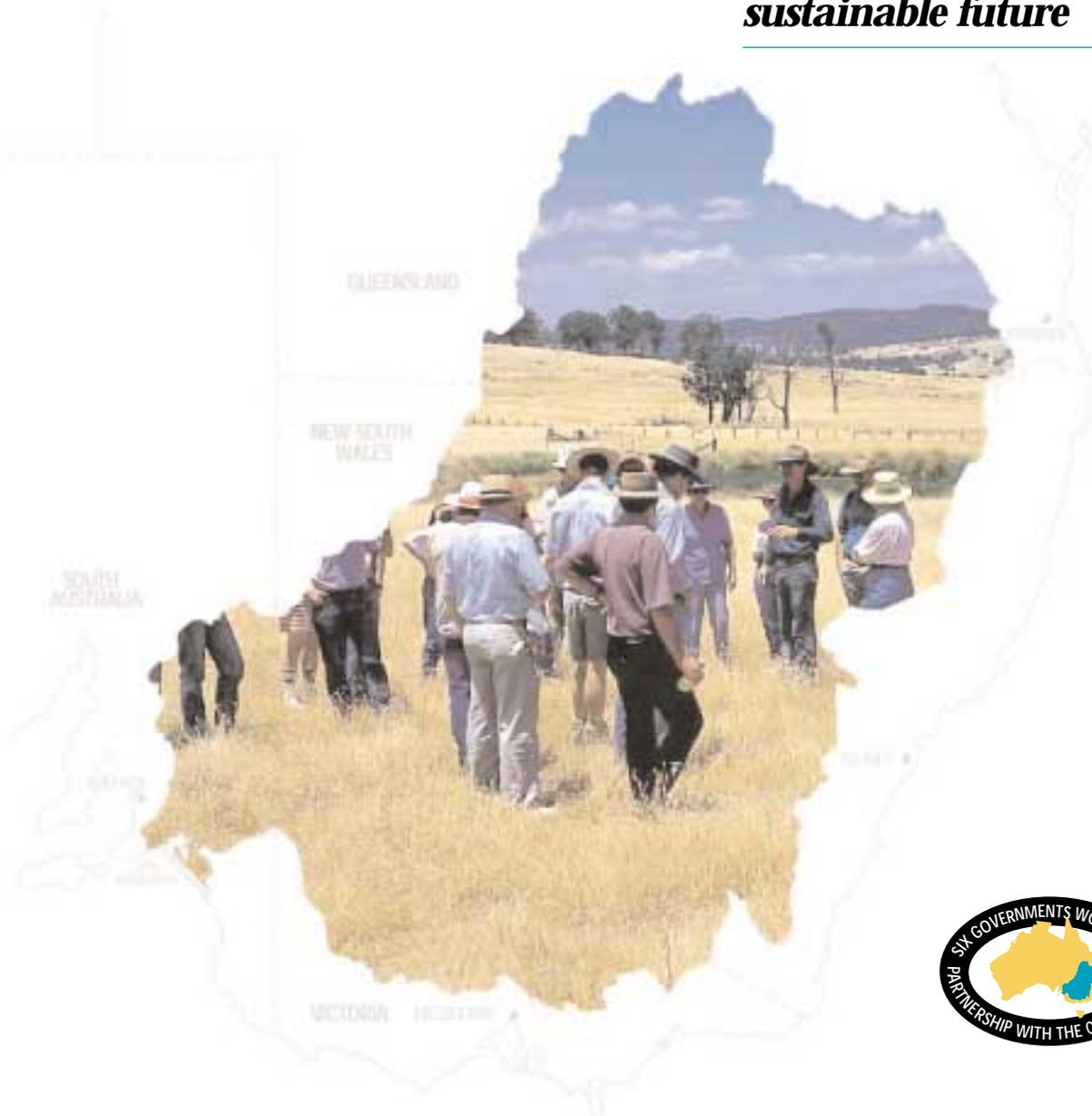


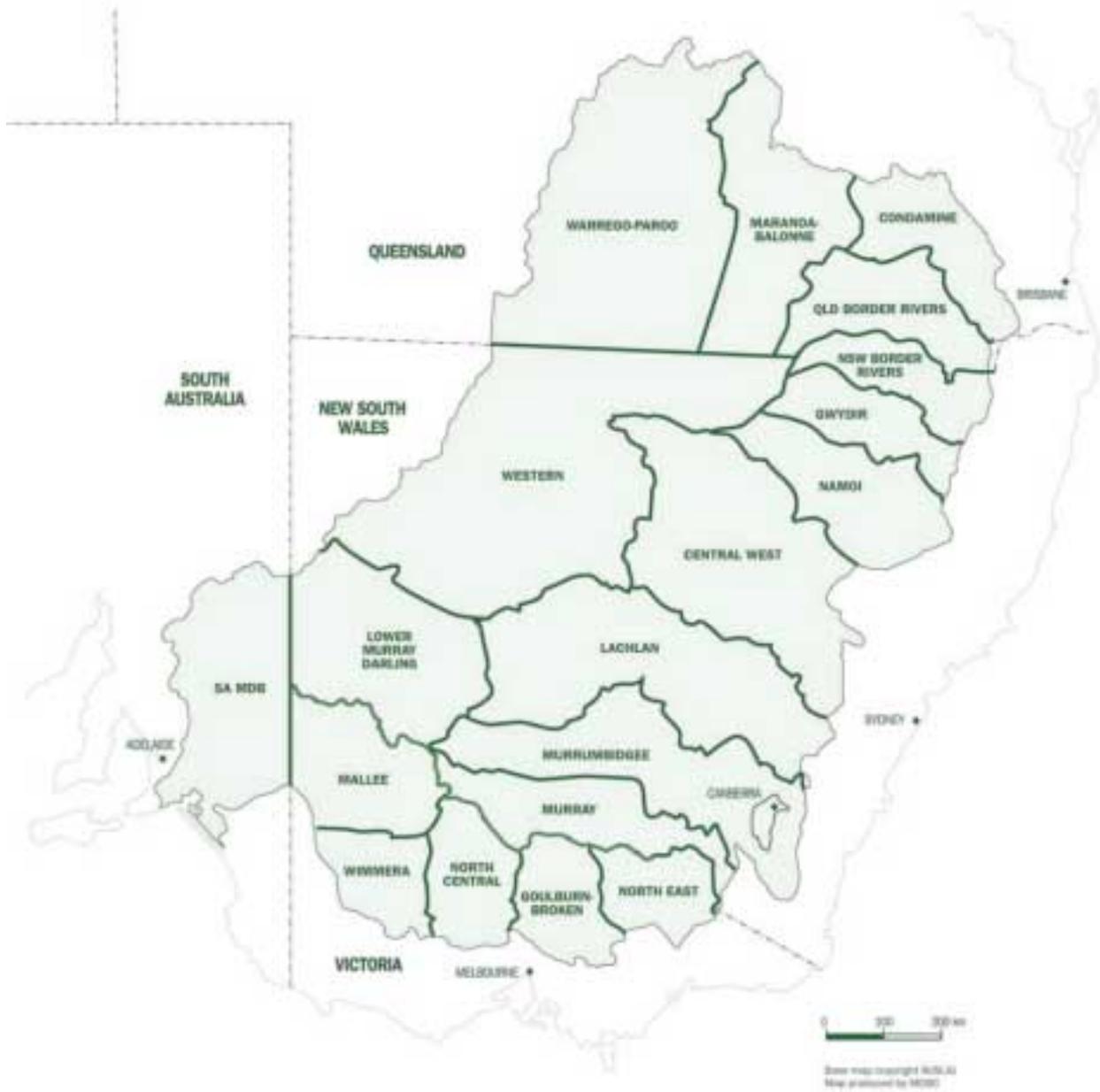


# *Integrated Catchment Management in the Murray- Darling Basin 2001-2010*

*Delivering a  
sustainable future*



*Catchment management regions of the Murray-Darling Basin*



# *Integrated Catchment Management in the Murray– Darling Basin 2001–2010*

***Delivering a  
sustainable future***

## ***A statement of commitment by community and governments on future management of the natural resources of the Murray–Darling Basin***

We the community and governments of the Murray–Darling Basin commit ourselves to do all that needs to be done to manage and use the resources of the Basin in a way that is ecologically sustainable.

