ecologically sustainable development (ESD). The vast majority of our research portfolio is directed towards improving the knowledge base for sustainable management

of natural resources, in particular land, water and vegetation, so it is difficult to itemise individual contributions. The Corporation is investing in research that will help to minimise or reverse degradation of natural resources, develop more sustainable land use systems, identify priorities for resource protection, and improve management techniques for long term resource conservation. Our research portfolio is directed to support both better management of natural resources, and better policies and institutional arrangements more consistent with ESD principles.

The report against outputs as set out in the Annual Operating Plan is tabulated in detail on pages 27 to 59. It reveals that more than 90% of the planned outputs for 2004-05 were achieved across the R&D portfolio. Some highlights have already been listed (pages 7 to 19).

Land & Water Australia is playing a leading role in delivering the science needed to manage Australian landscapes and natural resources more sustainably. In addition to our existing portfolio of more than 1600 completed R&D projects, as at July 2005 we have a significant research portfolio of around 300 projects in 12 programs involving 45 different program-level partners already in train. Three new R&D initiatives approved by the Board during 2004-05 are just commencing: the Tropical Rivers Program, the Social and Institutional Research Program, and the Native Vegetation and Biodiversity Program. The **tropical rivers** initiative will provide crucial knowledge that is so essential to inform the inevitable debates about the development of water resources in Australia's north. New applied research on **social and institutional** issues in natural resource management will underpin the continuing reform agenda in water and vegetation management and in regional arrangements for natural resource management. New research on **native vegetation and biodiversity** management at a landscape scale, especially in mid-low rainfall zones and northern Australia on the vast majority of the continent outside the reserves system will fill a chronically under-funded gap in knowledge of one of the main levers of landscape change.

The large number of partnerships that the Corporation manages, and the fact that more than half of our total expenditure (and two-thirds of our research expenditure) is third party funds, indicates that Land & Water Australia is playing a critical brokering and coordination role in natural resource management R&D. Importantly, the Corporation is adding value to this impressive research effort with: a strategic and focused communication effort aimed at improving adoption of research outputs; leading edge web-based tools to assist people to interrogate the entire research portfolio; and catalytic investments to build long term innovation capacity in natural resource management.

The breadth and balance of the Corporation's research portfolio is illustrated by the achievements listed in the highlights on pages 7 to 19.

Financial performance

The financial performance of Land & Water Australia in 2004-05 was encouraging. The Corporation's revenue for the year was $27.9 million, an increase of $2.4m on the previous year. This is a significant level of financial leverage on an appropriation from the Commonwealth through the DAFF portfolio of $12.5m. 144 new research projects were contracted, attracting $14.7m of partner co-investment in cash and significantly more in-kind from research providers. Research expenditure of $21.5m increased $0.6m over the previous year, continuing a strong pattern of improvement, while expenditure on knowledge and adoption at a Corporate level increased by $0.4m and expenditure on administration decreased slightly.

The overall financial result for 2004-05 was an operating surplus of $1.6m, compared with an operating deficit of $0.16m in 2003-04. This surplus is higher than forecast due to some delays in R&D projects already underway arising from drought and other factors, and also higher than expected revenue. The Corporation's equity position of $3.2m is at the high end of the Board's preferred range. It is likely that the Corporation will operate in deficit in 2005-06 as planned R&D expenditure gets back on schedule, but equity will be maintained at a level comfortably above the Board's preferred baseline of $1.3m.

Communication Performance

The Corporation's performance in disseminating its R&D outputs continues to improve. The Land & Water Australia website is the key means by which increased distribution has been achieved. Visits to the site have increased to an average of 506 visits per day compared to an average of 345 visits per day during 2003-04.

During the year, visitors downloaded more than 125,000 electronic versions of Land & Water Australia publications and research outputs, up from 90,000 in 2003-04. To print and distribute these by non-electronic means would require a trebling of the Corporation's 'printing and delivery' budget. With minimal promotion, demand for hard copy products remained relatively stable, increasing by 5% compared to 2003-04. The investment in developing our web-based catalogue and ordering service in the second half of 2001-02 has supported our ability to service the increase in demand with 50% of our customers choosing to place their orders online both in 2004-05 and 2003-04, compared to 20% in 2002-03 and less than 5% in 2001-02.

Despite a strong record of growth in web usage over recent years, the Board recognised that there was further room for improvement. During 2004-05 a comprehensive review of the Corporation's websites underpinned the development of a new 'e-business' strategy that will see an overhaul of our corporate and program websites and the content management systems that support them. We expect the result to deliver an even more functional, informative, easy to use web interface that works much more efficiently for us in keeping all parts of the site up to date and decentralising content management across the Corporation, while maintaining control of quality and risk.

Risks and Opportunities

The task of investing in natural resource management (NRM) research and development on behalf of the taxpayer in the national interest is one of great responsibility. The Corporation needs to anticipate the sorts of knowledge that the Australian community will require in the future, ideally some years in advance of that need being widely perceived. Land & Water Australia has worked closely with the Australian Government in aligning our research investments to both the National Research Priorities, and major policy and program investments through the National Action Plan for Salinity and Water Quality and the Natural Heritage Trust. We are now also discussing joint investment and alignment opportunities with the National Water Commission.

Getting the investment mix right is a balancing act. We weigh up speculative research on issues that are on or over the horizon for which there may be limited current demand; against applied research designed to fill immediate knowledge gaps for which there are pressing demands. It is easier to find co-investors and adopters for the latter type of issues. However the public benefit over the long-term will be best served if Land & Water Australia takes a long-term view across its whole R&D portfolio.

The new Strategic R&D Plan 2005-10 sets out three core strategies for the Corporation: research investment; collaboration and strategic analysis; and knowledge into practice. This is a crucial departure for the Corporation. In the past, research investment could reasonably have been considered the core and only strategy for the Corporation, with all other activities subsidiary to that.

The new Strategic Plan sets out three clear and distinct lines of business. Research investment remains pivotal, and will continue to attract most funding. However the new plan recognises that the Corporation's collaboration, coordination and strategic analysis functions within the NRM knowledge system are important and distinct activities in their own right. Further, the task of managing knowledge for adoption – not just the current R&D programs but the Corporation's entire portfolio, past and present – is a key priority in its own right. These three strategies are designed to help us maintain an appropriate balance between: generating new knowledge (and within that, between current and future knowledge needs); promoting the adoption of current knowledge into practice; and developing partnerships that will assist both these aims as well as assisting in overall coordination of the NRM research and development effort.

The new Strategic Plan was approved by the Minister, and strongly endorsed by the DAFF portfolio, our Representative Organisations and around 30 key stakeholders consulted during its development. It positions Land & Water Australia very well to make an even more important contribution to the knowledge base for sustainable management and development of Australia's natural resources.

THE CORPORATION'S OPERATIONAL RESULTS

OPERATING ENVIRONMENT

The management of Australia's rich and unique endowment of natural resources has never been higher on the national agenda. Water resources – both surface water and groundwater – are under extreme pressure, as the majority of the Australian population experiences water restrictions and irrigators face severely reduced allocations. Australia has long had to deal with extreme climate variability, but it is now becoming clear that each drought is hotter and drier than the last, and we seem to be in a more profound drying cycle, especially in south-western and south-eastern Australia. Climate is a fundamental driver of ecological processes, and a major shaper of production possibilities for Australia's primary producers. Australia is one of the most biologically diverse countries on the planet, and most of our native species exist in no other country, which means that responsibility for their management and future prospects rests with us. The management of vegetation, both pastures and trees, is critical in achieving an appropriate hydrological balance, in managing carbon emissions, in minimising further losses of biodiversity and in sustaining many of our grazing systems. Invasive species, both plants and animals, continue to impose significant costs on agricultural production, and fierce competition and predation pressures on native species. Australian soils are the engine room of agricultural productivity. Soil management remains an important development opportunity for more sustainable production systems.

The uniqueness of Australia's landscapes, climates, soils and biota means that in the main we cannot import knowledge about management of our natural resources. We have to develop our own solutions for our own problems. Our agricultural production systems have to be smarter and more sophisticated to achieve comparable levels of profitability with our international competitors who enjoy younger, richer, more forgiving soils with more reliable climates.

Community expectations of agricultural and pastoral landscapes continue to change. Consumers demand healthy rivers and estuaries and viable populations of native animals and plants, in addition to cheap and clean food, fibre and water. Increasingly, the community wants a wider range of services from the countryside, which is becoming a place of consumption (of vistas, tourist, cultural and heritage experiences and lifestyle opportunities) alongside the traditional production of food and fibre outputs. Demographic change, especially along the eastern seaboard, will intensify competition for rural land and place pressure on the resource base, while opening up new opportunities through the influx of new capital and a wider range of people.

In response to the challenge of balancing the often competing demands on rural landscapes, governments across Australia have fostered the development of new organisations at catchment and regional scales. These new catchment bodies and regional committees are charged with important planning responsibilities, and often with the demanding task of prioritising and allocating public funding through large national funding programs such as the Natural Heritage Trust (NHT), the National Action Plan for Salinity and Water Quality (NAP) and complementary programs at State and Territory level. These organisations are becoming important players in the natural resource management knowledge system, and critical clients for NRM research outputs.

Against this background, there is a continuing need for carefully targeted and well-managed research: to generate the uniquely Australian knowledge needed to improve Australian farming systems and consequent profitability; to manage

our natural resources more sustainably; to inform large public investments in natural capital; and to help governments balance competing demands on natural resources and rural landscapes.

REVENUE AND EXPENDITURE TARGETS

Revenue

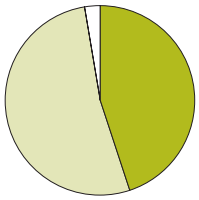
The 2004-05 audited financial statements on pages 80 to 115 show that Land & Water Australia received revenues totaling $27.9 million, of which third party contributions totaled $14.7 million or 52.6% of total revenue (2003-04 $12.8 million or 50% of total revenue) and monies from Government totaled $12.5 million or 44.9% of total revenue (2003-04 $12.2 million or 48% of total revenue). Interest and other income totaled $0.7 million or 2.5% of total revenue (2003-04 $0.5m or 2% of total revenue). Figure 1 provides a breakup of Land & Water Australia revenue for 2004-05.

Expenditure

During 2004-05 fiscal year, Land & Water Australia's expenses totaled $26.3 million of which $21.6 million (82.1% of total spend) was invested in research and development (2003-04 $20.9 million or 81.3%). Communication and adoption investment at the Corporate level totaled $1.9 million or 7.2% (2003-04 $1.5 million or 5.8%) while Portfolio Management expenditure including strategic planning and evaluation activities accounted for $0.3m or 1.1% of expenditure (2003-04 $0.7 million or 2.7%). Administrative expenditure totaled $2.5 million or 9.6% of total expenditure (2003-04 $2.6 million or 10.1%). The graphs show the breakup of Land & Water Australia's expenditure by function (Fig. 4) and by research and development Arenas and programs (Fig. 2 and 3).

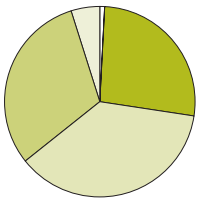
Revenue

FIGURE 1 - Revenue:
Revenue by source 2004-05



Revenue from government	44.9%
Third party contributions	52.6%
Interest and other income	2.5%

FIGURE 2 - Land & Water Australia and third party expenditure across R&D arenas 2004-05



Cross Cutting	27.15%
Futures	0.07%
Industries	36.82%
Rivers	31.31%
Vegetation	4.65%

National Land & Water Resources Audit is included in Cross Cutting

FIGURE 3 - Expenditure on R&D Programs 2004-05

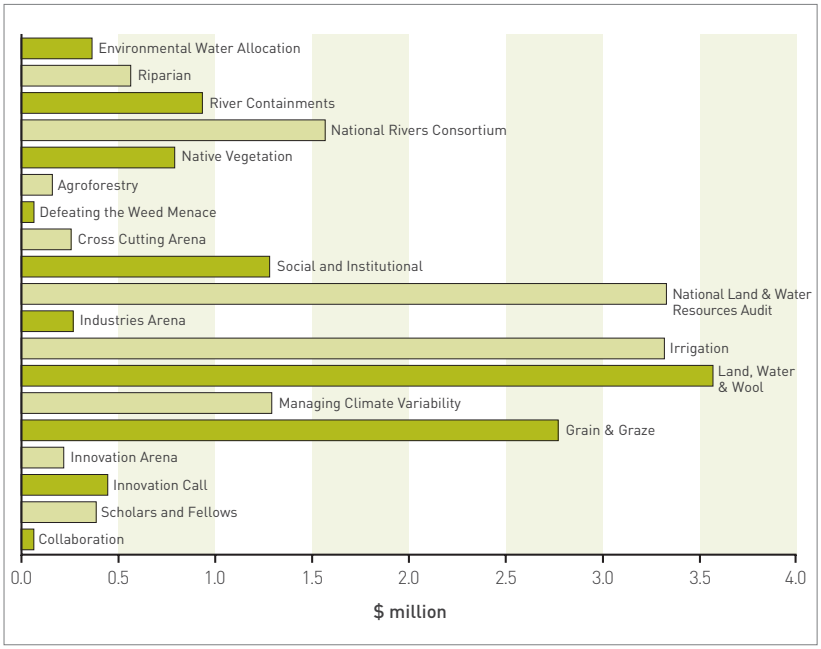
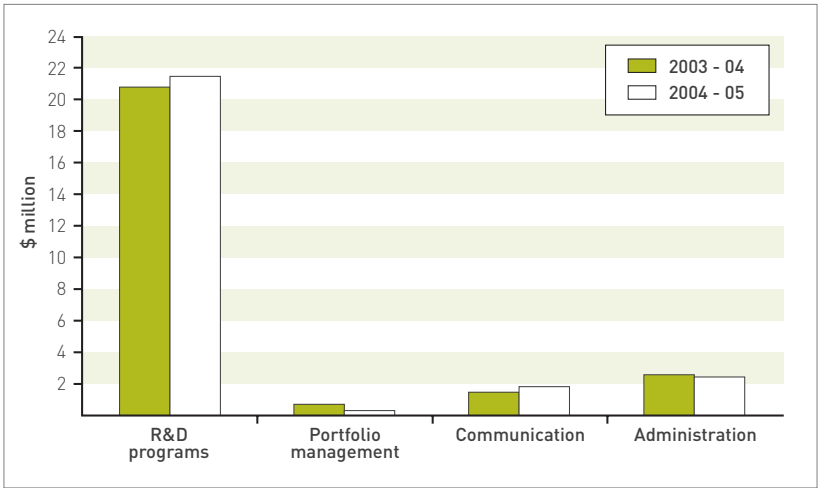


FIGURE 4 - Comparison between 2003-04 and 2004-05 expenditure



OPERATIONAL REPORTING FOR THE R&D ARENAS AND PROGRAMS

Most (82%) of expenditure in 2004-05 was directed to research and development (R&D) activities (page 25). This section describes how each research Arena and their constituent programs have performed in achieving the planned outputs in our Annual Operational Plan.

R&D Arena and Program Reporting

Arena: Improving Sustainability and Addressing Contemporary Issues in Primary Industries

Programs: Grain & Graze
Managing Climate Variability
Land, Water & Wool

Arena: Managing Australian River Landscapes

Programs: National Program for Sustainable Irrigation
National Rivers Consortium
National River Contaminants Program
Environmental Water Allocation Program
Tropical Rivers Program
National Riparian Lands R&D Program

Arena: Managing Vegetation in Rural Landscapes

Programs: Native Vegetation R&D Program
Joint Venture Agroforestry Program

Arena: Future Landscapes and Compatible Industries

Arena: Cross-Cutting Activities

Programs: Social and Institutional Research Program
General Call/Innovation Call
Scholarships and Fellowships

R&D ARENA:

IMPROVING SUSTAINABILITY AND ADDRESSING CONTEMPORARY ISSUES IN PRIMARY INDUSTRIES

Land & Water Australia's investments support the generation and application of the best available knowledge about sustainable production systems. Through a number of our major collaborative investments, Land & Water Australia works with the commodity RDCs (and with numerous research providers and collaborators) to meet sustainable production research needs. These programs bring together a range of different commodities to jointly invest in areas of common concern, and to do so in partnership with state and federal governments and private water authorities. Key research themes include:

- **Integrating Environment and Production:** Seeking progress towards positive gains in environmental and production goals, such as Land, Water & Wools' investment in biodiversity conservation on commercial wool properties;
- **Designing Innovative Farming Systems:** Through the Managing Climate Variability Program, seasonal climate forecasting tools are being developed to enable producers to make strategic responsive decisions for profit in good seasons and protection of resources in poor seasons.
- **Working Across Scales:** Understanding how changes in a catchment (eg rising salinity) affect production and how production affects the catchment (eg nutrient contamination) is increasingly important. For example Grain & Graze is seeking to connect on-farm sustainability outcomes with catchment outcomes;
- **Supporting Adoption & Practice Change – Farmers & Catchment Managers:** Land, Water & Wool's Sustainable Grazing on Saline Land Producer Network is working with 120 farmer groups to support adoption.
- **Supporting adoption – Policy:** The National Sustainable Irrigation Program's report on Implications of Water Reforms for the National Economy.

Grain & Graze

The program ultimately aims to:

- deliver a 10% increase in mixed farm productivity driven by a 5% increase in grain yields and a 10% increase in livestock production;
- achieve improved, or at least stable, condition for the natural resources on mixed farms;
- align with regional or catchment targets; and
- develop more confident and knowledgeable mixed farmers.

The research program at the regional level is largely in place, with the focus shifting by the end of 2004-05 to research investment at the program level to support regions and build technical capacity. This research will roll out in 2005-06 and will include economic farm business analysis, feed budgeting and social and institutional.

In 2004-05 Grain & Graze invested $2.8 million of which $0.4m was from Land & Water Australia. The budget of the program is $22.9 million over its life, comprising $14.4m in partner funds and $8.5m in third party funds.

Grain & Graze Program: Performance against planned outputs in 2004-05

Planned outputs	Achieved outputs
Ongoing activities that connect farming systems research to catchment plans.	Eight regional research projects across the mixed farming zone, approved, with collaborative investment from RDCs, catchment management agencies and producer groups *(see highlights p8).* Research and demonstration sites established with local field days for farmers/catchment employees held.
Management of database and modelling frameworks that integrate Grain & Graze research activities.	Database contracts in place for national collation of grain and graze research data collected across the country.
Continuation of the national extension framework building on existing partner efforts, targeted towards the mixed farming sector.	Change-on farm Strategy in place with National Extension Forum held. Local launches held in all regions to promote the program to the farming community, with good attendance and interest at all. National Regional and Science Forums held bringing together on-farm practitioners, catchment managers, researchers and policy interests.

Collaborations

Program partners
Grains R&D Corporation, Meat & Livestock Australia, Australian Wool Innovation Limited, Land & Water Australia.

Project Partners
CSIRO Plant Industry, Charles Sturt University, University of Adelaide, NSW Department of Primary Industries, Department of Agriculture WA, Department of Primary Industries & Resources SA, SA Research & Development Institute, Murrumbidgee Catchment Management Authority, Northern Agricultural Catchments Council, Farmlink Research Limited, Evergreen Farming, Liebe Group, Mingenew-Irwin Group, Victoria Plains Landcare Management Committee, Eyre Peninsula Agricultural Research Foundation, Queensland Murray Darling Committee Inc.

Managing Climate Variability (MCV)

The program aims to deliver improved climate risk management to farmers and natural resource managers through R&D and outputs which lead to:

- increased adoption in regions and industries,
- increased adoption in water and NRM, and
- improved accuracy of forecasts at longer lead times.

In 2004-05 MCV invested $1.3m of which $0.2m comprised Land & Water Australia funds. The program will invest $6.6 million during the next three years.

Managing Climate Variability Program: Performance against planned outputs in 2004-05

Planned outputs	Achieved outputs
Continued development of climate variability tools for catchment management groups, primary producers and water managers.	Rainman evaluation completed. Climate trends analysed *(see highlights p8).* MCV co-supported the Farming Profitably in a Changing Climate Workshop with Bureau of Rural Sciences and the Australian Greenhouse Office, with over 50 participants from across the rural sector participating. Development of a set of new projects was initiated seeking to accelerate the uptake of seasonal climate forecasting tools by farmers and resource managers was initiated to invest additional funds from the Natural Heritage Trust which was announced in June 2004. New South-East Australia Climate Initiative established *(see highlights p8).*
Development of a national climate monitoring and evaluation framework.	National climate monitoring and evaluation framework has not been progressed.

Collaborations
Grains R&D Corporation; Australian Government Department of Agriculture, Fisheries and Forestry; Sugar R&D Corporation; Rural Industries R&D Corporation; Dairy Australia; Meat and Livestock Australia; Australian Wool Innovation Ltd; National Farmers' Federation and Land & Water Australia.

SGSL GROWER NETWORK SITES

SA Wool grower Malcolm Schaefer hosts a field day for visiting producers involved in the Sustainable Grazing on Saline Land sub-program.

There are over 1200 woolgrowers working together in 120 Sustainable Grazing on Saline Land Grower network sites around the country. Each site is looking at a locally relevant issue on managing saline land. Management and measurements are the responsibility of the group, with assistance from a local project officer.

At the site on Malcolm Schaefer's place on Kangaroo Island (pictured hosting a field day for farmers from the south east of SA), a trial is being run comparing set stocking of tall wheat grass and puccinellia pastures with rotational grazing. Early results have indicated worm burden problems arising on the rotationally grazed site.

When asked about his enthusiasm for the project Malcolm said " ...this is the first time anyone has asked me what I'm interested in. That's the great thing about SGSL – its looking at questions I want answers to."

Land, Water & Wool

Land, Water & Wool (LWW) is a national research, development and extension program providing wool producers with practical tools for the sustainable and profitable management of natural resources.

Over 1300 woolgrowers are directly involved in the LWW program. They are trialling productive options for the management of saline land; investigating how productive management of native vegetation can deliver profit and biodiversity goals; and using innovative techniques to manage riparian paddocks for production, enhanced water quality and river health outcomes. Land, Water & Wool's strong partnership and collaborative approach has attracted considerable co-investment from universities, research organisations, government agencies and woolgrower groups.