The Basin community and governments have agreed to this commitment.

Rural and regional communities, landholders and land managers, Indigenous people, Landcare groups, urban people, industries, businesses, special interest groups and individuals make up the Basin community. Basin governments include Commonwealth, State/Territory and local governments. The Basin community and governments are partners in integrated catchment management.

J U N E 2 0 0 1

Integrated Catchment Management in the  
Murray–Darling Basin 2001–2010

Published by the Murray–Darling Basin  
Ministerial Council

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## Purpose of this document

This document is a call to the Basin community and governments to protect the health and productivity of the Murray–Darling Basin.

The Murray–Darling Basin is under threat. Rising salinity and a high demand for limited water and land resources are two of the major problems it faces. We cannot protect the Basin under current levels of resource use. All partners must decide what they want for the future, what is possible given the constraints, and how to achieve these aims by working together.

This will involve making some difficult choices, but we have the opportunity now to build a sustainable future for the Basin and its community. Change can only come about if we work together in partnership.

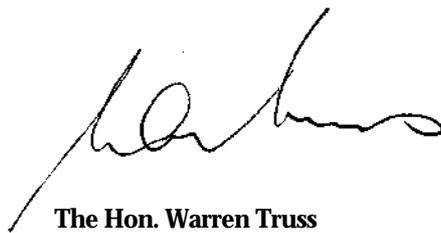
More than ten years ago the governments of New South Wales, Victoria, South Australia and the Commonwealth, as partners in the Murray–Darling Basin Ministerial Council, agreed to manage the natural resources of the Basin through integrated catchment management (ICM). The Queensland and Australian Capital Territory governments have now also joined the Council.

This document outlines an approach to ICM that is based on targets for catchment health and progressive evolution of the way we organise communities, institutions and governments to meet the challenges and opportunities of the future.

Targets are already in place for diversions of the Basin's water, and for River Murray salinity. We are developing targets for the reduction of salinity in all major tributaries of the Murray–Darling river system. But we must protect our catchments if we are to protect our water. We will therefore need to set targets for other aspects of catchment health such as nutrients in rivers, water sharing, riverine ecosystem health and terrestrial biodiversity. These targets will need to be integrated with each other, and with our social and economic aspirations, to achieve the catchment health we seek.

The Basin community and governments must commit to the protection of the health and productivity of the Murray–Darling Basin. The ICM approach will take another ten years to build. It will require substantial government, community and industry leadership and commitment, and will significantly test the capacities of us all—government, community and industry—to manage the natural resource base for the benefit of both present and future generations.

This document, distributed in draft form by the Ministerial Council and the Murray–Darling Basin Community Advisory Committee in late 2000, has the overwhelming support of the broad Basin community and governments. It is our joint affirmation of commitment to integrated catchment management as the way we will manage and care for the Basin into the future.



**The Hon. Warren Truss**

Chairman, Murray–Darling Basin Ministerial Council  
Minister for Agriculture, Fisheries and Forestry  
(Commonwealth)



**The Hon. Richard Amery**

Minister for Agriculture, and Minister for Land and  
Water Conservation (NSW)



and Minister for Women's Affairs (Vic.)



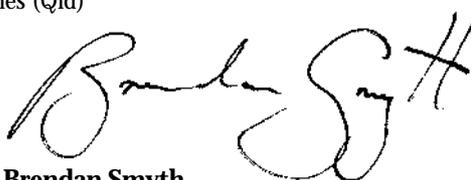
**The Hon. Mark Brindal**

Minister for Water Resources, Minister for  
Employment and Training, and Minister for  
Youth (SA)



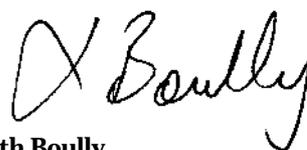
**The Hon. Stephen Robertson**

Minister for Natural Resources, and Minister for  
Mines (Qld)



**Mr Brendan Smyth**

Minister for Urban Services (ACT)



**Leith Bouilly**

Chairman, Community Advisory Committee of  
the Murray–Darling Basin Ministerial Council



# *The Murray–Darling Basin Initiative*

The Murray–Darling Basin *Initiative* is a cooperative arrangement between government and community—through the governments of New South Wales, Victoria, South Australia, Queensland, the Australian Capital Territory and the Commonwealth, and a Community Advisory Committee. It is the largest integrated catchment management program in the world and covers an area of over one million square kilometres.

The *Initiative* seeks to achieve the internationally agreed goals of ecologically sustainable development within the Basin.

*Using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased.*

The *Initiative* seeks to respond to issues which:

- require joint government action or common action by two or more parties; or
- require action by an individual State or Territory but which could have implications for integrated resource management across the Basin.

Partners to the *Initiative* commit to working together for the benefit of the Basin, knowing that cooperation will achieve much more than action by any individual jurisdiction, and that only a true partnership between governments and the community can achieve the changes required for a secure future.

The main focus of the *Initiative* has been the shared water resources of the Basin. However, partners acknowledge that protecting these shared resources requires a whole-of-catchment approach, one that takes account of the relationships between natural systems, including land, water and other environmental resources. Any decision on the use and management of natural resources also affects economic and social values of regional communities. Therefore, *Initiative* partners are committed to strengthening ICM and the partnership between governments and the community over the next decade.



Lake Victoria

Peter Solness

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David Eastburn

*Wentworth at the junction of the Darling and Murray Rivers*



# **Introduction**

## **The Murray–Darling Basin**

The environmental health of the Murray–Darling Basin (the Basin)—the condition of its land, water and other environmental resources—and its continued productivity are important to all Australians.

The Basin is Australia’s largest and most developed river system, covering over one million square kilometres of land from southern Queensland through to the Murray mouth in South Australia. The Basin incorporates 75 per cent of Australia’s irrigation and provides just over 41 per cent of Australia’s gross value of agricultural production. The Basin has a diverse range of landscapes, ecosystems, land uses, and climates.

Its rivers provide drinking water for over three million people, more than one-third of whom live outside its borders. The Basin encompasses 30 000 wetlands; 11 of these wetlands have been listed under the Ramsar Convention on Wetlands of International Importance.

The native animals and vegetation of the Basin represent much of Australia’s unique flora and fauna, and many native species rely heavily on the 93 per cent of the Basin’s land not included in national parks and other reserves.

## **1990–2000**

In 1990 the Murray–Darling Basin Ministerial Council launched its Natural Resources Management Strategy in response to declining Basin health. That strategy led to a major change in management of the Basin’s natural resources, based on integrated catchment management (ICM) and delivered through a community-government partnership.

### **Integrated catchment management**

Integrated catchment management (ICM) is a process through which people can develop a vision, agree on shared values and behaviours, make informed decisions and act together to manage the natural resources of their catchment. Their decisions on the use of land, water and other environmental resources are made by considering the effect of that use on all those resources and on all people within the catchment.

The decision to manage our natural resources on the basis of catchments reflects the importance of water to the Basin environment, and to the people who live and work within the Basin.

The boundaries for ICM in the Basin are based on catchments, but in some cases also take account of political, economic and social boundaries. (A map of catchment management regions in the Basin appears on the inside front cover.)