Land, Water & Wool is working closely with Land & Water Australia and Australian Wool Innovation Limited Programs. This approach will significantly increase the value and longevity of LWW program outputs and outcomes beyond its five-year life.

In 2004-05 an investment of $3.6 million was made by Australian Wool Innovation Limited and third parties.

Key outcomes from Land Water & Wool in 2004-05 were:

- Government and industry recognition that the wool industry (and AWI with Land & Water Australia) is addressing its NRM responsibilities;
- Greater awareness of NRM as a key industry issue by woolgrowers and advisers;
- Engagement of woolgrowers in developing practical and profitable solutions to NRM farm management practices; and
- A better knowledge base to help growers tackle NRM issues productively based on initial results from LWW research.

Land, Water & Wool Program: Performance against planned outputs in 2004-05

Planned outputs	Achieved outputs
Technical guidelines on key Natural Resource Management issues to support the Productive Resource Management Toolkit. For example, Saltland Pastures Book, Guidelines for Native Vegetation Management and Riparian Management	Eighteen new publications were produced, mostly in the form of management guides, fact sheets and case studies. A total of 5,658 published products were distributed, over 40,000 hits were recorded on the LWW website and 23,000 files downloaded from when the site went live on 9th May until 30 June 2005. The influence of the program goes far beyond the 1300 woolgrowers directly involved. Specific products included: *Saltland Pastures* book; draft Rivers Guides for High Rainfall and Wheat Sheep Zones; draft Tasmanian native vegetation guides, draft guide books for managing seasonal risk for South Australia and western NSW.
A small team of part-time Productive Resource Management (PRM) personnel to support delivery of PRM Toolkit and enhance uptake among grower groups.	After market testing the Productive Resource Management Toolkit approach, an alternative delivery project was developed. This included the appointment of a delivery coordinator to work with project leaders on identification of target markets and delivery products.
SGSL networks in WA, SA, Vic and NSW in place with grower groups undertaking activities.	There are 120 groups involving around 1200 farmers developing Sustainable Grazing on Saline Land demonstration sites. The program has forged strong links with extension programs including Bestwool 2010 (Vic), 8x5 (Tas), Look at Wool (SA) and Bestprac. LWW is also working with a number of Landcare and regionally based woolgrower groups.
Research project and demonstration sites in place, with local field days and activities planned to engage grower community.	An extensive research program is in place into productive management of saline lands, native vegetation and biodiversity, rivers and water quality, climate variability and pastoral country. A major scenario planning exercise for the wool industry entitled "Future Woolscapes - what might the world and the wool industry look like in 2030?" was completed *(see highlights p16)*.
An advocates program creating opportunities for grower leaders in NRM to share their experience with other growers and to promote the value of LWW.	A series of case study publications were produced in salinity, rivers and native vegetation programs. The role of the Sustainable Wool Advisory Group (SWAG) was strengthened. Successful nomination of SWAG Chair Tom Dunbabin for McKell Medal. Investigation of the operational usefulness of seasonal risk assessment techniques, among several hundred co-operators in the Land Water & Wool climate sub-program, has shown varying degrees of "skill" in different zones at different times of the year.
Collaborations	
Program Level Partners Australian Wool Innovation Limited Land & Water Australia.	
Major Sub-program level partners include: CRC for Plant Based Management of Dryland Salinity Meat and Livestock Australia	

R&D ARENA:

MANAGING AUSTRALIAN RIVER LANDSCAPES

This Arena funds and manages research towards continual improvement in the management of Australia's rivers. Its objectives are to:

- broker new river research programs and activities, particularly integrating knowledge and skills across disciplines and organisations, and establishing strategic links between scientists and managers;
- establish capacity building and training activities that will assist development of successful strategies and methods in river rehabilitation and protection;
- be a source of information on river management and a provider of knowledge exchange services to members; and
- be a leader in development and implementation of large-scale R&D protection and restoration methodologies.

During 2004–05, projects under the National Rivers Consortium, National Riparian Lands Program and National River Contaminants Program entered their final year. Projects have already begun to report and several have guided the development of two new five-year programs, Tropical Rivers and Environmental Water Allocation.

National Program for Sustainable Irrigation (NPSI)

The National Program for Sustainable Irrigation focuses research on the development and adoption of sustainable irrigation practices in Australian agriculture. The program aims to address critical emerging environmental management issues, while generating long-term economic and social benefits that ensure irrigation has a viable future.

In 2004-05 NPSI invested $3.3 million of which $0.6m comprised Land & Water Australia funds. Over the life of NPSI there is a planned total investment of $13.5 million, comprising $7.9 million cash and third party contributions of $5.6 million.

The lower reaches of the Daly River, NT.

National Program for Sustainable Irrigation: Performance against planned outputs in 2004-05

Planned outputs	Achieved outputs
Knowledge of change process and water use efficiency (WUE) opportunities widely promoted.	*Irrigation Insights 1 Second Edition* on Soil Water Monitoring released by Minister Truss at the Irrigation Association of Australia conference. This publication is a comprehensive package of information about current techniques and all equipment for monitoring soil water status. *Irrigation Research 1993 - 2004* CD-Rom, the fourth collation of irrigation research under the NPSI. Interactive Knowledge Base, housing over ten years of irrigation research and development available online. Methodology to assess whole-of-system water use efficiencies and apply the methodology to selected river valleys in NSW completed. *Three Dimensional Water Flow and Salt Storage Including Root Zone Salinity* report completed. Improving plants' water use efficiency & potential impacts from soil structure change report completed. *Common Hydro-Geological features in Australian Irrigation Areas* report completed and released. *Open Hydroponics: Risks and Opportunities* report completed. *Evaporation from Farm Dams* scoping report completed and released.
Catchment wide improvements through commodity groups continuously improving practice.	Changing Irrigation systems and management in the Harvey Irrigation Area report completed. "Sharing Landscapes" Concept & Project Scoping completed. Smart Systems & System Harmonisation scoping report completed and released. An irrigation futures project for the Goulburn Broken catchment has developed a set of community Values and Aspirations, external drivers and Super-Scenarios.

Collaborations

Department of Agriculture, Fisheries and Forestry/Natural Heritage Trust; Department of Natural Resources and Mines, Queensland; Department of Primary Industries & Resources, South Australia; Department of Environment, Western Australia; Department of Agriculture, Western Australia; Cotton Research and Development Corporation; Horticulture Australia; Goulburn-Murray Water, Victoria; Harvey Water, Western Australia; Lower Murray Water Authority, Victoria; Sunwater, Queensland; Ord Irrigation Cooperative, Western Australia.

Project Partners: There is substantial cash and in-kind investment in NPSI projects from a range of research, university, commodity, private sector and government institutions. Some of these include Murray-Darling Basin Commission, Dairy Australia, Cotton CRC, Australian National Committee and Irrigation and Drainage, Goulburn Broken Catchment Authority.

National Rivers Consortium (NRC)

The *National Rivers Consortium*[1] (NRC) is a strategic collaboration between policy makers, river managers and scientists aiming to: protect rivers with retained natural values; restore degraded rivers; train river managers; turn research into practical river management solutions; and undertake regional and catchment demonstration projects.

In 2004-05 the NRC invested $1.6 million of which $0.9m comprised Land & Water Australia funds.

National Rivers Consortium: Performance against planned outputs in 2004-05

Planned outputs	Achieved outputs
Provide regional NRM bodies with the latest knowledge to support regional river protection and restoration.	Catchment tools project completed that provided support to Murrumbidgee, Goulburn-Broken and Mt Lofty Ranges regions. Post-graduate Certificate Course in River Restoration and Management established *(see highlights p18).*
Agree on appropriate processes for protecting rivers and river reaches of high conservation value	Project completed by Dr Richard Kinsgford outlining methods and approaches for the Protection of Rivers, River Reaches, and Estuaries of High Conservation Value.
Provide NRM managers in northern Australia with access to the latest spatial data on land and water condition	Tropical rivers data audit project completed and report published. Tropical rivers asset and risk assessment project well advanced. Torbay catchment project completed in WA that demonstrates a whole of catchment restoration approach.
Demonstrate the value of large scale river restoration projects	Project completed in partnership with three catchment management authorities to determine river restoration and management priorities, utilising sediment and riparian habitat modelling, and realistic investment scenarios. Final report completed on proposed methodology for assessing the health of rivers in the Lake Eyre Basin *(see highlights p9)*. New methods developed to evaluate the health of ephemeral rivers, incorporating field based case studies in the Mount Lofty Ranges, SA. New project established to develop operational methodologies to determine the environmental water requirements of groundwater dependent ecosystems.
Collaborations	
Land & Water Australia CSIRO Land and Water Dept. of Environment (WA) NSW Department of Infrastructure, Planning and Natural Resources SA Catchment and Water Management Boards	

[1] *http://www.rivers.gov.au/research/nrc*

National River Contaminants Program

The *National River Contaminants Program*[2] (NRCP) aims to contribute to healthy river systems by reducing the ecological impact of land-sourced river contaminants (primarily salinity, sediments and nutrients). It provides practical technical information to directly support river management at the national and catchment scales, focussing particularly on the impacts of contaminants on ecosystem processes.

In 2004-05 NRCP invested $0.9 million of which $0.6m was by Land & Water Australia. Over the life of NRCP there is a total cash investment of $3 million, shared equally between Land & Water Australia and the Murray Darling Basin Commission.

National River Contaminants Program: Performance against planned outputs in 2004-05

Planned outputs	Achieved outputs
Develop and apply tools for assessing the sources and management of sediment, salt and nutrients across regional catchments	Development of risk-based models to link catchment river contaminant targets with improved ecological outcomes. Project has the potential to provide Catchment Management Authorities with a powerful decision support tool. Project completed that developed nitrogen, phosphorus and sediment budgets for the Murrumbidgee, Brisbane, Latrobe and Johnstone Rivers and catchments. New understanding developed for in-stream and riparian zone nitrogen dynamics, including field experiments to test carbon and nitrogen cycling models.
Demonstrate appropriate fertiliser application rates in a range of farming systems to maximise production and minimise downstream losses of nutrients	The **'Better Fertiliser Decisions'** project is providing regionally specific and scientifically validated fertiliser production responses for various pasture types, climatic zones and soil conditions *(see highlights p15).*
Provide knowledge on the salinity tolerance of aquatic organisms	Salt sensitivity database available on www.rivers.gov.au website. Improved knowledge gained about the salinity tolerance of a range of species in field and laboratory experiments, and a management tool being developed to predict biodiversity loss due to salinity.
Collaborations	
Land & Water Australia Murray-Darling Basin Commission	

[2] *http://www.rivers.gov.au/research/contaminants/index.htm*

Environmental Water Allocation Program

A new R&D investment in environmental water allocation (EWA) has recently commenced following an extensive international review and analysis of this issue. The research themes are:

1. Demonstrating, monitoring and evaluating the benefits of environmental allocations to be made for the River Murray.
2. Research into the needs and management of environmental water allocation in poorly understood aquatic ecosystems across Australia.
3. Research into holistic water budgets of complete river systems that encapsulate the current temporal and spatial patterns of water distribution in regional catchments and the probable changes to water availability with future land use and climate change.
4. Research into the economic, social and institutional aspects of water reform aimed at more sustainable use of water in rural Australia in the future.

In 2004-05 the Environmental Water Allocation Program invested $0.4 million of which $0.1m comprised Land & Water Australia funds.

Environmental Water Allocation Program: Performance against planned outputs in 2004-05

Planned outputs	Achieved outputs
Demonstrate the environmental outcomes achieved from specific environmental flow allocations	Round one call for proposals completed, with projects approved to assess: • Water use across a catchment and effects on estuarine health and productivity • Water regime dependence of fish in the wet-dry tropics • Natural Resource 'Buy-Backs' and Their Use To Secure Environmental Flows
Collaborations	
Land & Water Australia Murray-Darling Basin Commission Department of Agriculture, Fisheries and Forestry Department of the Environment & Heritage	

Tropical Rivers Program

Land & Water Australia has also recently scoped the R&D needs for northern Australian rivers, with a strong emphasis on riverine protection (including floodplains, wetlands and estuaries) and indigenous management. The rivers of northern Australia have had relatively little research and are likely to come under increasing development pressure over coming decades. It will be critical not to repeat the mistakes of the south in developing water resources in northern Australia.

The R&D themes of the Tropical Rivers Program (TRP) are:

- Improving knowledge for determining management priorities and evaluating land use practices
- Informing strategic approaches to resource management
- Supporting indigenous management
- Developing an integrated approach to river assessment.

In 2004-05 the Tropical Rivers Program invested $0.01 million.

Tropical Rivers Program: Performance against planned outputs in 2004-05

Planned outputs	Achieved outputs
Establish new program focused on river management in tropical Australia	Tropical Rivers Program Plan 2005-2010 published *(see highlights p9)*. Nine projects commenced to: • Assess the status of existing data and information on Tropical Rivers • Develop conceptual models of ecosystem processes • Survey fish species • Define indigenous cultural values of water Outputs from these projects formed the basis for a research call in October 2005.
Collaborations	
Land & Water Australia Department of Agriculture, Fisheries and Forestry Department of the Environment & Heritage	

National Riparian Lands R&D Program

The *National Riparian Lands Program*[3] (NRLP) aims to assist communities to implement, monitor and evaluate practices for ecologically and economically sound management of riparian lands. The program is currently focussing on eleven key issues identified through extensive consultation, including: stream bank stabilisation, trapping of sediments and nutrients in riparian zones, re-introduction of large woody debris to support biodiversity, and management of domestic stock and feral animals. This program has produced world-leading knowledge products (interactive CD-Roms, technical guidelines, factsheets and the very popular RIPRAP magazine) for managing riparian lands and rehabilitating degraded rivers (see www.rivers.gov.au).

In 2004-05 the Program invested $0.6 million in Land & Water Australia funds.

National Riparian Lands R&D Program: Performance against planned outputs in 2004-05

Planned outputs	Achieved outputs
Complete knowledge generation on management of erosion, habitat and water quality in riparian lands	Final reports for all projects funded under riparian program were submitted by 30 June 2005.
Translate complex science into innovative, relevant and useful products for people to apply on-farm and in-the-river, including produce guidelines for stock management, large woody debris restoration, and appropriate width of riparian lands	During 2004–05 the Program produced the following outputs designed to assist landholders better manage their riparian areas: • New fact sheets on Ecosystem Services and Managing Riparian Widths to Achieve Multiple Objectives. • 3 RipRaps produced covering: *Tools and Techniques for River Management; Connecting Communities; and Tropical Rivers.* • Rivers Research Reports 2004 CD produced with all guidelines, manuals, CDs, and interactive web-based tools freely available. • Tool for rapid appraisal of riparian condition assessment available on the web and in hard copy for temperate and tropical environments. • Synthesis publication on *Managing Stock in Riparian Areas* under production – this will be using science undertaken in the Program as well as practical advice from farmers about managing stock.

[3] *http://www.rivers.gov.au/research/rlrd/*

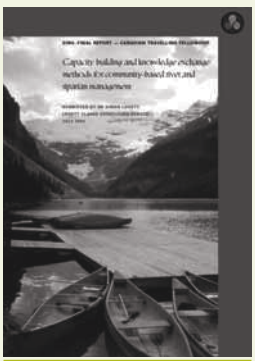
Translate complex science into innovative, relevant and useful products for people to apply on-farm and in-the-river, including produce guidelines for stock management, large woody debris restoration, and appropriate width of riparian lands cont.	• Upgrade and expansion of Assessing Community Capacity tool so that it can be run off the web and also made freely available in a CD format. • Assessment of capacity building and knowledge exchange techniques being used in Canada and information about applying them in Australia. Full report available on the www.rivers.gov.au website with summaries provided in RipRap and Landcare magazines. • Presentations at Riversfestival, Stream Management Conference and the National Waterwatch Conference on Canadian findings and how they are being used to manage research and knowledge exchange aspects of the Program differently. Regional workshops being planned to communicate research findings and teach people how to use the range of tools being developed through the Program (Rapid Appraisal of Riparian Condition, Assessing Community Capacity, Flood Hazard Prediction, Stream Roughness Coefficients)

CONNECTING COMMUNITIES - LEARNING FROM CANADA

In 2004 Dr Siwan Lovett, Program Coordinator of the National Riparian Lands R&D Program undertook a Land & Water Australia traveling fellowship to examine Canadian approaches to capacity building and knowledge exchange.

Siwan discovered that Canada's strengths are in engaging communities, initiating action, celebrating, and using art, culture, history and drama as ways of 'knowing' a river. In Australia, Siwan believes we may need to rethink some of the technically based demands we are placing on community groups, and replace that with ways to celebrate and encourage involvement at a range of different levels.

A valuable place to start would be exploring ideas around different ways of 'knowing' a river and try to place an equal value on 'scientific' and 'experiential' knowledge in our decision making processes.



R&D ARENA:

MANAGING VEGETATION IN RURAL LANDSCAPES

Native vegetation performs an essential role in delivering ecosystem services that underpin the productivity and sustainability of rural industries. It is also one of the key management 'levers' for intervening in natural ecosystems to achieve specific objectives such as managing salinity, restoring riparian environments, carbon sequestration and protecting endangered species.

In many rural landscapes, native vegetation is under pressure from clearing, fragmentation, weed invasion and altered hydrological regimes. Research in this arena is generating knowledge to better understand and manage native vegetation in these landscapes. This research is addressing questions such as:

- Which are the priority vegetation areas to retain?
- Where should we put native vegetation back?
- What size, shape or locations should re-plantings be?
- How can we assess the condition of remnant vegetation?

The key strategies employed through this arena include:

- research to determine the functional values and ecosystem services provided by native vegetation over different scales;
- development and active promotion of practical guidelines, tools and methodologies to improve vegetation management at a landscape scale; and
- development of better tools and processes to measure, monitor and report on the condition of native vegetation, consistent with the National Vegetation Information System.

Native Vegetation R&D Program

This program aims to assist government agencies, community groups and landholders to better manage and conserve native vegetation and its associated biodiversity in rural landscapes. Its three key areas of R&D are: methods to assess native vegetation status, viability and thresholds for significant change; testing different landscape design principles and methods for biodiversity conservation; and incorporating native vegetation management into agricultural production systems.

The program has to date been successful in understanding the levels and causes of continued degradation of native vegetation and in developing practical methods of reversing these trends. Notable outputs include understanding the biodiversity values of remnants within plantation landscapes and plantations themselves, principles for grazing remnants, farmers' perceptions of native vegetation, and tax incentives for conservation. Communication products such as *Thinking Bush*[4] and biodiversity guidelines for the cattle industry released in *Prograzier* (published by Meat & Livestock Australia) are ensuring important messages are reaching target audiences.

In 2004-05 the Program invested $0.8 million comprising $0.7m in Land & Water Australia funds.

Native Vegetation R&D Program: Performance against planned outputs in 2004-05

Planned outputs	Achieved outputs
Mid-term review of the Native Vegetation Program completed	The mid-term review of program was completed and found the program to be on-track against its objectives.
Strategic analysis of the future directions of the program completed	Strategic analysis completed and prospectus and R&D Plan for new Native Vegetation and Biodiversity Program 2005-2010 approved by Land & Water Australia Board in December 2004.

[4] *http://www.lwa.gov.au/downloads/PN30455.pdf*

Research from program effectively promoted	Communications Plan written and being implemented. Program researchers and outputs continue to have a high profile in public arena. *New understanding* Publication of comprehensive review of the status and value of paddock trees in Australia. Evidence that land condition monitoring as typically assessed in Australian savannas and rangelands is not sufficient to monitor the status of biodiversity, but that improvements in land condition in rangelands are likely to have positive effects on biodiversity *New tools and guidelines* New methods for determining critical regional-scale habitat fragmentation thresholds *(see highlights p10).* An efficient, reliable technique for large-scale census of scattered trees, using digital analysis of aerial photography, to determine rates of paddock tree loss in agricultural regions. New guidelines for determining and protecting paddock trees of high ecological value have been developed *(see highlights p11).* New understanding regarding the limitations to using the focal species approach to landscape restoration. Development of a novel GIS based modelling methods to identify meta populations of 31 species of declining birds and to assess the habitat/conservation value of 54000 remnants in the WA central wheatbelt. A more rigorous scientific basis to seed collection guidelines for revegetation activities based on genetic and population studies *(see highlights p11)*.

Collaborations
Land & Water Australia CSIRO Sustainable Ecosystems CSIRO Plant Industries Murray–Darling Basin Commission

Joint Venture Agroforestry Program

The Joint Venture Agroforestry Program (JVAP), managed by the Rural Industries RDC, is seeking to diversify and increase farm income in more sustainable ways through the development of new land use systems based on woody perennials.

JVAP has produced an impressive list of Agroforestry guidelines which are in high demand.

In 2004-05 JVAP invested a total of $1.4m, of which $0.15 million was provided by Land & Water Australia.