### **Government and community partnership**

The governments of New South Wales, Victoria, South Australia, Queensland, the Australian Capital Territory and the Commonwealth work through a Ministerial Council comprising the ministers of the land, water and environment portfolios. The Ministerial Council acts in partnership with the community through the Community Advisory Committee that includes a representative from each of the catchments in the Murray–Darling Basin. The Ministerial Council’s charter is to:

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

The Ministerial Council has agreed that it will carry out its charter primarily through integrated catchment management.

Over the past ten years the community and governments of the Basin have worked together to better manage its natural resources for the benefit of present and future generations. Substantial progress has been made over that time, including:

- establishment of catchment management organisations to deliver change within catchments;
- development of catchment strategies and action plans to guide and coordinate efforts and investments;
- a wide range of actions on both public and private land to implement those strategies and plans;
- significant community action through Landcare, Waterwatch and similar activities;
- a cap on diversions of water from the Basin’s rivers;
- major actions to improve water quality and environmental flows;





David Eastburn

Lower Murrumbidgee River near Balranald

- reforms for the management and use of water and vegetation;
- development of Basin-wide strategies, to coordinate actions for tackling problems such as salinity and outbreaks of blue-green algae in rivers; and
- substantial additions to the understanding of the landscape and the needs of the community.

While we have achieved significant progress, much remains to be done.

- Water quality and ecosystem health are continuing to decline as a consequence of past—and in some cases continuing—mismanagement of the Basin's land, water and other environmental resources.
- Competition and conflict between the agricultural, urban and environmental sectors for the scarce water resources of the Basin is increasing.
- Land, water and other environmental resources are often used beyond their capabilities.

These pressures are causing great concern in the community, and conflict both within and outside the Basin—conflict that will escalate over time. To manage this conflict, we will need to improve our knowledge and develop strong institutional arrangements.

### **Solutions**

While we have made significant progress to date, we must now accelerate efforts to protect both the landscape and regional communities. We need to radically change the management and use of Basin resources in order to maintain healthy ecosystems and productive land use.

The volunteer approach, through successful community-driven initiatives such as Landcare and Waterwatch, is insufficient on its own to drive the necessary change. The way forward requires changes in land use, changes in management practices, and changes in the way governments and the community work together. Just as the benefits of past and current resource use have been shared by all Australians, so the responsibility for our future actions falls on all Australians.

We—governments, industries, communities, and individuals—now need to commit to a new way of managing the Basin's resources, building on the successes of the past and taking a long-term view. This document outlines that commitment and describes what we all must do over the next decade, knowing that the difficulties we all face will not be solved over this period. The systems we establish over the next ten years will require our long-term commitment to provide a secure future for regional communities and continued benefits for the nation.

# ***Commitment***

Rural and regional communities, landholders and land managers, Indigenous people, Landcare groups, urban people, industries, businesses, special interest groups and individuals all have a vital interest in the Basin. These people and organisations make up the Basin community. Basin governments include Commonwealth, State/Territory and local governments. The Basin community and governments are partners in integrated catchment management.

**We the community and governments of the Murray–Darling Basin commit ourselves to do all that needs to be done to manage and use the resources of the Basin in a way that is ecologically sustainable.**

We all share responsibility for the health of the Basin. The managers of our land and water are best placed to make the necessary changes, but they will need the active involvement, support and assistance of all partners.

Our past actions have caused the landscape—its land, water and other environmental resources—to degrade. This has had significant consequences for the people who live in the Basin. We do not assign blame for those actions. Instead, we look to the future, and seek to balance our need for production with the need to protect the environmental health of the Basin so that future generations may also benefit from this fragile and unique landscape.



The Geehi

David Eastburn

Over the next decade, we aim to reverse the declining trend in Basin health, knowing that full restoration of the Basin’s environment is not possible, and that there will be economic and social costs associated with achieving this aim.

We will build on national approaches to ensure that we are moving in the same direction as the rest of the nation. The goals, values and principles for ICM in the Basin reflect those for natural resources management more broadly across Australia. They are consistent with discussions on the directions of future national approaches to natural resources management.

## ***We will:***

- agree on the limits to the stresses which can be placed on the Basin’s natural resources, by setting targets for catchment health;
- strengthen links between land use planning and catchment planning;
- support and strengthen catchment management arrangements;
- clearly define responsibilities and accountabilities;
- ensure that all partners, including individuals, groups and organisations, have the capacities to play their part; and
- commit adequate resources to achieve our goals.

## ***Our goals***

We seek to achieve:

### ***Healthy rivers***

- Providing water for the environment, consumption, and recreation.

### ***Healthy ecosystems and catchments***

- Maintaining or enhancing the integrity of soils, surface water and groundwater, flora and fauna.

### ***Innovative, competitive and ecologically sustainable industries***

- Using natural resources within their capabilities, to generate wealth for social, economic and environmental well-being.

### ***Healthy regional communities***

- Managing the natural resources of catchments in a way that is ecologically sustainable and supports a prosperous regional community.



## Our values

We agree to work together, and ensure that our behaviour reflects the following values.

### *Courage*

- We will take a visionary approach, provide leadership and be prepared to make difficult decisions.

### *Inclusiveness*

- We will build relationships based on trust and sharing, considering the needs of future generations, and working together in a true partnership.
- We will engage all partners, including Indigenous communities, and ensure that partners have the capacity to be fully engaged.

### *Commitment*

- We will act with passion and decisiveness, taking the long-term view and aiming for stability in decision-making
- We will take a Basin perspective and a non-partisan approach to Basin management

### *Respect and honesty*

- We will respect different views, respect each other and acknowledge the reality of each other's situation.
- We will act with integrity, openness and honesty, be fair and credible, and share knowledge and information.
- We will use resources equitably and respect the environment.

### *Flexibility*

- We will accept reform where it is needed, be willing to change, and continuously improve our actions through a learning approach.

### *Practicability*

- We will choose practicable, long-term outcomes and select viable solutions to achieve these outcomes.

### *Mutual obligation*

- We will share responsibility and accountability, and act responsibly, with fairness and justice.
- We will support each other through necessary change.

## Our principles

We agree, in a spirit of partnership, to use the following principles to guide our actions.

### *Integration*

- We will manage catchments holistically; that is, decisions on the use of land, water and other environmental resources are made by considering the effect of that use on all those resources and on all people within the catchment.

### *Accountability*

- We will assign responsibilities and accountabilities.
- We will manage resources wisely, being accountable and reporting to our partners.

### *Transparency*

- We will clarify the outcomes sought.
- We will be open about how to achieve outcomes and what is expected from each partner.

### *Effectiveness*

- We will act to achieve agreed outcomes.
- We will learn from our successes and failures and continuously improve our actions.

### *Efficiency*

- We will maximise the benefits and minimise the costs of actions.

### *Full accounting*

- We will take account of the full range of costs and benefits, including economic, environmental, social and off-site costs and benefits.

### *Informed decision-making*

- We will make decisions at the most appropriate scale.
- We will make decisions on the best available information, and continuously improve knowledge.
- We will support the involvement of Indigenous people in decision-making, understanding the value of this involvement, and respecting the living knowledge of Indigenous people.

### *Learning approach*

- We will learn from our failures and successes.
- We will learn from each other.

## The outcomes we seek

The outcomes we seek will differ from catchment to catchment. They will be the result of the choices we make for that catchment. They will relate to the level of protection that we want to provide for assets at risk from continuing degradation including:

- environmental assets (e.g. wetlands, fish, birds and native vegetation);
- economic assets (e.g. drinking water, productive land, built infrastructure, water for irrigation and stock, and tourist destinations); and
- social assets (e.g. rural and regional communities, cultural sites and values, and recreational areas).

Some of these outcomes will be of prime importance for the overall health of the Basin. These Basin outcomes will reflect the outcomes of national and State/Territory initiatives for natural resources management. A list of some of these initiatives is shown at the end of this document.