*Joint Venture Agroforestry Program: Performance against planned outputs in 2004-05**

Planned outputs	Achieved outputs
Designs investigated for public-private investment partnerships for regional agroforestry	Comprehensive literature review and scoping study completed to consider public-private investment arrangements and their feasibility.
Models prepared for sustainable production of salt-tolerant eucalypt hybrids on saline discharge sites	Models being finalised to model growth performance of salt tolerant eucalypt hybrids on several sites.
1,8-cineole bioderivatives evaluated for pharmaceutical and chemical applications	A range of species analysed for concentration of sideroxylonal and results indicate strong correlation with 1,8-cineole. Further work on extraction methods now commencing. A range of chemical structures derived from 1,8-cineole have had preliminary tests for industrial chemical applications.
Improved tree selections and productive seed orchards established by the Australian Low Rainfall Tree Improvement Group for key low rainfall species.	Seed orchards established in four southern states for several key low rainfall species. Updated hardwood breeding strategy and new softwood breeding strategy for low rainfall pines completed. Genetic variation in two key low rainfall eucalypt species analysed and used to assist analyses of seed orchard performance and selections.
Wood quality and growth analysed from key tropical cabinet timber species	Growth measured in northern NSW, SE Queensland and north Queensland for several key tropical cabinet timber species reported in "*Reforestation in the tropics and subtropics of Australia using rainforest tree species*". Sawing studies conducted on African mahogany in NT and improved drying schedules developed. African mahogany is termite resistant and shows some promise for plantations in NT. Wood cores and logs currently being analysed for five rainforest species sampled in Queensland.
Markets for environmental services tested for several case studies	A range of trading mechanisms assessed for several case studies including tree planting to offset salt damage to roads and to minimise irrigation leakage in the Murrumbidgee Irrigation Area.
Farm forestry growth data delivered to landholders via regional workshops in several projects	The manual "*Growing Rainforest Timber Trees*" provides practical guidance for people wishing to establish farm forestry projects and it has been used in field courses in northern NSW and Queensland. Also, Greening Australia and Department of Primary Industries and Fisheries (Qld) have worked with extension officers and land holders to measure farm forestry growth and deliver data to land holders via local workshops.
Collaborations	
Land & Water Australia Forest and Wood Products Research and Development Corporation, Rural Industries Research and Development Corporation, Murray–Darling Basin Commission	

** The ouputs reflect the Program as delivered by the managing agency, the Rural Industries Research and Development Corporation.*

R&D ARENA:

FUTURE LANDSCAPES AND COMPATIBLE INDUSTRIES

This Arena sought to improve the understanding of, and potential for, long-term sustainability of rural landscapes, with a time frame of ten to one hundred years. Several successful outcomes were achieved, including:

- Development of future landscape scenarios to 2050
- Establishment of an inter-governmental scanning panel
- An exhaustive analysis of drivers of future change
- Several innovative R&D projects.

Following a review of the Arena and the development of the new Strategic R&D Plan (2005-2010), the Board decided not to continue investment in a small Future Landscapes Arena per se. However futures thinking and methods will continue to be used across the R&D portfolio and in strategic analysis and planning. For efficiency reasons, contracted projects were transferred to other Land & Water Australia arenas.

Investment in this Arena during 2004-05 was $0.014m in Land & Water Australia funds.

Future Landscapes Program: Performance against planned outputs in 2004-05

Planned outputs	Achieved outputs
Mid-term review completed	The review identified the following achievements: • completion of a detailed meta-analysis of futures studies, forming the basis for thinking and discussion about the future of Australian landscapes, livelihoods and lifestyles among Land & Water Australia staff and stakeholders; • establishment of four high quality research projects directly addressing issues identified as future priorities by futures analysis; • identification and bringing together of a select group of researchers to develop one or more proposals for investigating implications of peri-urban development in the future; • improved awareness of approaches to strategic thinking among staff; • major contributions to scoping of the new SIRP program and to Future Woolscapes; • emergence of ideas and fledgling processes for embedding futures thinking within the organisation; • recommendations on research priorities to the Board and the Strategic Planning Team, that involved all staff in various roles; • increased awareness of Land & Water Australia's commitment to future thinking through a broad range of public presentations; • involvement of Land & Water Australia in the worldwide Millennium Ecosystem Assessment and embedding of the thinking of over 600 of the world's leading scientists into Land & Water Australia's future thinking.

Publication of Occasional Paper "Future challenges for NRM in Australia"	Futures paper launched 28 June *(see highlights p12).*
Research results from projects	A computer system linking geographic information systems, virtual reality technology and personal digital assistants to be used in community workshops to envision and evaluate alternative futures *(see highlights p17)*. More appropriate management of soil-applied nutrients and chemicals in natural and managed land in the wet tropics can be achieved by improving our understanding of the water and nutrient fluxes.
Futures Speakers program	Graham Molitor, Vice-President of the World Future Society and Dr Elizabeth Sahtouris, author, evolution biologist, futurist and UN consultant.
Promotion of recommendations for new research arising from RAAL program	Not achieved
Environmental scanning process to assemble information on drivers of future change	An inter-departmental scanning group with participation from New Zealand was successfully established and provides reports to CEOs.
Publication of scenarios for future Australia landscapes	8 scenarios based on a unique paradigm analysis were completed.
Collaborations	
Department of Agriculture, Fisheries and Forestry Bureau of Rural Sciences Geoscience Australia CSIRO	

R&D ARENA:

CROSS-CUTTING ACTIVITIES

The cross-cutting arena incorporated two major R&D programs, the Social and Institutional Research Program (SIRP) and the Ord-Bonaparte Program (OBP), the General/Innovation Call, the Scholars Call, Travelling & Visiting Fellowships and a new Senior Research Fellows program. The Arena also supported processes and outputs that help people to share information and work in a more integrated way across program and issue boundaries. In reporting on expenditure above, the National Land & Water Resources Audit was included under the Arena, however it is described separately below in pages 49 to 52.

Following agreement between the collaborating parties to the Ord-Bonaparte Program (OBP) after a Mid-Term Review undertaken in 2003-04, steps were taken during this year to wind down the program.

Social & Institutional Research Program

During the year an extensive program of consultation was undertaken to develop a new Social and Institutional Research Program to span 5 years, 2005-10. This was adopted by the Land & Water Australia Board along with a 5 year budget in December 2004 for implementation from 1 July 2005. The new program strategy has three themes as documented in the publication *"Making the Connections":*

- Institutions and governance arrangements;
- Policy instrument choice;
- Landscapes, lifestyles and livelihoods.

A number of strategic entry projects and collaborations for the new strategy were developed and initiated during the year, in particular:

- Practice change in regional NRM groups
- Town and country interactions in peri-urban areas
- Monitoring and evaluating the social dimensions of the NHT and NAP, and
- Assessment of social and economic values of Australia's tropical rivers

Investment in the SIRP program during 2004-05 was $1.3 million, made up of $1.2 million from Land & Water Australia and $0.1 million from collaborating partners.

Social and Institutional Research Program: Performance against planned outputs in 2004-05

Planned outputs	Achieved outputs
Local governments Australia-wide assisted to use NLWRA products	National interviews completed and survey data collected. Published article in *International Journal of Innovation and Sustainable Development* Collaboration with RIRDC in joint project to ensure better coordination with local government research.
Guidelines for linking research to policy	Published and distributed *Research Meets Policy* booklet *(see highlights p14)*.
Publication of Integration Symposium proceedings and a supplement in refereed journal	*Integration Symposium* CD completed and distributed. Journal publications well underway, papers refereed.
Ongoing research from program effectively promoted through a variety of formats	Achieved, including: Web, email bulletin, reports, DEH briefing, seminars, publications, fact sheets, policy sheets

Initiation of two strategic partnership-based projects	More than two strategic partnership based projects initiated: 1. A framework for Monitoring and evaluating the social foundations of regional NRM programs (NHT) 2. Making Successful Investments in NRM Practice Change (DAFF, DEH) 3. Change and Continuity in Peri Urban Australia (DEH) 4. Assessment of Social & Economic Values of Australia's Tropical Rivers (internal partnership with Tropical Rivers) 5. Cooperative Venture for Capacity Building (RDCs, managed by RIRDC)
Extension of research in indigenous NRM research	East Kimberley Pastoral project (continuing from Ord-Bonaparte Program) well underway. Coordination of Land & Water Australia's Indigenous focused projects though forum and discussion paper.
Development of a specialist social science advisory service for internal and external research programs	Advisory service establishment has been initiated.
Provision of expert social and economic advice to national policy and program initiatives	Facilitation of social and institutional expert advice for NHT and NAP. Scoping of social and institutional research priorities workshop for the National Water Initiative. Providing policy briefings.
Development of Program Plan 2005- 2010	Completed SIRP Plan - Making the Connections approved by Board, published and in use. The plan will be implemented from 1 July 2005, with a 5-year total budget of $7m focused on the following themes: Institutions and governance arrangements; Policy instrument choice; Landscapes, lifestyles and livelihoods.
Ord-Bonaparte Program effectively wound up.	Completed existing projects and their publication, such as, "Aboriginal management and planning for country: respecting and sharing traditional knowledge" Negotiations among participating agencies to transfer of custodianship of the project regional NRM data base to an appropriate state agency. Establishment of a new significant project in the region titled "Integrated natural and cultural resources management in the East Kimberley".
Collaborations	
Department of Environment and Heritage Department of Agriculture, Fisheries and Forestry	

ENGAGING STAKEHOLDERS IN REGIONAL NRM PRACTICE CHANGE

Learning to recognise change is critical in natural resource management. We will only know if our work is effective if we monitor how people are feeling, what their attitudes are, and how they are changing over time. A system which helps not only the regional groups to learn how to track change, but also helps land managers to track their own change, is a critical investment.

Four regional groups, North East Victoria, Southern Gulf in far north Queensland, Swan in Western Australia and Southern Rivers in New South Wales are involved in a project which will allow "producer" knowledge to emerge and sit with "scientific" knowledge, so the two types of knowledge can inform each other.

We have the capacity to create something that is greater than the sum of the two parts, if we can create processes that allow the bridging to occur in ways that challenge, yet respect the holders of knowledge. The project is helping the regions to learn about change by monitoring progress and adapting their strategies based on what the monitoring is telling them.

This joint project between the Australian Government and Land & Water Australia will disseminate the lessons from the four regions to all 56 regions in Australia.

Mt Gordon board meeting May 05

Gregory River - Riversleigh Station, QLD

General Call/Innovation Call

During 2004-05 the annual General Call for R&D projects was transformed to an Innovation Call, in line with the new 2005-2010 Strategic R&D Plan. In so doing, Land & Water Australia sought to improve its capture of high innovation projects from the R&D community, whilst at the same time encouraging researchers to pursue lateral ideas. The Innovation Call sought projects *"actively pursuing genuine new ideas, concepts, technologies, processes and/or creative ways of utilising existing knowledge and generating new knowledge and/or innovative technologies to improve the sustainability of Australia's rural landscapes and industries including:*

- Drawing out the most innovative ideas from the R&D community
- Responding to new and emerging issues and opportunities
- "Blue sky" and fundamental research
- Lateral and out-of-the-box concepts
- Testing proof-of-concept ideas and feasibility studies.

In 2004-05 the first Innovation Call selected seven high innovation projects for funding and invested $0.4 million provided by Land & Water Australia.

Innovation call: Performance against planned outputs in 2004-05

Planned outputs	Achieved outputs
Priority issues and innovative approaches annually identified and funded	Priority issues were not prescribed; rather the research community was requested to identify highly innovative projects within the Land & Water Australia scope. Seven highly innovative projects were selected from a field of 213 applications.

Scholarships & Fellowships

Masters and PhD scholarships and Travelling (Australian researchers going overseas) and Visiting (international researchers visiting Australia) Fellowships are designed to build skills and research capacity in NRM. A significant new approach to R&D funding was commenced in 2004-05 via the establishment of the Senior Research Fellows program (see highlights). Early indications suggest this will provide substantial dividends for Australia.

In 2004-05 Land & Water Australia invested $0.4 million in its Scholarships and Fellowships programs.

Scholarships & Fellowships: Performance against planned outputs in 2004-05

Planned outputs	Achieved outputs
Provision of post-graduate scholarships, travelling and visiting fellowships and community fellowships, and national R&D capacity enhanced through new young scientists in NRM	4 post-graduate PhD scholarships funded 7 Travelling and Visiting Fellowships funded 3 Senior Research Fellowships funded

OPERATIONAL REPORTING FOR THE NATIONAL LAND & WATER RESOURCES AUDIT

The Audit provides data, information and nationwide assessments of Australia's land, water and biological resources to support sustainable development. It is a project of the Natural Heritage Trust.

The Natural Heritage Trust Board continued to approve Audit activity with the following focus:

- *Co-ordinate and foster the collection and collation of data and information as a basis for reporting on national natural resource management indicators,*
- *Promote the development of linked natural resource management data and information systems,*
- *Facilitate the on-going collection, collation, integration and management of data and information that will inform natural resource management decision making,*
- *Develop partnerships and linkages across government, industry and regional organisations to improve the knowledge of the impact of the productive use of natural resources on the environmental, social and economic aspects of the Australian landscape.*

This will allow the Audit to:

- assist in the identification of natural resource management priorities; and
- allow the progress of natural resource management investments to be assessed through the development and maintenance of accurate, cost-effective and timely data and information on the nation's natural resources.

A particular focus of Audit activity is the collation of information underpinning the monitoring and evaluation needs of the Natural Resource Management Ministerial Council.

The Audit is co-located with Land & Water Australia, which continues to provide administrative support to the Audit Management Unit. Co-location promotes interaction between the Audit and the Corporation's R&D programs.

Revenue received during 2004–05 was $3.3 million including specific contract funding.

Partners

The Audit Advisory Council has representation from the Australian Government, all States, ACT and the Northern Territory, CSIRO, the Australian Bureau of Statistics and ANZLIC — the Spatial Information Council. Land & Water Australia and the State of Environment 2006 have observer status at Council meetings.

Activity and Achievements

Audit achievements in 2004-2005 include, by Strategic Direction:

Strategic Direction 1: Monitoring and Integrated Reporting

Testing the M and E Framework

- Roles and Responsibilities;
  - Revised MoU with Australian Government as a result of a clarification of responsibilities between the Natural Resources Policy and Programs Committee the Audit Advisory Council and Audit Management Unit.
  - Australian Government / State / Territory / Regional interactions: The audit maintained a high presence with all jurisdictions – initiating and participating in seminars, meetings, and workshops promoting efficient collection and collation of NRM information.

- Trials within jurisdictions to test application of indicators and process for delivery of information were completed (including regional social and economic needs workshops NSW, NT). National workshops and associated reports were developed with recommendations passed to the Audit Advisory Council.
- Information needs underpinning the set of indicators of resource condition were determined.
- A national information availability assessment was commenced in partnership with all jurisdictions to determine gaps in necessary information to report on resource condition change.

Intensive Land Use Zone

- A Needs Workshop was undertaken to develop a framework to provide an integrated biophysical condition and trend report for regions and catchments in the intensive land use zone (integrated within a social and economic context).
- Projects commenced on:
  - Scoping an Australia wide catchment condition assessment
  - Developing a regional reporting framework and reporting in trial catchments
  - Providing "case studies" of existing regional integrated NRM reporting.

Executive Director of the National Land and Water Resources Audit Blair Wood pictured with the Chief Executive Officer of Landcare Australian Limited Brian Scarsbrick and Land & Water Australia Government Director Charles Willcocks.

Chairman of the National Land and Water Resources Audit Advisory Committee Geoff Gorrie with Chairman of the CRC for Plant Based Management of Dryland Salinity Kevin Goss, Ian Thompson from the Department of Agriculture, Fisheries and Forestry and Adjunct Professor, Centre for Resource and Environmental Studies, ANU, Paul Perkins.

Rangelands

- Provision of social and economic information for seven trial regions within the rangelands, as input to the on-going development of the Australian Collaborative Rangelands Information System (ACRIS).
- Information was collected and collated associated with
  - rangelands best management practice,
  - use of NRM Models, and
  - profiling of small scale agricultural enterprises.

"Signposts for Australian Agriculture"

- Developed a framework for the identification of information needs to report on the contribution of agriculture to economic, community and environmental issues.

Strategic Direction 2: Data and Information Management

Information Partnerships

- Partnership with ANZLIC to Report into the NRM Ministerial Forums on issues associated with "community" access to Natural Resources Information.

- Ongoing discussions on possible efficiencies for government to government data access and licensing arrangements for key data and information products.
- Active involvement in Australian Government Spatial Data Management Committee activities.
- Agreement for Audit/ANZLIC joint annual reporting on the "status of the natural resource data infrastructure". Developed terms of reference and report template.

Nationally linked data and information systems

- Developed "Australia's Resources Online" (ARO) reporting mechanism concept and promoted with strategic partners.
- Developed proof-of-concept pilot application in collaboration with DEH/ ERIN.
- Developed a work plan for phased development of operational ARO application as a new module of the Natural Resources Atlas.

Community Information Management

- Continued support and maintenance of "Natural Resource Information Management Toolkit".
- Developed work plan for further inclusion of regional specific information.

Maintenance and development of the Atlas and Library

- Continuing contracts with DAFF and DEH for an ongoing resourced development path for the Australian Natural Resources Atlas and the Data Library.

Strategic Direction 3: Natural Resource Information Collections

National Coordination arrangements

- Establishing the coordination framework – identifying national sponsor agencies, national coordination arrangements and clarifying reporting roles.
- The first report on a coordinating approach to data and information collections required to support the national Monitoring and Evaluation Framework.

Information Needs, Standards and Products

- Developed a National Weeds Assessment work plan for implementation during 2005-06.
- Contracts arranged for supporting the on-going development of natural resource collections (including the establishment and maintenance of national standards):
  - Soils Australian Soil Resource Information System (ASRIS)
  - Land Use Mapping, and Land Management Practice
  - Vegetation (vegetation mapping standards)
  - Social and Economic Indicator development.

Strategic Direction 4: Directions and Partnerships

Audit Advisory Council

- Audit Advisory Council met 4 times this year to advise and endorse Audit activity.
- Partnerships with States and the NT progressed with contracted projects and Audit facilitated workshops and meetings to assist in developing on-going efficient information collection.

Communication

- Audit's web site was reviewed and updated.
- Provision of information as required (based on previous Audit activity).

Direction

- Audit's Strategic Plan was endorsed by the Natural Heritage Ministerial Board.
- Papers were prepared seeking clarification of reporting activity

Administration

- Land & Water Australia service agreement to provide administrative services (including accommodation, communications advice and services).

National Land & Water Resources Audit: Performance against planned outputs in 2004-05

Planned outputs	Achieved outputs
Monitoring and Evaluation Activity	• Revised MoU with Australian Government to assist in implementing the National Monitoring and Evaluation Framework • Completion of trials of the framework in each jurisdiction • Draft report on alignment of SoE and NRM indicators • Completion of information needs analysis (underpinning the National M and E Framework • Conceptual Framework for the Signposts for Australian Agriculture Report was completed
Natural Resource Information Management	• Concept for "Natural Resources online" completed • Library and Atlas maintained
Natural Resource Information	• First Approximation, Status of Resource Information underpinning the National M and E Framework completed. • Arrangements for on-going development of natural resource information collations were agreed • Social and Economic Information reports completed for selected rangeland regions • Australian Land Use Mapping Program Launched in partnership with BRS and Jurisdictions
Partnerships	• National Coordination Committees for Audit themes (aligned with Matters for Target under the National Monitoring and Evaluation Framework) were identified and supported where possible.

CORPORATE ENABLING FUNCTIONS

Communication, Knowledge and Adoption

During 2004-05, the "Communications Team" has been transformed into the "Knowledge and Adoption" team to support the Knowledge into practice strategy of the new Strategic R&D Plan 2005-2010. The objective of this strategy is to improve the adoption of outputs of R&D.

Land & Water Australia defines 'knowledge' broadly – encompassing tacit (in people's heads) and explicit (in research reports, databases and technologies) knowledge.

We place a strong emphasis on credible, high quality scientific knowledge which is increasingly demanded in complex political decision-making and policy formulation. At the same time, where appropriate, we embrace other ways of knowing, including of the intimate landscape knowledge of farmers, resource managers and indigenous peoples. We recognise that knowledge can take many forms, including technologies, systems understanding and new insights. Translating knowledge into practice requires highly skilled processes in its own right.

During the last year the knowledge and adoption team has been changing its emphasis and skills base to ensure that we can support the organisation to successfully manage knowledge for adoption outcomes. A key achievement has been the completion of the new Knowledge and Adoption Strategy and the establishment of the NHT funded project "National Knowledge Brokering for Regional NRM".

The year has seen the team increase our Corporate links with:

- regional natural resource management organisations;
- fellow R&D Corporations and their industry stakeholders;
- Australian Government Agencies, particularly the Department of Agriculture, Fisheries and Forestry and the Department of Environment and Heritage; and
- the National Land and Water Resources Audit.

Communications/Knowledge and Adoption: Performance against planned outputs in 2004-05
Note: Several of the outputs have been amalgamated for simpler reporting

Planned outputs	Achieved outputs
The knowledge and adoption strategy successfully developed as a whole of organisation strategy.	Knowledge and Adoption Strategy developed to align with strategy 3 of the new Strategic R&D Plan – Knowledge into practice. Approved by Board 2005 *(see highlights p12).*
Increased and improved implementation of Land & Water Australia adoption and communication methods, in line with the new strategy.	The strategy has been applied to existing programs, managing the legacy of completed programs and contributing to the planning of new programs.

Value-added existing programs such as the community fellowships to contribute to adoption	The Knowledge and Adoption team is working with programs such as Managing Climate Variability to test the principles of the Corporate strategy through the development of program-level adoption strategies and implementation plans.
Rejuvenation of website to increase visits and download rates and improved availability of information online	In the first quarter of 2005 the Corporation initiated a major review of its websites, including content management, infrastructure requirements and accessibility issues. The outcome of this audit is an e-business strategy which provides a foundation for the Corporation to establish a standardised, user friendly website and intranet underpinned by one content management system. This will proceed in 2005-06 bringing about significant efficiencies in electronic publishing for Land & Water Australia.
Influence over the standard and content of program websites including content, maintenance and web strategy	During the year the National Land and Water Resources Audit website was launched as was one for the Land, Water & Wool program. The website for the National Dryland Salinity Program had a major overhaul in line with the three major synthesis documents created by the program in 2003-04.
Easy-to-use, integrated written and visual communication materials developed that meet the needs of intermediaries	Some key products in addition to those in the *Highlights*: Making economic valuation work for biodiversity conservation - This booklet was jointly produced between the Australian Government Department of Environment and Heritage and Land & Water Australia to explore the ways in which economic techniques can contribute to wise management of biodiversity. Drawing on the results of a joint national workshop which examined the issues, the booklet explores how economic techniques can be made more accessible and provides practical recommendations for economists, ecologists and policy decision-makers.
Ongoing provision of advice/servicing of program products.	Land, Water & Wool Project Guide - Australia's wool industry is one of our country's largest land-use enterprises and has been adapted to a wide range of environmental conditions. The industry has a unique role in the management of our land and water resources and is facing many environmental challenges including dryland salinity, water quality and managing native vegetation. The Land, Water & Wool program is the wool industry's largest-ever collaborative research investment in sustaining the natural resource base. The project guide offers a detailed overview of the Land, Water & Wool research portfolio, with information on progress to date in individual project and details for accessing more information.
Successful integrated science product relevant to agreed target audience	Irrigation Insight 1 (2nd edition) – Information Package on Soil Water Monitoring - Efficient irrigation relies on knowing how much moisture is already in the soil. This second edition of Irrigation Insight 1 is a comprehensive package of information about current techniques and all equipment for monitoring soil water status. Produced by the National Program for Sustainable Irrigation, the report was launched at the Irrigation Australia Conference in Townsville by the then Minister for Agriculture, Fisheries and Forestry the Hon. Warren Truss MP. *Key learnings* fact sheets for industries have been completed.

Increased profile in rural and regional Australia, particularly with regional bodies and networks	Workshops undertaken and a survey of regions to learn about information needs and barriers. Closer relationships with regional organisations such as Namoi and Corangamite and the National Landcare Facilitator Program. Strong ties developed with NRM facilitators through workshops, newsletters etc.
Maintenance of promotional profile through media and Corporate product	Regular press releases and Corporate publication Fundamentals.
Increased stakeholder satisfaction with Land & Water Australia events and presentations including increased numbers attending events	**Land & Water Australia Session at ABARE's Outlook conference** Land & Water Australia sponsored a session of the March 2005 ABARE Outlook conference with the theme "Meeting catchment targets - science and tools for natural resource management". The session featured one of our new Senior Research Fellows Rick Evans. Peter Codd from the Corangamite CMA in Victoria discussed how they were managing information and knowledge, drawing upon work jointly funded by Land & Water Australia and the Corangamite and Glenelg-Hopkins CMAs. Robyn Watts from Charles Sturt University presented tools for catchment assessment to assist regional organisations in setting river restoration priorities.
More efficient promotion across multiple mediums	**Launch of the Futures Booklet** *Future Thinking about landscapes, lifestyles and livelihoods* a new publication produced from Land & Water Australia's Future Landscapes program *(see highlights p12).* **DAFF Science and Innovation Awards for Young People in Agriculture** In Sept 2004 the DAFF Science and Innovation Awards for Young People in Agriculture, Fisheries and Forestry were announced. The winner of the Land & Water Australia sponsored award was Jeremy Hindell. Jeremy will use his award to undertake a research project titled: 'Fishing for new ways to sustain aquatic habitats' which focuses on the need for an understanding of the importance of large woody debris in the ecological functioning of river and estuarine systems.
Continue strategic role in Program communication, with an evaluation of the existing service agreements.	Service agreements evaluated – no longer appropriate. Reorganised team structure and support for programs. Examples of outputs from communications support for programs listed above. **Grain & Graze launches** After a long gestation period, on-ground activities started in the Grain & Graze program last year. The Program held a national launch at Parliament House in Canberra in September, with approximately 100 people in attendance. The launch highlighted the strength of the collaboration between the partners and generated positive media coverage. Grain & Graze also provided support for launches in each of the focus regions where the program has local partnerships in place. Seven of the regions held their launches between September 2004 and February 2005.

Seeking, trialling, evaluating and comparing methods for adoption	Draft Monitoring & Evaluation plan formulated and presented to the Board in May 2005. First trials initiated.
Increased information sharing by Land & Water Australia and other RDCs regarding monitoring and evaluation of adoption	Meeting held with members of three relevant RDCs. Continued sharing of information through collaborative industry programs and one-on-one discussions.
Increase in recognition of the role of communication and adoption in delivering our mission Streamlined communications to free up resources for adoption	**Corporate Style Guide and standardised branding** This work was undertaken to reduce the fragmentation of Land & Water Australia's branding and identity. Through a staged process the new branding will be implemented across the organisation to ensure that our publications and materials can be easily identified while maintaining recognition of the Australian Government. The multiple templates will also provide ease of use and create substantial production efficiencies.

Portfolio Management

Strategic Planning

The main activities in 2004-05 were completing the new 2005-2010 Strategic R&D Plan, completing the biennial R&D investment planning process, and launching three new R&D programs.

Preparation of the New Strategic R&D Plan commenced in 2003-04 and involved strong staff and Board inputs. In 2004-05, the plan was revised through targeted consultation with NRM leaders across governments, industries, NGOs and community groups. The plan was approved by Senator Richard Colbeck in June 2005.

Land & Water Australia has a sophisticated biennial investment planning process to identify and rank emerging issues and opportunities alongside current and planned investments. To inform this process we have been instrumental in establishing the Australasian Joint Agencies Scanning Group (seven agencies in Australia and New Zealand) which monitors and reports on emerging national and international trends. This information is combined with strategic NRM analyses, stakeholder consultations and feedback from the current portfolio to form a comprehensive list of potential R&D investments. These investment opportunities are then scored and ranked against feasibility and attractiveness criteria to form a short-list of prospective future investments. In 2004-05 a short-list of 10 R&D opportunities were derived in this way.

In launching three new R&D programs based on previous investment analyses, strong efforts were made to provide links and interactions across programs to avoid "silo" planning and implementation.

Strategic Planning: Performance against planned outputs in 2004-05

Planned outputs	Achieved outputs
New 5-year strategic plan	Completed and approved by Minister
Contextual analysis of Land & Water Australia's business environment	Completed as part of the strategic planning and summarised in the plan
3 new program plans fully developed	All completed: Native Vegetation & Biodiversity; Social & Institutional; and Tropical Rivers

Integration

The major achievement of the year was the organisation of an integration symposium which has produced valuable outputs. The integration initiative was amalgamated into the new People Arena for efficiency reasons and no longer exists as a separate line of investment.

Integration: Performance against planned outputs in 2004-05

Planned outputs	Achieved outputs
Provision of advice and support for integrated R&D design and products to programs and/or external clients	Integration symposium held, proceedings published as CD-ROM, papers consolidated into special editions of two refereed journals. *Research meets policy* booklet. Cooperative RDC venture for capacity building.
Up to 3 R&D management workshops held and appropriate outcomes implemented	Indigenous research forum in Darwin. One R&D management workshop held, enabling the full R&D team including consultant coordinators to discuss in depth the new strategic plan and work to improve the internal corporate enabling functions of Land & Water Australia.

Science Management

Science management is concerned with science quality, links to broader science policy, trends in NRM and related science areas and the innovation process. Land & Water Australia has transparent and robust processes for project selection and assessment to ensure science quality. In 2004-05 we have also made concerted efforts to link better with the national science agencies and have had discussions with the Australian Research Council, the Australian Government Department of Education, Science and Training, the Chief Scientist and the Federation of Australian Scientific and Technological Societies on areas of potential collaboration. To enhance our innovation performance the General Call for projects was converted to a call for high innovation projects in 2004-05. We also continue to document our best innovations on the Innovations Database located on our website.

Science Management: Performance against planned outputs in 2004-05

Planned outputs	Achieved outputs
Emerging issues and opportunities synthesised	162 issues were identified and processed by the Board into 10 prospective areas of future R&D investment
Australia's NRM science capacity documented and made available on a database	Methods were investigated and strong liaison with the Department of Primary Industries, Victoria led to a better understanding of the complexities involved. This work should commence in 2005-6.
New Innovation program launched	The new Innovation Arena was established and included conduct of the first Innovation Call and launch of the Senior Research fellowships

STREAM AQUIFER INTERACTION TECHNICAL AND MANAGEMENT CHALLENGES

Dr Rick Evans, right, pictured with Mr Peter Codd from the Corangamite Catchment Management Authority in Victoria and Dr Robyn Watts, Charles Sturt University, presented during a Land & Water Australia sponsored session at the Outlook Conference in 2005.

So often when we think of water resources we think of surface water resources – dams, rivers, channels. Rarely do we think of the total hydrologic cycle. We usually leave out that part which is hidden – but groundwater is everywhere, albeit out of sight, out of mind. Groundwater is effectively the sole water resource for about 75% of Australia.

The interconnection between groundwater and surface water is a poorly understood process in Australia and in much of the world. Consequently we have developed separate management systems which treat groundwater and surface water as separate resources. The often significant time lag between groundwater use in a catchment and the resulting reduced stream flow acts to cause water managers and the community in general to ignore this problem.

A fundamental cultural change in water management is required to address this issue.

Dr Rick Evans is Principal Hydrogeologist with Sinclair Knight Merz.

Knowledge management

Knowledge management was formally transferred to the new Knowledge and Adoption Strategy during 2004-05 and will not be reported separately in the future.

Knowledge management: Performance against planned outputs in 2004-05

Planned outputs	Achieved outputs
Implementation and communication of the KM framework and at least one agreed initiative throughout the Corporation	A new process and template for collecting and reporting knowledge assets has been successfully implemented across the Corporation.
Update of the Innovations Database to a total of about 150 innovations	The Innovations Database update has commenced and will be completed in 2005-06.

Evaluation

Land & Water Australia has a comprehensive Corporate evaluation strategy to assess progress of its Strategic R&D Plan. A new evaluation strategy was drafted in 2004-05 to complement the new 2005-10 Strategic R&D Plan. The Corporation has a suite of monitoring methods in place to assess current performance of its investments. It has also established a sophisticated triple bottom line benefit-cost analysis methodology to evaluate the impacts and returns from past investments. Some 268 projects have been evaluated in this way and written up as 25 thematic evaluation case studies.

Evaluation: Performance against planned outputs in 2004-05

Planned outputs	Achieved outputs
2003-04 performance report on achievement of objectives of current strategic plan	Completed and submitted to the September Board meeting A full description and results of Land & Water Australia's Return on Investment methodology (including 25 detailed evaluation case studies covering 268 projects) has been prepared and submitted to the Board.
Evaluation strategy updated	A new evaluation strategy to support the 2005-2010 strategic plan was submitted to the June Board meeting.
Best practice non-market valuation methods published	Report *Making economic valuation work for biodiversity conservation* published.

CORPORATE GOVERNANCE & MANAGEMENT

This section describes the processes by which Land & Water Australia is directed and controlled to ensure sound strategic direction, high level performance, effective accountability and appropriate standards of risk management.

CORPORATE STATUS AND CORPORATE GOVERNANCE PRINCIPLES

Land & Water Australia is a Rural R&D Corporation within the Australian Government's Agriculture, Fisheries and Forestry portfolio. Its legislated title is Land and Water Resources Research and Development Corporation. It was established on 3 July 1990 under the Primary Industries and Energy Research and Development (PIERD) Act 1989, which provides a foundation for its accountability to Parliament and to natural resource users and managers across Australia.

Land & Water Australia also operates under the provisions of the Commonwealth Authorities and Companies (CAC) Act 1997, which applies high standards of accountability while providing for the independence required by the Corporation's focus on national R&D Programs.

The Rural R&D Corporations model

- The Rural R&D Corporations (RDCs) take a leading national role in planning, investing in and managing R&D for their respective industries.
- RDCs are not research 'grant' agencies. Their enabling legislation requires them to treat R&D as an investment in economic, environmental and social benefits to their industries and to the people of Australia.
- Rather than focusing mainly on generating new knowledge for its own sake, RDCs strive to deliver high rates of return on R&D investment by influencing the full range of interactions along the innovation chain.
- Striving for high returns on investment also leads RDCs to apply significant resources to translating research outputs into practical outcomes.
- RDCs are required to conduct their activities in accordance with strategic R&D plans and annual operational plans that take account of the R&D needs of end-users and other stakeholders. The plans are approved at ministerial level.
- Although RDCs fund basic research, a high proportion of activity is applied R&D — both short-term and long-term.
- RDCs are accountable to their major stakeholders and to the wider community.

Corporate governance principles

The Board is committed to the highest standards of corporate governance, in accordance with required statutes and principles. The Board provides strategic direction to the Corporation and oversees the implementation of Board decisions and directions by the Corporation's managers.

The Board places a very high priority on achieving the highest standards of corporate governance and was pleased to see that Land & Water Australia has been given a clean bill of health in internal and external audits.

The Board relies on a range of measures to ensure that the Corporation is operating according to the accountability provisions of the CAC Act, including induction training and continuing training for directors; compliance checks and internal and external audits; a due diligence check and code

of conduct for directors; effective processes for disclosure and management of (or perceptions of) conflicts of interest; a risk identification and management framework; and effective systems for monitoring performance and ensuring that the Corporation can meet its debts and other obligations as they fall due. The Corporation has in place a framework for evaluating Board performance in accordance with corporate governance principles and the Board's charter.

This Annual Report includes a comprehensive summary of corporate governance matters, including a description of how strategic directions, policies and processes have been applied during the year. The Board continually reviews policies and processes concerning all major areas of Board operations. A number of Board committees (including Finance, Audit and Communication), and other committees of the Board as deemed necessary from time to time, act on the Board's behalf.

Appropriate R&D Program Management Committees are also established to oversee program design and management, ensuring that desired program outputs are being met and that partnership and government funds are spent wisely.

IMPLEMENTATION OF PIERD ACT OBJECTS AND ACCOUNTABILITY TO PARLIAMENT

The paramount authority for Land & Water Australia's activities is section 3 of Land & Water Australia's enabling legislation (the PIERD Act), which specifies the legislative objects of R&D Corporations. The objects are essentially to fund and administer research and development with a view to carrying out:

- development of primary industries;
- sustainable use and sustainable management of natural resources;
- more effective use of the resources and skills of the community; and
- improved accountability for expenditure.

A tabular presentation on page 6 lists the four objects and outlines the way in which the strategies described in the R&D plan address them.

[The URL for the PIERD Act is: www.austlii.edu.au/au/legis/cth/consol_act/piaerada1989531/]

The Corporation is accountable to the Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry — and, through him, to Parliament.

The Minister is empowered by the PIERD Act to:

- approve the Corporation's five-year Strategic R&D plan, annual operational plan and variations to both of these plans, assessed against the objects set out in the Act;
- select and appoint the Chairperson and Government Director to the Board, and appoint the Presiding Member and other members to the Selection Committee for nominated Board positions;
- approve the nominees for membership on the Board; and
- transfer contracts, agreements and assets held in the name of the Australian Government to the Corporation.

Under the CAC Act, the Minister must table the Corporation's Annual Report in Parliament.

The Minister is responsible for the Corporation's enabling legislation and in turn is answerable to Parliament. The Minister also has other discretionary powers (provided through section 143 of the PIERD Act) to give written directions to the Corporation as to the performance of its functions and the exercise of its powers. The Corporation is also obliged to ensure compliance with any policies of the Australian Government of which it is notified by the Minister under section 28 of the CAC Act.

Responsible ministers

Throughout the year the responsible ministers were:

- Current Minister: Minister for Agriculture, Fisheries and Forestry, the Hon. Peter McGauran, MP
- Current Parliamentary Secretary: Senator the Hon Richard Colbeck, Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry

- Former Parliamentary Secretary no longer holding any portfolios: Senator the Hon Judith Troeth
- Ministers now holding other portfolios: the Hon. Warren Truss, MP, formerly Minister for Agriculture, Fisheries and Forestry, currently Minister for Transport and Regional Services.

Compliance with Australian Government statutes and policies

The Corporation's compliance with statutes and policies of the Australian Government is detailed in Appendix 2.

Notifications of Government general policies and administrative matters by the Minister for Agriculture, Fisheries and Forestry or the Parliamentary Secretary in previous years had continuing effect. The Minister for Agriculture, Fisheries and Forestry issued a notification on 14 April 2003 in respect of cost recovery policy and on 21 August 2002 in respect of the requirement that portfolio agencies adopt the Australian Government Fraud Control Guidelines.

Important Australian Government rural policy frameworks

Five policy frameworks are particularly significant to Land & Water Australia:

- Australian Government national research priorities;
- Australian Government priorities for rural research and development;
- the Australian Government's Natural Heritage Trust;
- the Prime Minister's National Action Plan for Salinity and Water Quality; and
- the National Water Initiative.

Accountability to representative organisations

Land & Water Australia is accountable to two representative organisations, with memberships comprising key natural resource users and managers. They are:

- the Australian Conservation Foundation, 1st floor, 60 Leicester Street, Carlton VIC 3053; and
- the National Farmers' Federation, PO Box E10, Kingston ACT 2604.

Transparency of research project information

Details of all projects funded by Land & Water Australia during the year are entered on to the publicly available online database (www.aanro.net) as part of the AANRO (Australian Agriculture and Natural Resources Online) information service. Details such as project title, principal investigator, objectives, contact numbers and amounts of funding provided are listed in this database. Abstracts of all final reports received by Land & Water Australia are also entered on to AANRO. Further information is available from Infoscan Pty Ltd (telephone: 02 6236 6267; fax: 02 6236 6440; e-mail: infoscan@acslink.aone.net.au).

RISK MANAGEMENT

Land & Water Australia's risk management policy is integrated into its quality management system and internal audit program. The policy seeks to protect the Corporation's public and commercial position and its employees, information and property. A risk register identifies each risk, describes its probability, likely consequences and mitigation strategy, and records the status of the mitigation strategy.

The risk management policy also incorporates a fraud control framework in accordance with the *Fraud Control Policy of the Commonwealth — Best Practice Guide for Fraud Control* (ANAO Audit Report No. 39 of 1996–97), which seeks to minimise the likelihood and impact of fraud. The policy is reviewed regularly by the Board's Audit Committee to ensure that it remains relevant to the Corporation's business. Internal audits, an important component of the risk management framework, are managed by the Audit Committee.

The Risk Management Plan and the Fraud Control Plan were both substantially overhauled and rewritten during 2004-05.

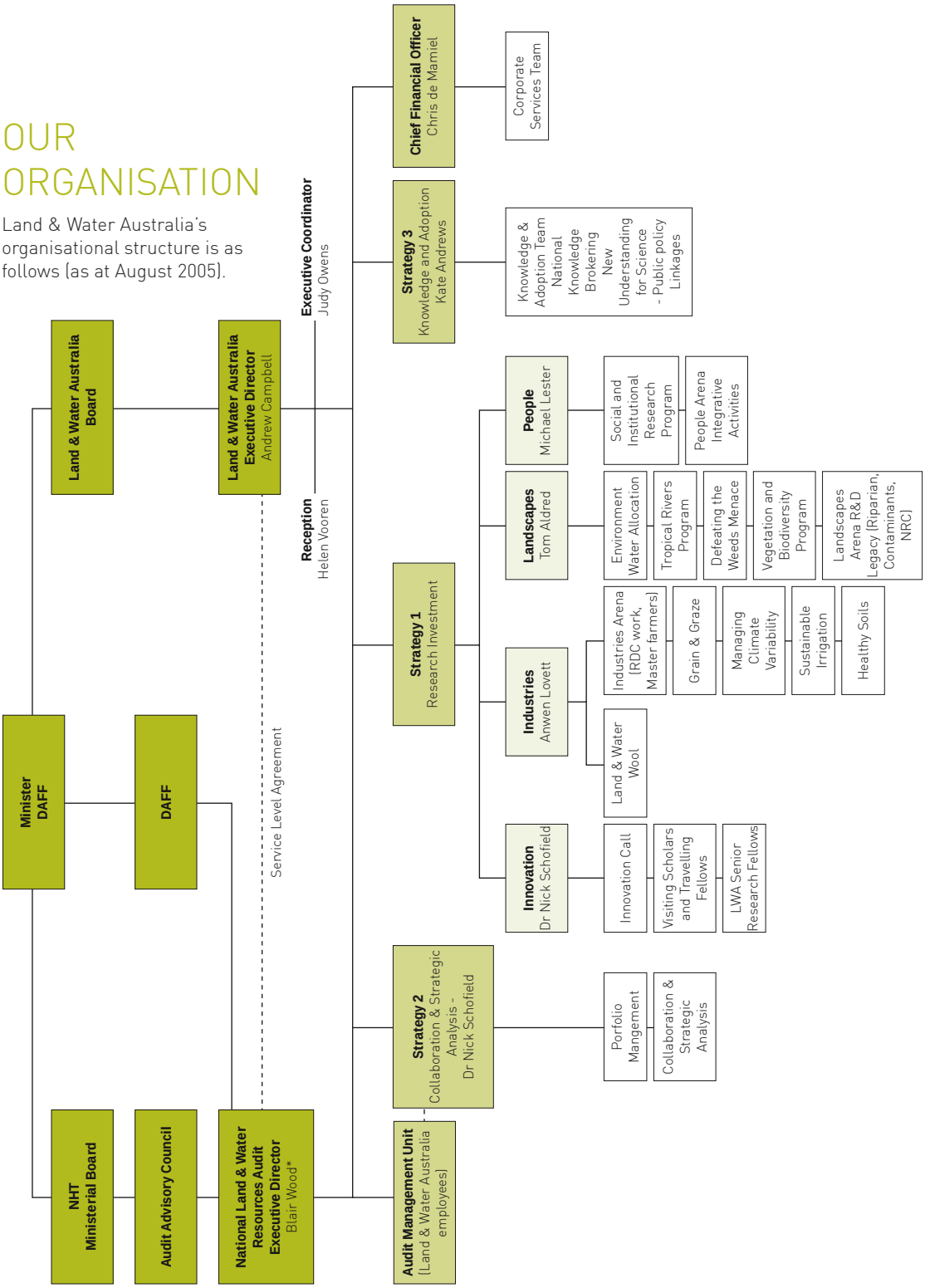
No incidence of fraud was detected during 2004–05.

Indemnities and insurance premiums for officers

The Corporation has comprehensive insurance cover with the Australian Government insurer Comcover for its directors and officers. In accordance with the contract of insurance with Comcover, the Corporation is prohibited from disclosing details of insurance.

OUR ORGANISATION

Land & Water Australia's organisational structure is as follows (as at August 2005).



** Funded by DAFF*

BOARD MEMBERSHIP AND PROCESSES

In accordance with section 16 of the PIERD Act, the Board comprises a Chairperson and a Government Director selected and appointed by the Minister, six non-executive directors nominated by an independent selection committee and appointed by the Minister, and an Executive Director appointed by the Land & Water Australia Board. The terms of the six non-executive directors concluded on 30 June 2005. The report of the independent selection committee on the nomination process for new non-executive directors is set out in the next section.

The Chairperson and other directors (except for the Government Director and Executive Director) are appointed for a term not exceeding three years and are eligible for re-appointment. The Government Director holds office during the Minister's pleasure and the Executive Director holds office during the Board's pleasure.

Directors are selected to reflect a balance of expertise in appropriate areas specified in section 131 of the PIERD Act. They are not appointed as representatives of the organisations or sectors with which they are associated.

Directors can be contacted through the office of Land & Water Australia, GPO Box 2182, Canberra ACT 2601 or by e-mail (land&wateraustralia@lwa.gov.au).

Directors' biographies

Ms Roberta Brazil

Chairman (non-executive)

Appointed as Chair from 1 July 2001 to 30 June 2004; reappointed in 2004 to 30 June 2007.

Member of the Audit and Communication Committees

LLM. (UQ), LLB., BA, Grad. Dip.L.P. (QUT).

Roberta (Bobbie) Brazil is a former lawyer and a partner with her husband in large-scale mixed farming and pastoral businesses on Queensland's Darling Downs and in the Northern Territory. Bobbie brings to the Board an excellent understanding of catchment management and extensive experience in a range of natural resource management and industry bodies. She is Chair, Australian Landcare Council; Chair, Land Use Research Centre Advisory Committee, University of Southern Queensland; Director, Brazil Enterprises (farming and pastoral interests in Queensland and the NT); member, Agforce; member, Condamine River Basin Irrigators Association; member, Northern Territory Cattleman's Association and Northern Territory Irrigation; member, Grain & Fodder Producers Association, Levy payer Cotton Australia; member of Darling Downs Cotton Growers Association; member, Queensland Great Artesian Basin Ministerial Advisory Committee; and Board member of Condamine Alliance Regional Body under the National Action Plan for Salinity and Water Quality.

Warwick Watkins

Deputy Chair (non-executive)

Appointed from 1 July 1996, re-appointed 1999 and then 2002 until 30 June 2005.

Deputy Chair of the Board.

Chair of the Audit Committee.

B.Nat.Res. (UNE), Dip.Sci. Agr (UNE), HDA (Hons), AMP: ISMP (Harv)

Warwick Watkins is Director-General of the NSW Department of Lands and is Surveyor-General of New South Wales. He is also Chair of the ANZLIC-the Spatial Information Council; Chair, NSW Geographic Names Board; Director, CRC for Spatial Information; President, NSW Board of Surveying and Spatial Information; Council Member & Pro-Chancellor of University of Technology, Sydney; Member, Advisory Council, National Land and Water Resources Audit; and Deputy Chair, Healthy Country Advisory Council. Warwick has particular skills and experience in natural resource management, land and spatial information and organisational management.

Andrew Campbell
Executive Director

Appointed from 1 March 2000 until 31 December 2006.

Member of the Finance and Communication Committees and an observer at the Audit Committee.

MSc (Wageningen), B.ForSc (Hons) (Melb), Dip.For (Creswick), FAICD.

Andrew Campbell has been Executive Director of the Corporation since March 2000. He has a farming, forestry and extension background and was previously a senior executive in the Australian Government. He was instrumental in the development of Landcare in Australia through his role as Australia's first National Landcare Facilitator from 1989-92 and as Manager of the Potter Farmland Plan initiative from 1984-88.

John Childs:
Director (non-executive)

Appointed from 1 July 2002 until 30 June 2008.

Member of the Finance and Communication Committees.

M.Agr.Sc (Melb), B.Rural Science (UNE), Dip.Ag.Econ (UNE).

John is a director of Queensland-based Bush Business Consulting Pty Ltd; Member, Northern Territory Pastoral Land Board; and Program Coordinator, Resource Management, Meat & Livestock Australia Northern Beef Program. John has a broad range of skills and experience in natural resource management, adult education and communication, with a special understanding of the situation in northern Australia through his role as the former Director of the Tropical Savannas Cooperative Research Centre. John also has significant experience working with Aboriginal communities and the sheep and cattle grazing industries.

Peter Cullen, AO:
Director (non-executive)

Appointed from 1 July 2002 until 30 June 2008.

Chair of the Communication Committee.

M.Agr.Sc. (Melb), B.Agr.Sc. (Melb), Dip.Ed. (Melb).

Professor Peter Cullen, AO, FTSE is a Commissioner of the National Water Commission; Chair of the Victorian Water Trust Advisory Council; a member of the Natural Heritage Trust Advisory Committee; and a member of the Board of the CRC for Irrigation Futures.

He spent 10 years as the founding Chief Executive of the CRC for Freshwater Ecology at the University of Canberra. He is a Visiting Fellow at CSIRO Land and Water. Professor Cullen was appointed an Officer of the Order of Australia in 2004 for service to freshwater ecology, particularly in the areas of policy development, implementation and sustainability in relation to water and natural resource management, and to education.

He is a graduate in Agricultural Science from the University of Melbourne, a Fellow of the Australian Academy of Technological Sciences and Engineering and a Member of the International Water Academy and the International Ecology Institute.

Tim Fisher:
Director (non-executive)

Appointed from 1 July 2002 until 30 June 2008.

Member of the Audit Committee.

BA (Monash).

Tim has recently been appointed to the position of Manager, Water & Catchments, EPA Victoria prior to which he spent 14 years with the Australian Conservation Foundation. He has worked extensively with farmers and farmer organisations, and has considerable experience on issues as diverse as river health and water resource management, biodiversity conservation and natural resource management policy and funding.

Mike Logan

Director (non-executive)

Appointed from 1 July 1999, re-appointed 2002 until 30 June 2005.

Chair of the Finance Committee.

B.Bus (Kuring-gai CAE), FAICD.

Mike Logan is a cotton, cereal and beef producer from Narrabri, NSW. He was instrumental in introducing an environmental best management practice program into the cotton industry and is probably the first commercial farmer in Australia to have achieved ISO 14001 certification of the environmental management system for his farm.

David Pannell

Director (non-executive)

Appointed from 1 July 2002 until 30 June 2005.

Member of the Communication Committee.

PhD (UWA), B.Ec. (UWA), B.Sc.Agric. (Hons) (UWA).

David is Professor in Agricultural and Resource Economics at the University of Western Australia; Program Leader, People, Land and Water, CRC for Plant Based Management of Dryland Salinity; Member, Steering Committee, Salinity Investment Framework, NRM Council WA; Member, R&D Technical Committee, NRM Council, WA; Member, Advisory Committee, Centre of Excellence in Natural Resource management, WA.; and Honorary Fellow, Centre of Excellence in Natural Resource Management, WA..

David has expertise in resource economics, farmer adoption of land conservation practices, technology transfer, communication, policy evaluation, risk management and the economics of science. He has a broad understanding of Australia's rural industries and brings a multi-disciplinary approach to sustainability issues. He was a member of the WA Government's Salinity Taskforce, and is a past President of the Australian Agricultural and Resource Economics Society.

David won the W.E. Wood Award for Excellence in Dryland Salinity Research for 2003–04.

Charles Willcocks:

Government Director (non-executive)

Member of the Audit Committee.

Appointed from 1 July 1997; holds office during the Minister's pleasure.

B.Rural Science (Hons) (UNE), Dip. Economic Development (Glasgow).

Charles is the General Manager, Landcare and Invasive Species Branch, Natural Resource Management Division, Department of Agriculture, Fisheries and Forestry, and a Member of Rangelands Australia Advisory Council.

Committees of the Board

In 2003–04, committees to deal with the matters affecting the Board were:

- the Audit Committee, comprising four non-executive directors, internal and external auditors and the Chief Financial Officer (with the Executive Director as an observer), which monitors the financial systems, operations and accounts of the Corporation;
- the Finance Committee, comprising two non-executive directors, the Executive Director and the Chief Financial Officer, which considers financial matters affecting the Corporation; and
- the Communication Committee, comprising five non-executive directors, the Executive Director and the Knowledge and Adoption Manager, which develops a communication strategy and oversees its implementation.

The Board has also set up other committees to assist in the management of specific R&D Programs.

Board and Committee membership and attendance

The numbers of Board meetings and Board committee meetings attended by directors and officers during 2004–05 were as follows:

	Board Meetings	Audit Commitee meetings	Finance Commitee meetings	Communication Commitee meetings
No. of meetings held	4	4	8	4
Roberta Brazil	4	4	0	3
Andrew Campbell	4	0	8	4
John Childs	4	0	5	2
Peter Cullen ‡	4	0	0	4
Tim Fisher	4	4	0	0
Mike Logan Δ	4	0	8	0
David Pannell	4	0	0	4
Warwick Watkins §	4	4	0	0
Charles Willcocks	3	4	0	0
Kate Andrews *(Knowledge and Adoption Manager)*	0	0	0	4
Iris Carter *(Chief Finance Officer)*	0	3	7	0
Charmaine Murfet *(A/g) Chief Financial Officer)*	0	1	1	0

‡ *Chair of Communication Committee.*
Δ *Chair of Finance Committee.*
§ *Chair of Audit Committee.*

Directors' interests policy

In accordance with the CAC Act, the Board has in place a process to manage all direct and indirect conflicts of interest, including directors' formal declarations of their interests at each Board meeting which are documented in the minutes of the meeting. This policy extends to all committees of Land & Water Australia.

Board charter

The Board has developed and agreed a charter under which it operates.

Board evaluation

Periodic, independent evaluations of Board performance are conducted – usually twice in the life of each Board. The most recent evaluation was conducted by an external consultancy firm (Competitive Dynamics from Brisbane) in June 2004.

Selection of the Land & Water Australia Board

LAND & WATER AUSTRALIA

SELECTION COMMITTEE ANNUAL REPORT

Dr John Drinan
1413 Glendon Brook Rd
GLENDON BROOK NSW 2330
02 6577 6156 ph

Senator the Hon Richard Colbeck
Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry
Parliament House
CANBERRA ACT 2600

Dear Senator,

I am pleased to submit the annual report of the Land & Water Australia Selection Committee which you established in April 2005, pursuant to section 141(1) of the Primary Industries and Energy Research and Development Act 1989.

Now that the work of the Selection Committee is complete, I hereby formally abolish it, pursuant to section 129 of the Act.

Yours sincerely

John Drinan
Presiding Member
Land & Water Australia Selection Committee

4 August 2005

Establishment of the Selection Committee

The Land & Water Australia Selection Committee was established under the *Primary Industries and Energy Research and Development Act 1989* (PIERD Act) for the purpose of nominating to the Minister persons for appointment as Directors of the Land & Water Australia Board.

The Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry, Senator the Hon Richard Colbeck, appointed Dr John Drinan, rural consultant and primary producer, as the Presiding Member of the Selection Committee for a three-year period commencing 9 February 2005.

The Representative Organisations of Land & Water Australia, the Australian Conservation Foundation and the National Farmers' Federation, nominated Mr Laurie Arthur, Mr Ralph Leutton, Dr Thea Mech and Dr Warren Nicholls for appointment to the Land & Water Australia Selection Committee.

The Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry appointed Messrs Arthur and Leutton and Drs Mech and Nicholls to the Committee on 26 April 2005. Further details concerning the members of the Committee are given below:

Members of the Land & Water Australia Selection Committee

Presiding Member:

Dr JOHN DRINAN

Dr Drinan is a rural consultant and beef producer based in the Hunter Valley of NSW. He is a former chair of the Dairy Research and Development Corporation and a current member of the Dairy Adjustment Authority.

Members:

MR LAURIE ARTHUR

Mr Arthur is President of the Ricegrowers' Association of Australia.

MR RALPH LEUTTON

Mr Leutton is Program Manager, Policy and Legislation, with Cotton Australia.

DR THEA MECH

Dr Mech is Project Manager, Lower Murray Futures Project, Land Technologies Alliance, University of Adelaide.

DR WARREN NICHOLLS

Dr Nicholls is an environmental consultant based in Canberra.

The selection process

Advertisements were placed in the national and rural press and on the Land & Water Australia website beginning on 31 March 2005, with a closing date of 15 April 2005. As part of the process, the Balance Database of the Department of Agriculture, Fisheries and Forestry was consulted and, as a result, a number of individuals were contacted by the Presiding Member to draw their attention to the advertisement. The Presiding Member also requested the Department, the National Farmers' Federation and the Australian Conservation Foundation to circulate notice of the advertisement through their appropriate channels.

The Selection Committee received 182 applications from which list 15 applicants were interviewed on 23 and 24 May. At the conclusion of interviews, the Committee prepared a list of preferred applicants and, in accordance with section 131 of the PIERD Act, nominated six for appointment in the Committee's report to the Parliamentary Secretary dated 6 June 2005. In considering the nominations, the Parliamentary Secretary invoked his powers on 27 June 2005 under section 134 of the PIERD Act and sought further nominations. After interviewing a further four applicants, the Committee made its final report to the Parliamentary Secretary on 28 June 2005.

Appointments by the Parliamentary Secretary to the Minister

The persons appointed to the Land & Water Australia Board by the Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry are Ms Dianne Bentley, Mr John Childs, Professor Peter Cullen, Mr Tim Fisher, Dr Ted Lefroy and Mr John (Jack) Speirs.

The Selection Committee is unanimous in its view that the six persons appointed to the Land & Water Australia Board by the Parliamentary Secretary collectively possess a balance of expertise in the areas listed in subsection 131(1) of the PIERD Act, that is, commodity production, processing and marketing; management and conservation of natural resources; science, technology and technology transfer; environmental and ecological matters; administration of research and development; economics, finance and business management; and sociology.

Costs

The operations of the Selection Committee entailed costs of $31,171, a summary of which is set out below:

Expenses of the Land & Water Australia Board Selection Committee for the year ended 30 June 2005

Item	Expenditure ($)
Airfares and travel	10,293
Advertising	8,800
Secretarial	869
Sitting fees	9,792
Postage	111
Other	1,306
Total (including GST)	**31,171**

STAFF MEMBERSHIP AND PROCESSES

Land & Water Australia staff support the establishment and management of R&D programs including effective corporate and knowledge and adoption support. Staff are employed on terms and conditions determined by the Corporation. As at 1 August 2005, 32 full time equivalent staff were employed.

Executive Director	Andrew Campbell
Landscapes Manager (seconded from DAFF)	Tom Aldred
Knowledge & Adoption Manager	Kate Andrews
Chief Financial Officer	Chris de Mamiel
Sustainable Primary Industries Manager	Anwen Lovett
Social & Institutional Research Manager	Michael Lester
Science Manager	Dr Nick Schofield
Land, Water & Wool Manager	Mike Wagg
Executive Coordinator	Judy Owens
Social and Institutional R&D Program Coordinator	Dr Alice Roughley
Climate Variability Program Coordinator (seconded from ABARE)	Dr Rohan Nelson
Senior Knowledge Broker	Dr Stuart Pearson
Communication Officer	Tim Lester
Communication Officer (P/T)	Fleur Flanery
Knowledge & Adoption Officer	Merryn West
Publication Officer	Jennifer Bruce
Receptionist/Executive Assistant	Helen Vooren
Administration Assistant – Communication (P/T)	Samantha Burt
Knowledge Exchange Officer	Dr Sarah Vandermark
National Knowledge Broker	Melissa Morley
Knowledge & Access Coordinator	Mathew Silver
Knowledge Broker	Belinda Lovell
Human Resources Officer	Jenny Nitschke
Assistant Accountant	Andrew Martin
Finance Officer	Betsy Vucetic
Contracts Officer	Jane Briggs
Senior Program Officer, Research and Development	Gill Whiting
Senior Program Officer, Research and Development	Catherine Viljoen
Program Officer, Research and Development	Joanne Caruso
Program Officer, Research and Development	Andrew Lawson
Program Officer, Research and Development	Joanna Pinkas
Program Officer, Research and Development (P/T)	Prue Vincent
Extension Coordinator, Grain & Graze	Gill Stewart

Six full-time persons excluding the Audit's Executive Director, were employed by Land & Water Australia as part of the National Land & Water Resources Audit Management Unit, phase 2.

Executive Director – (Funded by DAFF)	Blair Wood
Technical Coordinator	Rob Thorman
Data and Information Coordinator	Peter Wilson
Project Officer	Alana Innes
Project Officer, Thematic Data Delivery	Vivienne Bordas
Project Officer	Martine Franco
Executive Assistant	Michelle de Plater

Land & Water Australia staff members pictured at the Corporation's Open Day 2004, from left, Industries program officer Joanne Caruso, Social and Institutional Research Program Coordinator Dr Alice Roughley, Social and Institutional Research Program Officer Joanna Pinkas and Strategic Analyst Dr Steve Cork.

Remuneration policy

Land & Water Australia's salary banding structure is based on four broad salary bands. Work value indicators are used to evaluate the level of a position and its place in the appropriate band. Land & Water Australia has a comprehensive performance management system, which includes annual and mid-term reviews of performance. The General Terms and Conditions of Employment detail employee remuneration benefits and performance obligations.

Staff development

Land & Water Australia is in the knowledge business — investing in, brokering and managing R&D. In the process the Corporation generates, transforms, utilises and works with knowledge — some of it formal, but much of it tacit, informal, experiential and intangible. The Corporation's portfolio of more than 1600 projects during the last decade represents a considerable knowledge bank. However the talents, experience, skills and know-how of staff represent probably the Corporation's greatest knowledge asset. Accordingly, the Corporation places priority on recruiting, developing and retaining people of high quality, commensurate with its national leadership role and very challenging mandate. The table below shows the formal qualifications of the Corporation's staff and, importantly, the significant number of staff who are undertaking further study as part of their training and development plans.

Training and development opportunities are not limited to formal qualification, but may also include short courses and development opportunities that are not represented in the table above.

Each staff member's performance management agreement incorporates a training and development plan in which areas for development and activities or training are nominated. The Corporation is currently reviewing the induction process for incoming staff.

Organisational health

Land & Water Australia constantly strives to promote a friendly, supportive and continual learning environment for staff members, who are among the Corporation's principal assets. Some activities that contributed during the year to promoting the health and morale of the organisation are:

- continued review and development of human resource policies and guidelines;
- contribution to a positive work environment by the Social Committee; and
- a staff workshop which incorporated revitalising staff, building trust and internal relationships.

Compliance with human resource statutes

An independent review of the Land & Water Australia compliance requirements concluded that the Corporation has demonstrated compliance across a range of statues, and identified areas of review and enhancement. Further details are in Appendix 2.

Land & Water Australia staff during the 2005 staff workshop.

	PhD	Masters Degree	Bachelor Degree	Graduate diploma or certificate
Completed	4	6	27	15
In Progress	3	1	2	3

Land & Water Australia staff during the 2005 staff workshop.

Occupational health and safety

Land & Water Australia is obliged to comply with the ***Occupational Health and Safety (Commonwealth Employment)*** Act 1991 (the 'OH&S Act') and the ACT Occupational Health and Safety Act 1989. The Corporation's occupational health and safety (OH&S) policy sets out staff obligations with respect to OH&S and establishes an OH&S Officer. The Corporation conducts OH&S review of workstations on a regular basis.

There have been no reports of any accidents and one report of a dangerous incident during the past year that required notice to be given under section 68 of the OH&S Act. No investigations were conducted during the year. The dangerous incident was a burst plumbing pipe that caused a leak into Land & Water Australia's new office premises in February 2005.

Location of the Corporation's major activities and facilities

Land & Water Australia's office is in Canberra. Location and contact details are on the back cover of this report.

Quality management system

Land & Water Australia has built on its ISO 9000 quality management certification, achieved in 1996, through to AS/NZS ISO 9001:2000 achieved in July 2001. These achievements indicate the Corporation's commitment to continual improvement and the highest level of client service and accountability. The Corporation's total quality management commitment underpins many factors that are critical to the highest standards of corporate governance and risk management. The Corporation's quality management systems were audited in 2004–05 by SGS International Certification Services Pty Ltd.

FINANCIAL STATEMENTS

Australian National
Audit Office

INDEPENDENT AUDIT REPORT

To the Minister for Agriculture, Fisheries and Forestry

Scope

The financial statements and Directors' responsibility

The financial statements comprise:

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

of the Land and Water Resources Research and Development Corporation for the year ended 30 June 2005.

The Directors of the Land and Water Resources Research and Development Corporation are responsible for preparing financial statements that give a true and fair view of the financial position and performance of the Land and Water Resources Research and Development Corporation, and that comply with accounting standards and other mandatory financial reporting requirements in Australia, and the Finance Minister's Orders made under the *Commonwealth Authorities and Companies Act 1997*. The Directors are also responsible for the maintenance of adequate accounting records and internal controls that are designed to prevent and detect fraud and error, and for the accounting policies and accounting estimates inherent in the financial statements.

Audit approach

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

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

GPO Box 707 CANBERRA ACT 2601
Centenary House 19 National Circuit
BARTON ACT
Phone (02) 6203 7300 Fax (02) 6203 7777

I have performed procedures to assess whether, in all material respects, the financial statements present fairly, in accordance with the Finance Minister's Orders made under the *Commonwealth Authorities and Companies Act 1997*, including accounting standards and other mandatory financial reporting requirements in Australia, a view which is consistent with my understanding of the Land and Water Resources Research and Development Corporation's financial position, and of its performance as represented by the statements of financial performance and cash flows.

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

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

Independence

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

Audit Opinion

In my opinion, the financial statements of the Land and Water Resources Research and Development Corporation:

(a) have been prepared in accordance with the Finance Minister's Orders made under the *Commonwealth Authorities and Companies Act 1997;* and

(b) give a true and fair view of the Land and Water Resources Research and Development Corporation's financial position as at 30 June 2005 and of its performance and cash flows for the year then ended, in accordance with:

(i) the matters required by the Finance Minister's Orders; and

(ii) applicable accounting standards and other mandatory financial reporting requirements in Australia.

Australian National Audit Office

Michael White
Executive Director

Delegate of the Auditor-General

Canberra
25 August 2005

LAND AND WATER RESOURCES RESEARCH AND DEVELOPMENT CORPORATION

Statement by directors

In our opinion, the attached financial statements for the year ended 30 June 2005 give a true and fair view of the matters required by the Finance Minister's Orders made under the *Commonwealth Authorities and Companies Act 1997*.

In our opinion, at the date of this statement, there are reasonable grounds to believe that the Corporation will be able to pay its debts as and when they become due and payable.

This statement is made in accordance with a resolution of the directors.

Roberta Brazil
Chairman
25 August 2005

Andrew Campbell
Executive Director
25.8. 2005

Chris de Mamiel
Chief Financial Officer
25 AUGUST 2005

LAND AND WATER RESOURCES RESEARCH AND DEVELOPMENT CORPORATION
STATEMENT OF FINANCIAL PERFORMANCE
for the year ended 30 June 2005

	Notes	2005	2004
		$	$
REVENUE			
Revenues from ordinary activities			
Revenue from Government	6A	**12,501,000**	12,241,000
Third party contributions utilised	5	**14,657,692**	12,756,182
Interest	6B	**588,293**	327,278
Revenue from sale of assets	6C	**9,657**	25,454
Other	6D	**108,104**	136,764
Revenues from ordinary activities		**27,864,746**	25,486,678
EXPENSE			
Expenses from ordinary activities			
Employees	7A	**3,629,639**	3,519,837
Suppliers	7B	**4,262,955**	5,127,571
Research and Development	8	**18,153,525**	16,568,075
Depreciation and amortisation	7C	**206,973**	256,650
Write down of assets	7D	**1,570**	147,332
Value of assets sold	6C	**16,031**	24,924
Expenses from ordinary activities	9	**26,270,693**	25,644,389
Operating surplus/(deficit) from ordinary activities		**1,594,053**	(157,711)
Net surplus /(deficit)		**1,594,053**	(157,711)
Net credit to asset revaluation reserve	14	**72,833**	-
Total revenues, expenses and valuation adjustments recognised directly in equity		**72,833**	-
Total changes in equity other than those resulting from transactions with the Australian Government as owner		**1,666,886**	(157,711)

The above statement of financial performance should be read in conjunction with the accompanying notes

LAND AND WATER RESOURCES RESEARCH AND DEVELOPMENT CORPORATION
STATEMENT OF FINANCIAL POSITION
as at 30 June 2005

	Notes	2005	2004
		$	$
ASSETS			
Financial assets			
Cash	15B,22A	4,863,282	8,016,995
Receivables	10A,22A	1,961,262	2,942,431
Investments	10B,22A	11,944,759	655,226
Total financial assets		18,769,303	11,614,652
Non-financial assets			
Land and buildings	11A,D	552,361	500,910
Infrastructure, plant and equipment	11B,D	164,469	205,062
Intangibles	11C,E	23,769	38,565
Other non financial assets	11F	48,874	76,527
Total non-financial assets		789,473	821,064
Total assets		19,558,776	12,435,716
LIABILITIES			
Provisions			
Employees	12A	636,671	655,049
Suppliers	12B	-	156,502
Total provisions		636,671	811,551
Payables			
Suppliers	13A,22A	1,997,060	1,197,647
Research and Development	13B,22A	13,716,092	8,884,451
Total Payables		15,713,152	10,082,098
Total liabilities		16,349,823	10,893,649
NET ASSETS		3,208,953	1,542,067
EQUITY			
Parent entity interest			
Reserves	14	188,087	115,254
Accumulated surplus	14	3,020,866	1,426,813
Total parent entity interests		3,208,953	1,542,067
Total equity		3,208,953	1,542,067
Current assets		18,818,177	11,691,179
Non-current assets		740,599	744,537
Current liabilities		16,113,711	10,625,632
Non-current liabilities		236,112	268,017

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

LAND AND WATER RESOURCES RESEARCH AND DEVELOPMENT CORPORATION
STATEMENT OF CASH FLOWS
for the year ended 30 June 2005

	Notes	2005	2004
		$	$
OPERATING ACTIVITIES			
Cash Received			
Sale of goods and services		**208,850**	329,489
Revenue from Government		**12,501,000**	12,241,000
Interest		**588,445**	301,389
Third party contributions		**17,563,349**	12,802,332
GST received from ATO		**211,357**	771,349
Total cash received		**31,073,001**	26,445,559
Cash used			
Employees		**(3,648,019)**	(3,646,028)
Suppliers		**(4,047,993)**	(4,706,730)
Research and Development		**(15,104,593)**	(14,240,024)
Total cash used		**(22,800,605)**	(22,592,782)
Net cash from operating activities	**15A**	**8,272,396**	3,852,777
Investing Activities			
Cash Received			
Proceeds from sales of infrastructure, plant and equipment		**9,657**	25,454
Proceeds from sale of financial instruments		**-**	480,909
Total cash received		**9,657**	506,363
Cash used			
Purchase of infrastructure, plant and equipment		**(146,233)**	(688,593)
Purchase of financial instruments		**(11,289,533)**	-
Total cash used		**(11,435,766)**	(688,593)
Net cash used by investing activities		**(11,426,109)**	(182,230)
Net (decrease)/ increase in cash held		**(3,153,713)**	3,670,547
Cash at the beginning of the reporting period		**8,016,995**	4,346,448
Cash at the end of the reporting period	**15B**	**4,863,282**	8,016,995

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

LAND AND WATER RESOURCES RESEARCH AND DEVELOPMENT CORPORATION
SCHEDULE OF COMMITMENTS
as at 30 June 2005

	2005 $	2004 $
By Type		
Other commitments		
Operating lease [1]	**3,153,022**	3,656,948
Other commitments [2]	**26,330,497**	24,313,857
Total other commitments	**29,483,519**	27,970,805
Commitments receivable	**(2,680,320)**	(2,542,801)
Net commitments by type	**26,803,199**	25,428,004
By Maturity		
Operating lease commitments		
One year or less	**521,564**	503,926
From one to five years	**2,275,304**	2,198,362
Over five years	**356,154**	954,660
Total operating lease commitments	**3,153,022**	3,656,948
Other commitments		
One year or less	**14,914,637**	12,681,837
From one to five years	**11,371,586**	11,632,020
Over five years	**44,274**	-
Total other commitments	**26,330,497**	24,313,857
Commitments receivable	**(2,680,320)**	(2,542,801)
Net commitments by maturity	**26,803,199**	25,428,004

N.B. Commitments are GST inclusive where relevant

1. Operating lease is exclusively in relation to office accommodation for a rental lease to January 2011 with annual increases of 3.5%.

2. As at 30 June 2005 other commitments comprise future commitments to research organisations and for jointly funded projects and programs managed by other funding agencies in respect of which the recipient is yet to either perform the services required or meet eligibility conditions.

The above schedule of commitments should be read in conjunction with the accompanying notes

LAND AND WATER RESOURCES RESEARCH AND DEVELOPMENT CORPORATION
NOTES TO AND FORMING PART OF THE FINANCIAL STATEMENTS
for the year ended 30 June 2005

Notes to and Forming Part of the Financial Statements

Note 1: Summary of Significant Accounting Policies

1.1 Basis of Accounting

The Land and Water Resources Research and Development Corporation (the 'Corporation'), trading as Land & Water Australia, is required by Section 20 of *the Commonwealth Authorities and Companies Act 1977* to provide proper accounts and records of the transactions and affairs of the Corporation in accordance with accounting principles, generally applied in commercial practice.

The financial statements are required by clause 1(b) of Schedule 1 to the *Commonwealth Authorities and Companies Act 1977* and are a general purpose financial report.

The Statements have been prepared in accordance with:

- Finance Minister's Orders (being the *Commonwealth Authorities and Companies Orders (Financial Statements for reporting periods ending on or after 30 June 2004)*);
- Australian Accounting Standards and Accounting Interpretations issues by the Australian Accounting Standards Board; and
- Consensus Views of the Urgent Issues Group.

The Corporation's Statements of Financial Performance and Financial Position have been prepared on an accrual basis and are in accordance with historical cost convention, except for certain assets, which as noted, are at valuation. Except where stated, no allowance is made for the effect of changing prices on the results or the financial position.

Assets and liabilities are recognised in the Statement of Financial Position when and only when it is probable that future economic benefits will flow and the amounts of the assets or liabilities can be reliably measured. Assets and liabilities arising under agreements equally proportionately unperformed are however not recognised unless required by an Accounting Standard. Liabilities and assets that are unrecognised are reported in the Schedule of Commitments and the Schedule of Contingencies.

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

1.2 Revenue

The revenues described in this Note are revenues relating to the core operating activities of the Corporation.

Interest revenue is recognised on a proportional basis taking into account the interest rates applicable to the financial assets.

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

Revenue from the rendering of a service is recognised by reference to the stage of completion of contracts or other agreements to provide services to other bodies. The stage of completion is determined according to the proportion that costs incurred to date bear to the estimated total costs of the transactions.

The Corporation received revenue from third parties for the management of collaborative programs and projects.

Revenues from Government – Funding for Outputs

The full amount of the funding from the Department of Agriculture, Fisheries and Forestry from Appropriation Acts 1 and 2 for the Corporation's outputs for the year, is recognised as revenue.

1.3 Employee Benefits

Benefits

Liabilities for services rendered by employees are recognised at the reporting date to the extent that they have not been settled.

Liabilities for wages and salaries (including non-monetary benefits), annual leave and sick leave are measured at their nominal amounts. Other employee benefits expected to be settled within 12 months of their reporting date are also measured at their nominal amounts.

The nominal amount is calculated with regard to the rates expected to be paid on settlement of the liability.

All other employee benefit liabilities are measured as the present value of the estimated future cash outflows to be made in respect of services provided by employees up to the reporting date.

Leave

The liability for employee entitlements includes provision for annual leave and long service leave. No provision has been made for sick leave as all sick leave is non-vesting and the average sick leave taken in future years by employees of the Corporation is estimated to be less than an annual entitlement for sick leave.

The leave liabilities are calculated on the basis of employees' remuneration, including the Corporation's employer superannuation contribution rates to the extent that the leave is likely to be taken during service rather than paid out on termination.

The non-current portion of the liability for long service leave is recognised and measured at the present value of the estimated future cash flows to be made in respect of all employees as at 30 June 2005.

Separation and Redundancy

Provision is made for separation and redundancy payments in circumstances where the Corporation has formally identified positions as excess to requirements and a reliable estimate of the amount of the payments can be determined.

Superannuation

Employees are members of the Commonwealth Superannuation and Public Service Superannuation Schemes, or other selected scheme in accordance with the Superannuation Guarantee levy.

The liability for superannuation recognised as at 30 June 2005 represents outstanding contributions for the final day of the year.

1.4 Leases

Operating lease payments are expensed on a basis which is representative of the pattern of benefits derived from the leased assets. The net present value of future net outlays in respect of surplus space under non-cancellable lease agreements is expensed in the period in which the space becomes surplus.

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

1.5 Research & Development expenses

Research & Development expenses are expensed as incurred.

The Corporation recognises research and development provisions and liabilities. Most research and development agreements require the grantee to perform services, provide facilities, or to meet eligibility criteria. In these cases, liabilities are recognised only to the extent that the services required have been performed or the performance eligibility criteria have been satisfied by the grantee. Where Research & Development monies are paid in advance of performance or eligibility, a prepayment is recognised. Where the research and development agreement has been executed by the Corporation but not yet by the grantee, a provision for any initial payment to be made on execution is recorded.

1.6 Cash

Cash means notes and coins held and any deposits held at call with a bank or financial institution. Cash is recognised at its nominal amount. Interest is credited to revenue as it accrues.

1.7 Acquisition of assets

Assets are recorded at cost on acquisition. The cost of acquisition includes the fair value of assets transferred in exchange and liabilities undertaken.

1.8 Property, Plant and Equipment

Asset Recognition Threshold

Purchase of property, plant and equipment are recognised initially at cost in the Statement of Financial Position, except for purchases costing less than $2,000, which are expensed in the year of acquisition (other than where they form part of a group of similar items which are significant in total). Assets purchased from project funds which are greater than the threshold of $5,000, may revert to the Corporation at the end of the project period. As at 30 June 2005, no reversions took place. All sundry equipment transferred from the Commonwealth has been written off.

Revaluations

Land, buildings, infrastructure, plant and equipment are carried at valuation, being revalued annually with sufficient frequency such that the carrying amount of each asset class is not materially different, as at reporting date, from its fair value.

Fair Values for each class of asset are determined as shown below.

Asset Class	Fair Value Measured at:
Leasehold improvements	Depreciated replacement cost
Plant & Equipment	Market selling price

Assets which are surplus to requirements are measured at their net realisable value. At 30 June 2005 the Corporation held no surplus assets: (2004: nil)

Frequency

Property, plant and equipment have been revalued progressively on a three year cycle. The last valuation was done as at 1 July 2004. The Finance Minister's Orders now require that all property, plant and equipment assets be measured at up-to-date fair values from 30 June 2005 onwards.

Conduct

All valuations are conducted by an independent qualified valuer.

Depreciation and Amortisation

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

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

Depreciation and amortisation rates applying to each class of depreciable asset are based on the following useful lives:

	2005	2004
Leasehold improvements	lease term	lease term
Plant and equipment	3-8 years	3-8 years

The aggregate amount of depreciation and amortisation allocated for each class of asset during the reporting period is disclosed in Note 7C.

1.9 Intangibles

The Corporation's intangibles comprise externally acquired and internally developed software. All software is carried at cost.

Software is amortised on a straight line basis over the anticipated useful life.

Useful lives are:

	2005	2004
Externally acquired software	3-5 years	3-4 years
Internally developed software	3-4 years	3-4 years

1.10 Impairment of assets

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

Non-current assets held at cost are those assets that were acquired during the year. They have been assessed for indicators of impairment and all assets were found to be fully operational and meeting the needs of the Corporation. No write downs were required. (2004: nil)

1.11 Taxation

The Corporation is liable to pay payroll tax, fringe benefits tax, stamp duty and the goods and services tax. The Corporation is exempt from the payment of income tax under clause 46(1) of the *Primary Industries and Energy Research and Development Act 1989 (PIERD Act)*.

Revenues, expenses and assets are recognised net of GST:

- except where the amount of GST incurred is not recoverable from the Australian Taxation Office; and
- except for receivables and payables.

1.12 Insurance

The Corporation has insured risks through the Government's insurable risk managed fund, called 'Comcover'. Workers compensation is insured through Comcare Australia.

1.13 Comparative figures

Where necessary, comparative figures have been reclassified to conform with the current financial year's presentation.

Note 2: Adoption of Australian Equivalents to International Financial Reporting Standards - from 2005-2006

The Australian Accounting Standards Board has issued replacement Australian Accounting Standards to apply from 2005-06. The new standards are the Australian Equivalents to International Financial Reporting Standards (AEIFRS) which are issued by the International Accounting Standards Board. The new standards cannot be adopted early. The standards being replaced are to be withdrawn with effect from 2005-06, but continue to apply in the meantime.

The purpose of issuing AEIFRS is to enable Australian entities to be able to prepare their financial report according to accounting standards more widely used overseas.

It is expected that the Finance Minister will continue to require compliance with the Accounting Standards issued by the AASB, including the AEIFRS, in his Orders for the Preparation of Agency financial statements for 2005-06 and beyond.

AEIFRS contain certain additional provisions that will apply to not-for-profit entities, including the Land and Water Resources Research and Development Corporation . Some of these provisions are in conflict with the IFRSs and therefore the Corporation will only be able to assert that the financial report had been prepared in accordance with the Australian Accounting Standards.

AAS 29 *Financial Reporting by Government Departments* will continue to apply under AEIFRS.

Accounting Standard AASB 1047 Disclosing the *Impacts of Adopting Australian Equivalents to International Financial Reporting Standards* requires that the financial report for 2004-05 disclose:

- an explanation of how the transition to AEIFRS is being managed;
- narrative explanations of the key policy differences arising from the adoption of AEIFRS;
- any known or reliably estimable information about the impacts on the financial report had it been prepared using the Australian equivalents to IFRS; and
- if the impacts of the above are not known or reliably estimable, a statement to that effect.

Where an entity is not able to make a reliable estimate, or where quantitative information is not known, the entity should update the narrative disclosures of the key differences in accounting policies that are expected to arise from the adoption of AEIFRS.

The purpose of this Note is to make these disclosures.

Management of the transition to AASB Equivalents to IFRS

The Corporation's Audit Committee is tasked with oversight of the transition and implementation to AEIFRS. The Chief Finance Officer is formally responsible for the project and reports regularly to the Audit Committee on the progress against the plan.

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

- all major accounting policy differences between current AASB standards and AEIFRS were identified by 30 June 2004;
- confirmed that there were no system changes necessary to be able to report under AEIFRS;

- a transitional balance sheet as at 1 July 2004 under AEIFRS was completed and presented to the Audit Committee on 15 December 2004;
- an AEIFRS compliant balance sheet was also prepared during the preparation of the 2004-05 statutory financial reports; and
- the 2004-05 Balance Sheet under AEIFRS will be reported to the Department of Finance and Administration in line with their reporting deadlines.

The plan also addresses the risks to successful achievement of the above objectives and includes strategies to keep implementation on track to meet deadlines.

Consultants were engaged where necessary to assist with each of the above steps.

Major changes in accounting policy

The Corporation believes that the first financial report prepared under AEIFRS (June 2006), will be prepared on the basis that the Corporation will be a first time adopter under AASB 1 *First-time Adoption of Australian Equivalents to International Financial Reporting Standards*. Changes in accounting policies under AEIFRS are generally applied retrospectively i.e. as if the new policy had always applied. This means that an AEIFRS compliant balance sheet has to be prepared as at 1 July 2004. This will enable the 2005-06 financial statements to report comparatives under AEIFRS.

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

Management's review of the quantitative impacts of AEIFRS represents the best estimate of the impacts of the changes at reporting date. The actual effects of the impacts of AEIFRS may differ from these estimates due to:

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

Property plant and equipment

There is not expected to be any change to the value of property, plant and equipment under AEIFRS. It is expected that the 2005-06 Finance Minister's Orders will continue to require property plant and equipment assets to be measured at fair value in 2005-06. This differs from the accounting policies currently in place for these assets which, up to and including 2003-04, have been revalued progressively over a 3-year cycle and which currently include assets at cost (for purchases since the commencement of a cycle) and at deprival value (which will differ from their fair value to the extent that they have been measured at depreciated replacement cost when a relevant market selling price is available).

The transitional standard also requires that the same accounting policies be applied in the opening balance sheet as in the 2005-06 statements. This means that where entities intend to recognise assets at fair value in the 2005-06 statements, they must also do so as at 1 July 2004.

The Corporation had a revaluation conducted 30 June 2004. This valuation will provide the assets fair value, which will be used in the opening balance sheet.

Intangible Assets

There is not expected to be any change to the value of intangibles under AEIFRS.

The AEIFRS standard on Intangibles does not permit intangibles to be measured at valuation, (this includes where carrying amounts include amounts that were originally measured at deprival valuation and subsequently deemed to be cost under transitional provisions available on the introduction of AAS *38 Revaluation of Non-current Assets* in 2000-01 and AASB 1041 of the same title in 2001-02), unless there is an active market for the intangible. The Corporation's internally-developed software is specific to their needs and is not traded, however they are recorded on a cost basis and therefore will not have to be derecognised.

Impairment of Non-Current Assets

The Corporation's policy on impairment of non-current assets is at note 1.11.

Under AEIFRS, these assets will be subject to assessment for impairment and, if there are indications of impairment, measurement of any impairment (impairment measurement must also be done, irrespective of any indications of impairment, for intangible assets not yet available for use). The impairment test is that the carrying amount of an asset must not exceed the greater of:

(a) its fair value less costs to sell; and

(b) its value in use ('Value in use' is the net present value of net cash inflows for for-profit assets of the organisation and depreciated replacement cost for other assets which would be replaced if the organisation were deprived of them).

Decommissioning, Restoration and Make-good

AEIFRS requires dismantling, removal and/or 'make-good' costs on a lease to be included in the cost of the asset (ie: as a deferred expense).

The Corporation's accommodation lease includes an obligation to make-good the lease premises at the end of the lease period. At reporting date, the Corporation was still assessing whether any obligations for decommissioning, restoration or make good are reliably estimable.

Inventory

The Corporation recognises publications inventory at the lower of cost and net realisable value ($nil as at 30 June 2004). The new AEIFRS standard will require inventory held for distribution for no consideration or at a nominal amount to be carried at the lower of cost or current replacement cost.

An assessment was made and it was found that the inventory is now available electronically and a large proportion of the stock is obsolete. The current replacement cost of this inventory is expected to be immaterial. Therefore, no adjustment would be required under AEIFRS.

Employee Benefits

The provision for long service leave is measured at the present value of estimated future cash outflows using market yields as at the reporting date on national government bonds. Under AEIFRS the same discount rate will be used.

AEIFRS also require that annual leave that is not expected to be taken within 12 months of balance date be discounted to its present value. The adjustment will result in a reduction in employee benefits of approximately $2,351 as at 1 July 2004.

Financial Instruments

Finance Minister's Orders have indicated that investments should generally be classified as 'held at fair value through profit and loss' or available-for-sale where the fair value can be reliably measured (in which case, changes in value are initially taken to equity). Fair values will be published prices where an active market exists or by appraisal. Cash and receivables are expected to continue to be measured at cost.

Financial assets and liabilities, except those classified as 'held at fair value through profit and loss' will be subject to impairment testing.

AEIFRS include an option for entities not to restate comparative information in respect of financial instruments in the first AEIFRS report. It is expected the Finance Minister's Orders will require entities to exercise this option. LWA would therefore make the following disclosures:

- The fact that comparatives have not been restated;
- The recognition and measurement basis for the comparative information is based on cost; and
- There is not expected to be a material difference between cost and fair value.

The Corporation will be required to restate opening balances for 2005-06 in respect of financial instruments. In effect, 1 July 2005 becomes the transition date to AEIFRS for financial instruments only. However, as the Corporation's investments consist of term deposits held with financial institutions, the impact of adopting AEIFRS is expected to be immaterial.

Reconciliation of Impacts – AGAAP to AEIFRS

	30 June 2005 * $	30 June 2004 $
Reconciliation of Land and Water Resources Research and Development Corporation's Equity		
Total Equity under AGAAP	3,208,953	1,542,067
Adjustments to accumulated results	(2,351)	(2,351)
Adjustments to reserves	-	72,833
Total Equity under AEIFRS	**3,206,602**	**1,612,549**
Reconciliation of Land and Water Resources Research and Development Corporation 's Accumulated Results		
Total Accumulated Results under AGAAP	3,020,866	1,426,813
Adjustments:		
Employee Entitlements	(2,351)	(2,351)
Total Accumulated Results under AEIFRS	**3,018,515**	**1,424,462**
Reconciliation of Land and Water Resources Research and Development Corporation 's Reserves		
Total Reserves under AGAAP	188,087	115,254
Adjustments:		
Asset Revaluation Reserve	-	72,833
Total Equity under AEIFRS	**188,087**	**188,087**

Reconciliation of Land and Water Resources Research and Development Corporation's Net Profit for the year ended 30 June 2005	
Net Profit under AGAAP	
Adjustment:	1,594,053
Employee entitlements	(2,351)
Net profit under AEIFRS	**1,591,702**

* 30 June 2005 total represents the accumulated impacts of AEIFRS from the date of transition.

Note 3: Economic Dependency

The Corporation was established under the provisions of the PIERD Act 1989 and is controlled by the Commonwealth of Australia.

The Corporation is dependent on funding from the Department of Agriculture, Fisheries and Forestry under Appropriation Acts 1 and 2 for its continued existence and ability to carry out its normal activities.

Note 4: Events Occurring After Reporting Date

Since balance date, the Corporation is not aware of any events that have occurred which will affect the amounts disclosed in the 2004-05 Financial Statements.

Note 5: Third Party Contributions

Third party contributions were received for the following programs and projects in which the Corporation was a participant and managed the activity on behalf of other funding agencies:

ACTIVITY	**Utilised**	Utilised	**Not yet Utilised**	Not yet Utilised
	2005	2004	**2005**	2004
	$	$	**$**	$
Land, Water & Wool	**3,462,253**	4,273,777	**4,255,863**	2,568,114
National Dryland Salinity R&D	**14,421**	439,622	**55,093**	36,552
Social & Institutional R&D	**80,923**	127,067	**84,593**	75,516
Ord-Bonaparte program	**(951)**	177,029	**58,012**	57,062
Managing Climate Variability	**1,099,703**	572,678	**1,189,331**	749,103
Grain and Graze	**2,372,488**	357,129	**964,554**	846,438
Sustainable Irrigation	**2,666,620**	1,845,801	**1,031,000**	793,952
River Contaminants	**343,581**	417,550	**177,076**	170,658
National Rivers Consortium	**645,133**	759,795	**358,920**	634,054
Native Vegetation R&D	**47,630**	575,708	**23,369**	70,999
National Land and Water Resources Audit	**3,257,402**	3,223,027	**1,887,520**	1,700,957
Environmental Water Allocation	**278,648**	-	**469,353**	-
Tropical Rivers	**9,274**	-	**110,726**	-
Native Vegetation and Biodiversity	**24,673**	-	**375,327**	-
Defeating the Weeds Menace	**58,263**	-	**41,737**	-
Other research and development projects	**-**	(13,001)	**-**	149,999
Knowledge and Adoption	**297,631**	-	**422,368**	-
Total	**14,657,692**	12,756,182	**11,504,842**	7,853,404

Of the third party contributions received, $14,657,692 has been recognised as revenue at balance date (2004: $12,756,182)

Note 6: Operating Revenues

	2005	2004
	$	$
6A: Revenue from Government		
Funding from the Department of Agriculture, Fisheries and Forestry under Appropriation Acts 1 and 2	**12,501,000**	12,241,000
Total revenue from Government	**12,501,000**	12,241,000
6B: Interest Revenue		
Deposits	**588,293**	327,278
Total interest revenue	**588,293**	327,278
6C: Net Revenue from Sale of Assets		
Infrastructure, plant and equipment:		
Proceeds from disposal	**9,657**	25,454
Net book value of assets disposed	**(16,031)**	(24,924)
Write offs (note 7D)	**-**	(144,678)
Net loss from disposal of infrastructure, plant and equipment	**(6,374)**	(144,148)
6D: Other Revenue		
Publication sales	**7,454**	17,646
Other revenue	**100,650**	119,118
Total other revenue	**108,104**	136,764

Notes to and Forming Part of the Financial Statements

Note 7: Operating Expenses

	2005 $	2004 $
7A: Employee Expenses		
Wages and salaries	**3,080,961**	2,961,521
Superannuation	**362,760**	362,331
Leave and other entitlements	**91,109**	106,881
Other employee benefits	**71,146**	72,197
Total employee benefits expenses	**3,605,976**	3,502,930
Workers compensation premiums	**23,663**	16,907
Total employee expenses	**3,629,639**	3,519,837
7B: Supplier Expenses		
Goods from external entities	**126,743**	167,167
Services from related entities	**325,776**	57,368
Services from external parties	**3,425,592**	4,296,777
Operating lease rentals	**384,844**	606,259
Total supplier expenses	**4,262,955**	5,127,571
7C: Depreciation and Amortisation		
Depreciation of infrastructure, plant and equipment	**71,622**	118,286
Amortisation of leasehold improvement	**113,035**	56,314
Amortisation of computer software	**22,316**	82,050
Total depreciation and amortisation	**206,973**	256,650
7D: Write-Down of Assets		
Bad and doubtful debts expense	**1,570**	2,654
Plant & equipment – write off on disposal	**-**	144,678
Total write-down of assets	**1,570**	147,332

Note 8: Operating Expenses - Research & Development

	2005 $	2004 $
Services from related entities	**5,552,592**	5,318,946
Services from external parties	**12,600,933**	11,249,129
Total	**18,153,525**	16,568,075

Note 9: Total Operating Expenses

Total operating expenses are classified by functional type as follows:

Administration	**2,533,478**	2,578,783
Research & Development related activities	**21,539,880**	20,862,547
Portfolio Management	**302,892**	703,224
Communication, Knowledge and Adoption	**1,894,443**	1,499,835
Total	**26,270,693**	25,644,389

Note 10: Financial Assets

	2005 $	2004 $
10A: Receivables		
Goods and services	**1,636,355**	2,715,199
Less: Provision for doubtful debts	**(4,224)**	(2,654)
	1,632,131	2,712,545
Interest receivable	**30,529**	30,681
GST receivable	**291,414**	195,673
Other receivables	**7,188**	3,532
Total receivables (net)	**1,961,262**	2,942,431
All receivables are current assets		
Receivables (gross) which are aged as follows:		
Not overdue	**684,431**	2,144,237
Overdue by:		
Less than 30 days	**1,088,162**	781,367
30 to 60 days	**2,527**	-
60 to 90 days	**165,000**	18,346
More than 90 days	**25,366**	1,135
	1,281,055	800,848
Total receivables (gross)	**1,965,486**	2,945,085
The provision for doubtful debts is aged as follows:		
Not overdue	**-**	-
Overdue by:		
Less than 30 days	**-**	-
30 to 60 days	**-**	-
60 to 90 days	**-**	2,654
More than 90 days	**4,224**	-
Total provision for doubtful debts	**4,224**	2,654

Receivables for goods and services
Credit terms are net 30 days (2004 net 30 days).

Interest receivable
The interest rates range from 5.22% to 5.70% (2004 4.73% to 5.22%) and the frequency of payments range from monthly to quarterly.

	2005	2004
	$	$
10B: Investments		
Term deposits	**11,944,759**	655,226
Total investments (current)	**11,944,759**	655,226

Term deposits are with commercial banks. The interest rates range from 5.22% to 5.70% (2004 4.73% to 5.22%) and the frequency of payments range from monthly to quarterly.

Note 11: Non-Financial Assets

11A: Land and buildings		
Leasehold improvements		
- at cost	**92,710**	513,374
- accumulated amortisation	**(13,445)**	(12,464)
	79,265	500,910
- at fair value	**572,686**	-
- accumulated amortisation	**(99,590)**	-
	473,096	-
Total leasehold improvements	**552,361**	500,910
Total land and buildings (non-current)	**552,361**	500,910

11B: Infrastructure, plant and equipment	2005	2004
	$	$
Office equipment		
- at cost	**46,003**	203,604
- accumulated depreciation	**(7,081)**	(51,022)
	38,922	152,582
- at fair value	**177,956**	97,500
- accumulated depreciation	**(62,347)**	(57,838)
	115,609	39,662
Total office equipment	**154,531**	192,244
Furniture and fittings		
- at cost	**-**	5,336
- accumulated depreciation	**-**	(66)
	-	5,270
- at fair value	**11,423**	10,200
- accumulated depreciation	**(1,485)**	(2,652)
	9,938	7,548
Total furniture and fittings	**9,938**	12,818
Total infrastructure, plant and equipment (non-current)	**164,469**	205,062

The revaluations were in accordance with the revaluation policy stated at note 1.8 and were completed by an independent valuer (Australian Valuation Office).

	2005 $	2004 $
11C: Intangibles		
Computer software		
Externally acquired – at cost	**97,706**	90,186
Accumulated amortisation	**(80,610)**	(69,583)
	17,096	20,603
Computer Software		
Internally developed – at cost	**329,035**	329,035
Accumulated amortisation	**(322,362)**	(311,073)
	6,673	17,962
Total intangibles	**23,769**	38,565

11D: Analysis of Property, Plant and Equipment

TABLE A1 - Reconciliation of the opening and closing balances of property, plant and equipment

Item	Land and Buildings	Infrastructure, Plant and Equipment		TOTAL
	Leasehold improvements $	Office equipment $	Furniture and fittings $	$
As at 1 July 2004				
Gross book value	513,374	301,104	15,536	830,014
Accumulated depreciation / amortisation	(12,464)	(108,860)	(2,718)	(124,042)
Opening net book value	**500,910**	**192,244**	**12,818**	**705,972**
Additions: by purchase	92,710	46,003	-	138,713
Net revaluation increment/decrement	71,776	2,452	(1,395)	72,833
Depreciation/amortisation expense	(113,035)	(70,137)	(1,485)	(184,657)
Disposals: other disposals – sale of assets	-	(16,031)	-	(16,031)
As at 30 June 2005				
Gross book value	665,396	223,959	11,423	900,778
Accumulated depreciation / amortisation	(113,035)	(69,428)	(1,485)	(183,948)
Closing net book value	**552,361**	**154,531**	**9,938**	**716,830**

Table B – Assets at valuation

Item	Land and Buildings	Infrastructure, Plant and Equipment		TOTAL
	Leasehold improvement $	Office equipment $	Furniture and fittings $	$
As at 30 June 2005				
Gross value	572,686	177,956	11,423	762,065
Accumulated depreciation/amortisation	(99,590)	(62,347)	(1,485)	(163,422)
Closing net book value	**473,096**	**115,609**	**9,938**	**598,643**
As at 30 June 2004				
Gross value	-	97,500	10,200	107,700
Accumulated depreciation/amortisation	-	(57,838)	(2,652)	(60,490)
Closing net book value	**-**	**39,662**	**7,548**	**47,210**

11E: Analysis of Intangibles

TABLE A1 - Reconciliation of the opening and closing balances of intangibles

Item	Intangibles
	Computer software $
As at 1 July 2004	
Gross book value	419,221
Accumulated depreciation / amortisation	(380,656)
Opening net book value	**38,565**
Additions: by purchase	7,520
Depreciation/amortisation expense	(22,316)
Disposals: other disposals – sale of assets	-
Disposals: other disposals – assets written off	-
As at 30 June 2005	
Gross book value	426,741
Accumulated depreciation/amortisation	(402,972)
Closing net book value	**23,769**

11F: Other Non-Financial Assets

	2005 $	2004 $
Prepayments	**48,874**	76,527
Total other non-financial assets (current)	**48,874**	76,527

Note 12: Provisions

	2005 $	2004 $
12A: Employee Provisions		
Salaries and wages	**260,601**	315,325
Annual leave	**213,856**	191,456
Long service leave	**162,214**	148,268
Aggregate employee benefit liability and related on costs	**636,671**	655,049
Employee provisions are categorised as follows:		
Current	**536,443**	552,546
Non-current	**100,228**	102,503
	636,671	655,049
12B: Suppliers		
Provision for rent and make-good at leased premises no longer occupied	-	156,502
Total provision for suppliers (current)	-	156,502

Note 13: Payables

	2005 $	2004 $
13A: Supplier Payables		
Trade creditors	**1,997,060**	1,197,647
Total supplier payables	**1,997,060**	1,197,647
Supplier payables are categorised as follows:		
Current	**1,861,176**	1,032,132
Non-current	**135,884**	165,515
Total supplier payables	**1,997,060**	1,197,647

Current supplier payables: Payment usually made net 30 days, except for the lease incentive, which is amortised over the life of the lease.

13B: Research & Development Payables		
Accrued Research and Development expenses	**1,920,068**	856,047
Contributions not yet utilised – Research and Development programs	**11,082,474**	7,703,405
Contributions not yet utilised – other	**422,368**	149,999
Contributions in advance	**291,182**	175,000
Total research and development payable (current)	**13,716,092**	8,884,451

Note 14: Equity

14: Analysis of Equity

Item	Accumulated results		Asset revaluation reserve		TOTAL EQUITY	
	2005 $	2004 $	**2005** $	2004 $	**2005** $	2004 $
Opening balance 1 July	**1,426,813**	1,584,524	**115,254**	115,254	**1,542,067**	1,699,778
Net surplus/(deficit)	**1,594,053**	(157,711)	-	-	**1,594,053**	(157,711)
Net revaluation reserve increment	**-**	-	**72,833**	-	**72,833**	-
Closing balance as at 30 June	**3,020,866**	1,426,813	**188,087**	115,254	**3,208,953**	1,542,067
Total equity attributable to the Commonwealth	**3,020,866**	1,426,813	**188,087**	115,254	**3,208,953**	1,542,067

Note 15: Cash Flow Reconciliation

	2005 $	2004 $
15A: Reconciliation of Operating Surplus to Net Cash from Operating Activities		
Reconciliation of operating surplus to net cash from operating activities		
Operating surplus/(deficit)	**1,594,053**	(157,711)
Non-Cash Items		
Depreciation and amortisation	**206,973**	256,650
Loss on disposal of assets	**6,374**	144,148
Changes in Assets and Liabilities		
(Increase)/decrease in receivables	**981,169**	(1,391,903)
(Increase)/decrease in prepayments	**27,653**	(68,557)
Increase/(decrease) in employee provisions	**(18,378)**	(126,193)
Increase/(decrease) in supplier payables	**642,911**	1,070,823
Increase/(decrease) in research & development expenses payable	**4,831,641**	4,125,520
Net cash from operating activities	**8,272,396**	3,852,777
15B: Reconciliation of Cash		
Cash balance comprises:		
Cash on hand	**250**	635
Deposits at call	**4,863,032**	8,016,360
Total cash	**4,863,282**	8,016,995
Balance of cash as at 30 June shown in the Statement of Cash Flows	**4,863,282**	8,016,995

Cash
Temporarily surplus funds, mainly from monthly draw-downs of appropriation, are placed on deposit at call with the Corporation's banker. Interest is earned on the daily balance at the prevailing daily rate for money on call and is paid at month end.

Note 16: Contingent Liabilities and Assets

As at the 30 June 2005 there are no unquantifiable or remote contingencies (2004: Nil)

Deposits at call	**4,863,032**	8,016,360

Notes to and Forming Part of the Financial Statements

Note 17: Director Remuneration

	2005	2004
The number of directors of the Corporation included in these figures are shown below in the relevant remuneration bands:		
$ Nil - $9,999	**1**	1
$ 20,000 - $29,999	**6**	6
$ 30,000 - $39,999	**-**	1
$ 40,000 - $49,999	**1**	-
$190,000 - $199,999	**-**	1
$200,000 - $209,999	**1**	-
Total number of directors of the Corporation	**9**	9
	$	$
Remuneration received or due and receivable by directors of the Corporation	**400,649**	373,910
Total remuneration received or due and receivable by directors of the Corporation	**400,649**	373,910

The part time directors of the Corporation received remuneration and allowances as determined by the Remuneration Tribunal. In accordance with the PIERD Act, the part time directors are appointed by a selection committee. The Executive Director is the only full time director of the Corporation.

Note 18: Related Party Disclosures

Directors of the Corporation

The Directors of the Corporation during the year were:

Mrs R Brazil	Chairman
Mr A Campbell	Executive Director
Mr J Childs	Director
Prof. P Cullen	Director
Mr T Fisher	Director
Mr M Logan	Director
Prof D Pannell	Director
Mr W Watkins	Director and Deputy Chairman
Mr C Willcocks	Government Director

The aggregate remuneration of Directors is disclosed in Note 17.

Loans to Directors and Director related entities

There were no loans made to Directors or Director related entities.

Other transactions with Directors or Director related entities

Research and development expenses were made to the following Director related entities. The Directors involved took no part in the relevant decisions of the board. In the interests of transparency, all transactions with director-related entities are disclosed. These disclosures relate, in the main, to involvement in honorary, part-time advisory roles with respect to the University of Southern Queensland, CSIRO, DIPNR, Water and Rivers Commission and the University of Melbourne. With respect to payments to Agriculture, Fisheries and Forestry, and the University of Western Australia, R&D payments made to these entities were not associated with the areas of responsibility of Mr Willcocks and Professor Pannell respectively.

Mrs R Brazil	Chair, Land Use Research Centre Advisory Committee, University of Southern Queensland.
Prof Peter Cullen	Visiting Fellow, CSIRO Land and Water; Deputy Chair, Science and Information Board, Department of Infrastructure, Planning and Resources, NSW; Member, Board of the Institute of Land and Food Resource, University of Melbourne.
Mr C Willcocks	General Manager, Landcare and Sustainable Industries Branch, Natural Resource Management Division, Department of Agriculture, Fisheries and Forestry.
Prof D Pannell	Professor, School of Agriculture and Resource Economics, Faculty of Natural and Agriculture Sciences, University of Western Australia; Member, Technical Advisory Committee, Water Resources Recovery Catchment, Waters and Rivers Commission, WA.

The Corporation provided research funding to the above agencies. These transactions occurred within the normal terms and conditions of research and development expenses.

Research & development expenses were provided to Director related entities as follows:

	2005	2004
	$	$
Australian National University	-	196,301
Dept Agriculture, Fisheries and Forestry	**151,867**	103,991
Agforce	-	5,500
University of Southern Queensland	**129,700**	883
Water and Rivers Commission, WA	**254,750**	91,818
Department of Infrastructure, Planning and Resources, NSW	**167,640**	-
CSIRO Land & Water	**1,018,324**	871,573
University of Melbourne	**80,445**	
University of Western Australia	**857,351**	1,090,486
Total	**2,660,077**	2,360,552

The Corporation has also received contributions from director related entities to jointly funded projects with the Natural Heritage Trust, and the Department of Agriculture, Fisheries and Forestry. These transactions occurred within the normal terms and conditions of research and development agreements.

Note 19: Remuneration of Officers

	2005	2004
The number of officers who received or were due to receive total remuneration of $100,000 or more:		
$110,000 - $119,999	-	1
$120,000 - $129,999	**1**	-
$130,000 - $139,999	**1**	-
$140,000 - $149,999	**1**	1
$150,000 - $159,999	**1**	2
Total	**4**	4
	$	$
The aggregate amount of total remuneration of officers shown is:	**561,313**	575,425

The officer remuneration includes all officers concerned with or taking part in the management of the Corporation during 2004-05, except the Executive Director. Details in relation to the Executive Director have been incorporated in Note 17: Director Remuneration.

Note 20: Remuneration of Auditors

	2005	2004
	$	$
Amounts received or due and receivable by the Australian National Audit Office (ANAO) for auditing the financial statements for the reporting period	**24,500**	19,000

PricewaterhouseCoopers has been contracted by the ANAO to provide audit services on the ANAO's behalf. Fees for these services are included above.

The fee includes $4,500 for the audit of preparatory financial information for the first time adoption of Australian equivalents to international financial reporting standards

An additional $18,500 was paid or payable to the ANAO for the audit of individual programs for the years ending 30 June 2004 and 2005

Note 21: Average Staffing Levels

	2005	2004
The average staffing levels for the Corporation during the year were:	**33**	37

22A: Interest Rate Risk

Financial instrument	Notes	Floating Interest Rate		Fixed Interest Rate maturing in one year or less		Non-Interest Bearing		Total		Weighted Average Effective Interest Rate	
		2005	2004	**2005**	2004	**2005**	2004	**2005**	2004	**2005**	2004
		$	$	**$**	$	**$**	$	**$**	$	**%**	%
Financial Assets											
Cash on hand	**15B**	-	-	-	-	**250**	635	**250**	635	**N/A**	N/A
Deposits at call	**15B**	**4,863,032**	8,016,360	-	-	-	-	**4,863,032**	8,016,360	**5.1**	4.82
Receivables for goods and services	**10A**	-	-	-	-	**1,961,262**	2,942,431	**1,961,262**	2,942,431	**N/A**	N/A
Term deposits	**10B**	-	-	**11,944,759**	655,226	-	-	**11,944,759**	655,226	**5.5**	5.15
Total		**4,863,032**	8,016,360	**11,944,759**	655,226	**1,961,512**	2,943,066	**18,769,303**	11,614,652		
Total Assets								**19,558,776**	12,435,716		
Financial Liabilities											
Trade creditors	**13A**	-	-	-	-	**1,997,060**	1,197,647	**1,997,060**	1,197,647	**N/A**	N/A
Research & development payables: non-profit institutions	**13B**	-	-	-	-	**1,920,068**	856,047	**1,920,068**	856,047	**N/A**	N/A
Contributions not yet utilised and in advance	**13B**	-	-	-	-	**11,796,024**	8,028,404	**11,796,024**	8,028,404	**N/A**	N/A
Total		-	-	-	-	**15,713,152**	10,082,098	**15,713,152**	10,082,098		
Total Liabilities								**16,349,823**	10,893,649		

22B: Net Fair Values of Financial Assets and Liabilities

Financial assets
The net fair values of cash, deposits on call, receivables for goods and services and term deposit equal their carrying amounts and none are readily traded in organised markets in a standard form.

Financial liabilities
The net fair values contributions not yet utilised and in advance, trade creditors and research & development payables equal their carrying amounts and none are readily traded in organised markets in a standard form.

22C: Credit Risk Exposures

The Corporation's maximum exposures to credit risk at reporting date in relation to each class of recognised financial asset is the carrying amount of those assets as indicated in the Statement of Financial Position.

The Corporation has no significant exposures to any concentration of credit risk.

Note 23: Revenue from Government

Particulars	Corporation's Outputs		Total	
	2005	2004	**2005**	2004
	$	$	**$**	$
Funding from the Department of Agriculture, Fisheries and Forestry under Appropriation Acts 1 and 2	**12,501,000**	12,241,000	**12,501,000**	12,241,000

Note 24: Reporting of Outcomes

24A: Outcomes of the Corporation

The Corporation was structured to meet one outcome in 2004-05:

Knowledge, understanding and informed debate to inspire innovation and action in sustainable natural resource management.

Five outputs were identified for this outcome. These were:

Output 1: Sustainable Primary Industries
Output 2: River Landscapes
Output 3: Vegetation
Output 4: Future Landscapes & Compatible Industries
Output 5: Cross-cutting Activities

24B: Net Cost of Outcome Delivery

	Outcome 1		Total	
	2005 $	2004 $	**2005 $**	2004 $
Expenses				
Administered	-	-	-	-
Departmental	**26,270,693**	25,644,389	**26,270,693**	25,644,389
Total Expenses	**26,270,693**	25,644,389	**26,270,693**	25,644,389
Costs recovered from provision of goods and services to the non-government sector				
Administered expenses	-	-	-	-
Departmental expenses	-	-	-	-
Total costs recovered	-	-	-	-
Other external revenues				
Departmental	-	-	-	-
Interest	**588,293**	327,278	**588,293**	327,278
Revenue from sale of assets	**9,657**	25,454	**9,657**	25,454
Industry contributions	**14,657,692**	12,756,182	**14,657,692**	12,756,182
Other	**108,104**	136,764	**108,104**	136,764
Total Departmental	**15,363,746**	13,245,678	**15,363,746**	13,245,678
Total other external revenues	**15,363,746**	13,245,678	**15,363,746**	13,245,678
Net cost of outcome	**10,906,947**	12,398,711	**10,906,947**	12,398,711

Notes to and Forming Part of the Financial Statements

24C: Revenues and Expenses by Output Groups and Outputs

	Output 1		Output 2		Output 3		Output 4		Output 5		Non attributable		Total	
	2005 $	2004 $	**2005 $**	2004 $	**2005 $**	2004 $	**2005 $**	2004 $	**2005 $**	2004 $	**2005 $**	2004 $	**2005 $**	2004 $
Operating expenses														
Employees	**504,316**	322,629	**160,612**	257,253	**64,912**	80,322	**36,006**	37,739	**345,218**	315,147	**2,518,575**	2,506,737	**3,629,639**	3,519,837
Suppliers	**732,356**	723,393	**407,210**	675,885	**66,563**	78,806	**-**	233,080	**118,910**	800,300	**2,937,916**	2,620,973	**4,262,955**	5,132,427
Grants	**6,672,491**	5,717,171	**6,159,998**	4,911,067	**867,675**	1,741,370	**(22,007)**	119,413	**992,433**	1,235,903	**3,482,935**	2,843,151	**18,153,525**	16,568,075
Depreciation & amortisation	**1,874**	-	**-**	-	**-**	-	**-**	-	**10,575**	-	**194,524**	251,566	**206,973**	251,566
Write down of assets	**-**	-	**-**	-	**-**	-	**-**	-	**-**	-	**17,601**	172,484	**17,601**	172,484
Total operating expenses	**7,911,037**	6,763,193	**6,727,820**	5,844,205	**999,150**	1,900,498	**13,999**	390,232	**1,467,136**	2,351,350	**9,151,551**	8,394,911	**26,270,693**	25,644,389
Funded by:														
Revenues from Government	**1,048,000**	1,201,000	**2,893,000**	2,449,000	**1,146,000**	1,301,000	**-**	410,000	**1,960,000**	2,363,000	**5,454,000**	4,517,000	**12,501,000**	12,241,000
Industry contributions	**6,948,864**	5,643,206	**3,943,257**	3,023,146	**130,566**	575,708	**-**	-	**79,973**	304,096	**3,555,032**	3,210,026	**14,657,692**	12,756,182
Other non-taxation revenues	**203,056**	65,677	**141,089**	97,125	**21,575**	26,715	**581**	7,632	**34,050**	46,482	**305,703**	245,865	**706,054**	489,496
Total operating revenues	**8,199,920**	6,909,883	**6,977,346**	5,569,271	**1,298,141**	1,903,423	**581**	417,632	**2,074,023**	2,713,578	**9,314,735**	7,972,891	**27,864,746**	25,486,678

APPENDICES

APPENDIX 1:

THE CORPORATION'S LEGISLATIVE FOUNDATION

Enabling legislation

Land & Water Australia was established on 3 July 1990 under the ***Primary Industries and Energy Research and Development Act 1989*** (the PIERD Act).

Objects

The legislated objects of all R&D Corporations are set out in section 3 of the PIERD Act. Sub-sections 3(a) to (c) respectively cover primary industry and community benefits, sustainability of natural resources, and social capital development — equating to the economic, environmental and social components of ecologically sustainable development to which the R&D Corporations direct their efforts. Sub-section 3(d) encompasses accountability.

This table lists the four PIERD Act objects.

	Object (PIERD Act section 3)
(a)	Increasing the economic, environmental or social benefits to members of primary industries and to the community in general by improving the production, processing, storage, transport or marketing of the products of primary industries.
(b)	Achieving the sustainable use and sustainable management of natural resources.
(c)	Making more effective use of the resources and skills of the community in general and the scientific community in particular.
(d)	Improving accountability for expenditure on R&D activities in relation to primary industries.

Functions

The functions of Land & Water Australia, deriving from section 11 of the PIERD Act, are to:

- investigate and evaluate the requirements for research and development relevant to issues affecting the management of land, water and related vegetation resources and, on that basis, prepare a five-year R&D plan, review it annually and revise it if required;
- prepare an annual operational plan for each financial year;
- coordinate or fund the carrying out of research and development activities that are consistent with the annual operational plan;
- monitor, evaluate and report on natural resource management research and development activities that are coordinated or funded, wholly or partly, by the Corporation to the Parliament; the Minister and its representative organisations;
- facilitate the dissemination, adoption and commercialisation of the results of its research and development in relation to the activities in respect of which the Corporation was established; and
- such other functions as are conferred on the Corporation by the PIERD Act or any other Act.

Powers

Section 12 of the PIERD Act grants powers to Land & Water Australia to:

- enter into agreements for carrying out research and development activities;
- make applications for and deal with patents vested in the Corporation;
- charge for work or services rendered by the Corporation;
- accept gifts, grants and bequests, and act as a trustee of money or property vested in the Corporation;
- acquire, hold and dispose of real and personal property;
- join in the formation of a company; and
- do anything incidental to any of its powers.

The URL for the PIERD Act is: www.austlii.edu.au/au/legis/cth/consol_act/piaerada1989531/

APPENDIX 2:

COMPLIANCE WITH AUSTRALIAN GOVERNMENT STATUTES AND POLICIES

The following table provides a summary of Land & Water Australia's compliance with specific statutes and government policies.

Statute/Government policy	Obligation	Compliance (see note 1)
PIERD Act	Various	Fully compliant — demonstrated through completed compliance checklist
PIERD Act section (1)(a)(iii)	Revision of the R&D plan and annual operational plan	No revisions during the year
PIERD Act section 28(1)(a)(v) to (viii)	Report if Land & Water Australia applied for or commercially exploited a patent or was granted a licence under a patented invention, had interests in a company or in forming a company, undertook activities to form a company, or transacted significant acquisitions or disposals of real property	Nothing to report during the year
PIERD Act section 28(1)(a)(iv)	Details of Land & Water Australia research projects	See Report of Operations
PIERD Act section143	Ministerial directions	No Minister has notified the Corporation of a Ministerial direction
CAC Act and Auditor-General Act 1997	Various	Fully compliant — demonstrated through completed compliance checklist reviewed by the Corporation's legal advisers and Audit Committee
CAC Act section 15	Significant events	Nil reported during period
CAC Act subsection 47A(2)	Finance Minister 1 December 2004	Compliant
Division 3 section 16 of the Commonwealth Authorities and Companies (Report of Operations) Orders 2002	Disclosure of insurance cover	The Corporation has comprehensive insurance cover with the Australian Government insurer, Comcover, for its directors and officers. In accordance with the contract of insurance with Comcover, the Corporation is prohibited from disclosing details of insurance

Environment Protection and Biodiversity Conservation Act 1999	Reporting obligations as specified at Section 516A	Compliant; Land & Water Australia requires that sustainability of the natural resource base is the overriding objective when researchers and others are designing R&D projects and programs. Project contracts have specific clauses requiring providers to minimise negative environmental impacts. A significant number of projects across the R&D portfolio actively progress the intent of the ***Environment Protection and Biodiversity Conservation Act 1999*** by enhancing understanding of Australia's unique biodiversity, developing measures to limit or reverse threatening processes, and informing management of biodiversity and its habitat. A key requirement of the EPBC legislation is to report on the extent to which the activities of Land & Water Australia accorded with the principles of Ecologically Sustainable Development (ESD). The mission and work of the Corporation advances the Government's principles of ESD.
Freedom of Information Act 1982		See Appendix 3
A New Tax System (Goods and Services) Act 1999		Compliant
Occupational Health and Safety (Commonwealth Employment) Act 1991	Compliance with occupational health and safety policy	Compliant
Archives Act 1983		Compliant

Parliamentary or administrative reviews		No judicial decisions or decisions of administrative tribunals during the reporting period that have had or may have a significant impact on the Corporation's operations. There were no reports from a Parliamentary committee or the Australian Government Ombudsman regarding the operations of the Corporation.
Equal Employment Opportunity Act 1987	The Corporation's terms and conditions of employment promote a work environment free from discrimination in employment matters, ensuring application of the principles of merit and equity. The Corporation also promotes the principles of industrial democracy and a participative work place.	Compliant
Government priorities for national and rural research		See pages 7 to 19
Payments made to representative organisations related to consultation		No payments were made.
Energy efficiency statement		Land & Water Australia supports the Australian Government's enhanced Energy Management Program and energy management guidelines. The guidelines call for improved energy efficiency in relation to vehicles, equipment and building design. The Corporation leases offices as part of a large office complex and does not own large, energy-consuming equipment or commercial vehicles.

Fraud control	Preparation of fraud risk assessments and fraud control plans	Compliant. Comprehensive fraud risk and control plans were completed in 2004–05.
Management of frequent flyer points	All frequent flyer points accumulated by directors and staff on Land & Water Australia business must only be redeemed for the benefit of natural resource management	Compliant
Commonwealth Disability Strategy		Land & Water Australia implemented the strategy to an extent appropriate to the functions and size of the Corporation. The Corporation implements the strategy on two levels: as a provider of services resulting from R&D and as an employer. The Corporation's premises have easy, safe access by people with special orientation and mobility requirements. The Corporation's recruitment and staff development practices seek to eliminate disadvantage that may be contributed for disabilities.
Legislation/ regulations affecting Land & Water Australia business	Land & Water Australia is required to comply with the Australian Government's requirements for regulatory best practice arrangements when proposing new regulation or amending existing regulation which impacts on business.	Land & Water Australia has not been involved in any regulatory proposals during the reporting period.

Note:

1. *Where 'compliant' appears in this column, details of the actions or policy that constitutes compliance are available on request from the Corporation (land&wateraustralia@lwa.gov.au, facsimile 02 6263 6099 or telephone 02 6263 6000*

APPENDIX 3:

FREEDOM OF INFORMATION STATEMENT

As an Australian Government statutory authority, the Corporation is subject to the *Freedom of Information Act 1982.*

Categories of documents

Documents relating to research and development activities funded by the Corporation are held at the office in Canberra, including the following.

Category	Nature	Customarily made available	Not customarily made available*
Planning documents including R&D plan, annual operational plan and annual report	Files		✓
Annual report	Files		✓
	Publications	✓	
Applications and agreements	Files and forms		✓
Financial and project administration	Files and electronic data		✓
	Publications	✓	
Information relating to the commercialisation of research and development	Files		✓
R&D plan	Files		✓
	Publications	✓	
R&D reports and occasional papers	Files		✓
	Publications	✓	
Staff administration & personnel	Files		✓

** For privacy or commercial-in-confidence reasons*

Freedom of information statistics

Freedom of information requests received: nil

Internal review received: nil

Administrative Appeals Tribunal appeals: nil

Facilities and procedures for Freedom of Information access

Members of the public can examine documents at the Corporation's office in Canberra by contacting the Chief Finance Officer on (02) 6263 6000. Office hours are Monday to Friday between 8.30 am and 5.00 pm. Access to the documents incurs a fee as prescribed under the Freedom of Information Act.

This statement is correct to 30 June 2005.

APPENDIX 4:

PROGRAM MANAGEMENT COMMITTEES MEMBERSHIP

Membership is as at 30 June 2005.

Placement of committees in R&D programs reflects the 2004–05 committee structure.

* denotes Chair of the committee in 2004–05.

A list of abbreviations is on page 123.

Improving Sustainability and Addressing Contemporary Issues in Primary Industries

Program	Name	Organisation
Land, Water & Wool (Sustainable Wool Advisory Group)	P. Day	Land & Water Ausrtralia
	T. Dunbabin*	Consultant
	M. Goodacre	Wool producer
	L. Hogan	Wool producer
	M. Lloyd	AWI staff member
	A. Lovett	Land & Water Australia staff member
	A. Southwell	Wool producer
	J. Street	Wool producer
	R. Weatherly	Wool producer
	A. Nicolson	Wool producer
Managing Climate Variability	D. Baker*	GRDC (Chair)
	W. Hall	MLA
	D. Poulter	DAFF
	S. Henderson	Sugar RDC
	T. Davison	Dairy RDC
	G. Wilson	RIRDC
	P. Arkle	NFF
	L. Hogan	AWI
	C. Willcocks	Land & Water Australia
	A. Lovett	Land & Water Australia
	M. Blumenthal	GRDC (observer)
Grain & Graze	I. Donges*	Independent Chair
	M. Blumenthal	GRDC
	G. Fraser	GRDC
	R. Banks	MLA
	K. Baldry	MLA
	I. Rogan	AWI
	J. Childs	Land & Water Australia
	A. Lovett	Land & Water Australia

Sustainable Irrigation	M. Logan * A. McCrea S. Mills T. Gardner G. Sadler B. Pyke P. Hayes C. Thompson D. Flett T. Busher R. Dalton G. Schrale	Land & Water Australia WA WRC Irrigator & ANCID Qld DNRM Qld SunWater CDRC - Horticulture Australia - WA Consortium DAFF SA DWLBC

Managing Australian River Landscapes

Program	Name	Organisation
National Rivers Consortium	J. Olley P. Cullen * G. Fishburn V. Klemm C. Schweizer K. Good	CSIRO Land & Water Land & Water Australia NSW DIPNR WA WRC DEH SA Catchment and Water Management Boards
National Riparian Lands (Management Committee)	T. Fisher T. Aldred	Land & Water Australia Land & Water Australia
National Riparian Lands (Advisory Group)	J. Amprimo R. Applegate M. Askey-Doran A. Meehan T. Fisher* J. Doolan L. Hunt V. Klemm B. Logan N. Power	Qld DNRM NT DIPE Tas DPIWE NSW DIPNR Land & Water Australia Vic DSE DAFF WA WRC Environment ACT SA DWLBC
National River Contaminants	B. Lawrence T. Aldred*	MDBC Land & Water Australia

Managing Vegetation in Rural Landscapes

Program	Name	Organisation
Native Vegetation R&D	J. Childs*	Land & Water Australia
	J. Burdon	CSIRO Plant Industry
	B. Keating	CSIRO Sustainable Ecosystems
	B. Dickens	Greening Australia
	T. Aldred	Land & Water Australia
Joint Venture Agroforestry (managed by RIRDC)	A. Campbell*	Land & Water Australia
	S. Barlow	University of Melbourne
	S. Davis	MDBC
	G. Kile	FWPRDC
	C. Lemerle	RIRDC
	R. Clark	Tasmanian Institute of Agricultural research
	W. Ragg	Australian Forest Growers
	P. O'Brien	RIRDC
	A. Robinson	DAFF
	R. Lott	RIRDC
	B Goody	DEH
	Observers:	
	A. Campbell	CRC for Plant Based Management of Dryland Salinity

Future Landscapes and Compatible Industries

Program	Name	Organisation
Future Landscapes	T. Fisher *	Land & Water Australia
	A. Campbell	Land & Water Australia
	C. Mobbs	Land & Water Australia

Cross-cutting Activities

Program	Name	Organisation
Social and Institutional Research	T. Fisher*	Land & Water Australia
	G. Bammer	ANU
	M. Buxton	RMIT
	P. Green	CMA Southern NSW
	D. Peterson	Productivity Commission
	H. Tomlinson	DAFF
	M. Lester	Land & Water Australia

Program	Name	Organisation
Innovation Call, Scholarships and Fellowships	A. Campbell	Land & Water Australia
	N. Schofield	Land & Water Australia
	J. Childs	Land & water Australia
	S. Cork	Land & Water Australia
	R. Norris	University of Canberra
	A. Roughley	Land & Water Australia
National Land & Water Resources Audit Advisory Council	G. Gorrie *	Independent Chair
	J. Foster	Environment ACT
	J. Gilmour	Department of Infrastructure, Planning & Natural Resources, Northern Territory
	P. Harper	Australian Bureau of Statistics
	C. McRae	Department of Sustainability and Environment, Victoria
	B. Nulsen	Department of Agriculture, Western Australia
	T. Slatyer	Australian Government Department of the Environment and Heritage
	J. Olley	CSIRO Land and Water
	G. Pinkard	Department of Primary Industries, Water & Environment, Tasmania
	C. Robson	Department of Natural Resources and Mines, Queensland
	P. Sutherland	Department of Infrastructure, Planning & Natural Resources, NSW
	W. Watkins	ANZLIC
	R. Wickes	Department of Water, Land and Biodiversity Conservation, South Australia
	B. Wonder	Australian Government Department of Agriculture, Fisheries and Forestry
	B. Beeton	University of Queensland (Observer)
	A. Campbell	Land & Water Australia (Observer)
	J. Donaldson	Australian Government Department of Agriculture, Fisheries and Forestry (Support)
	A. Watt	Australian Government Department of the Environment and Heritage (Support)

APPENDIX 5:

THE CORPORATION'S STAKEHOLDERS AND CLIENTS

The Australian Government, in particular:

- the Minister for Agriculture, Fisheries and Forestry
- the Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry
- the Minister for Transport and Regional Services
- the Minister for the Environment and Heritage
- the Minister for Science
- the Department of Agriculture, Fisheries & Forestry
- the Department of Environment and Heritage
- the National Water Commission
- the Department of Transport and Regional Services
- the Department of Education, Science and Training
- the Chief Scientist

Land & Water Australia's Representative Organisations:

- the National Farmers Federation
- the Australian Conservation Foundation

Australian Government NRM Initiatives:

- Natural Heritage Trust
- National Action Plan for Salinity and Water Quality
- National Landcare Program
- National Water Initiative

Funding agencies that provide collaborative support within commissioned R&D programs, in particular:

- other Research & Development Corporations
- the Murray Darling Basin Commission
- State Government Departments

Key target audiences for Land & Water Australia's outputs, in particular:

- regional NRM bodies and catchment bodies
- industry organisations, farmers and other land managers, and the people who advise them
- State agencies, local government, NGOs and indigenous organisations
- others involved in the use, management, regulation or conservation of Australia's land, water and vegetation resources.

The research and development community, in particular:

- Universities and CRCs
- CSIRO and Other Australian Government research organisations
- State agencies and consultants

The public at large who have an interest in the sustainability of Australia's land, water and vegetation resources.

LIST OF ABBREVIATIONS

ANAO	Australian National Audit Office
ANU	Australian National University
ANZLIC	the Spatial Information Council (formerly known as the Australian and New Zealand Land Information Council)
ARRIP	Australian Rural Research in Progress
Audit	National Land & Water Resources Audit
BRS	Bureau of Rural Sciences
CAC Act	*Commonwealth Authorities and Companies Act 1997*
COAG	Council of Australian Governments
CRC	Cooperative Research Centre
CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAFF	Australian Government Department of Agriculture, Fisheries and Forestry
DEH	Australian Government Department of Environment and Heritage
DIPE	Department of Infrastructure, Planning and Environment (Northern Territory)
DIPNR	Department of Infrastructure, Planning and Natural Resources (NSW)
DME	Department of Mines and Energy (SA)
DNRM	Department of Natural Resources and Mines (QLD)
DPI	Department of Primary Industries (QLD)
	Department of Primary Industries (VIC)
DPIWE	Department of Primary Industries, Water and Environment (Tasmania)
DSE	Department of Sustainability and Environment (Victoria)
DWLBC	Department of Water, Land and Biodiversity Conservation (SA)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999 (Cth)*
ESD	ecologically sustainable development
FWPRDC	Forest and Wood Products Research and Development Corporation
GRDC	Grains Research and Development Corporation
ISO	International Standards Organization
JVAP	Joint Venture Agroforestry R&D Program
LWA	Land & Water Australia (legislated title: Land and Water Resources Research and Development Corporation)
LWW	Land, Water and Wool
MDBC	Murray–Darling Basin Commission
MLA	Meat and Livestock Australia
NAP	National Action Plan for Salinity and Water Quality
NDSP	National Dryland Salinity Program
NFF	National Farmers' Federation
NHT	Natural Heritage Trust
NPSI	National Program for Sustainable Irrigation
NRC	National Rivers Consortium
NRM	natural resource management
NR&M	[Department of] Natural Resources and Mines (Queensland)
PIERD Act	*Primary Industries and Energy Research & Development Act 1989*
PIRSA	Primary Industry and Resources South Australia
R&D	research and development
RDC	Research and Development Corporation
RIRDC	Rural Industries Research and Development Corporation
SIRP	Social and Institutional Research Program
SRDC	Sugar Research and Development Corporation
WRC	Water and Rivers Commission (WA)

COMPLIANCE INDEX

This index shows the numbers for pages on which information is provided in response Australian Government legislation and policies. A table providing a summary of Land & Water Australia's compliance with specific statutes and government policies is at Appendix 4 on page 118.

When this Annual Report has not addressed a compliance subject (usually because no activity occurred under that heading during the year), the subject entry is followed by '—' rather than by a page number.

ALPHABETICAL INDEX

Land & Water Australia is a statutory authority within the Australian Government's Agriculture, Fisheries and Forestry portfolio

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