## Making choices

The health of our catchments underpins our ability to continue to draw economic and social benefits from the Basin. We know that in many instances we must radically change the way we manage and use the Basin's natural resources to keep our catchments healthy. The changes will not be easy, and we will need to make difficult choices. Many of the changes will involve trading wealth between communities and individuals.

We cannot continue activities that degrade the environment for short-term economic benefits. Equally, we cannot protect every part of the Basin. Where the natural resources of the Basin are largely undisturbed, we will work to protect and conserve these resources. In other parts of the Basin, where natural systems have been significantly disturbed, we have to find a balance between the use of resources for consumption and production and the need to protect environmental health. In finding the balance, we will acknowledge the dynamic nature of natural systems. We must also recognise the enormous benefit we derive from the use of the Basin's natural resources, and acknowledge the right of future generations to continue to benefit from these resources.



*Learning about our rivers*

David Eastburn

Where we can achieve improved catchment health and improved economic and social benefits, we will actively use these opportunities. However, such opportunities may be limited, and finding a suitable balance between using resources and protecting environmental health will often involve difficult decisions and will mean making trade-offs.

When using the Basin's resources, we often cause environmental damage. Equally when we choose to protect the environment for long-term security, we often have to forego some short-term economic return, putting pressure on regional communities. Such choices, or trade-offs, will be made at property, sub-catchment, catchment and Basin scales. In every trade-off, there will be some who benefit and some who suffer loss. We need to determine the limits to the stresses that can be placed on the Basin's natural resources to help us make decisions about these trade-offs. Delivering outcomes will require leadership and commitment, a process to manage conflict, financial and human resources, improved skills in decision-making, and processes to support those who will be adversely affected by decisions.



### **We will:**

- be accountable for achieving outcomes;
- take advantage of opportunities to change to natural resource uses which protect the landscape while providing economic benefits for regional communities;
- use the Basin's resources more efficiently;
- work to protect and conserve the less disturbed natural areas of the Basin;
- be prepared to make hard decisions;
- support those who will be adversely affected by decisions; and
- monitor the effects of our actions on catchments and on the well-being of regional communities.

## **Knowledge**

Change also requires knowledge about the catchment environment, the people who live in the catchment and the economic capacity of the catchment community. We must understand the actions we might take to change the management of Basin resources and the effects of those actions. However, we cannot wait for perfect knowledge. Rather we need to act in the light of the best available knowledge, managing risks and continually learning from the results.

Knowledge will be required at all scales (national, Basin, State, catchment, local and property scales). There must be strong links between the knowledge at these different scales, and in particular, we will need to understand how action at property scale will change the health of the catchment and the Basin. We already have a

great deal of knowledge about our natural resources. We must build and expand on this existing knowledge base, and integrate it with knowledge about the economic and social needs and aspirations of the Basin community.

To inform our decisions, we need sound knowledge that is trusted by decision-makers and resource managers, and we need to share our knowledge in way that can be understood by our partners. We must communicate our knowledge through education, training, listening to each other, forming networks, and actively seeking to engage our partners. We need to draw upon the wealth of information that resides in government agencies, with the Basin community, within industry, with landholders and land managers, with Indigenous people, and with special interest groups.

Over the next few years, we will work to increase our knowledge, including:

- identifying the environmental, economic and social assets at risk from degrading catchment health;
- benchmarking natural resource condition and trends in condition to inform target setting;
- predicting the environmental, economic and social impacts of a range of options for action;
- monitoring and evaluating the impacts of our actions;
- analysing successes and failures so that we can learn from them;
- understanding change, when it is needed and how to achieve it;
- understanding how best to engage our partners and to share our knowledge; and
- improving methods to support monitoring and evaluation.



*Improving our knowledge*

David Eastburn

We will need to ensure that information is safely stored, well managed, readily accessible and easily understood. Information management systems will be strengthened, particularly at catchment scale, and will be linked at all scales to promote knowledge sharing.

**We will:**

- make decisions now, using the best information available;
- review and improve our knowledge on the basis of new information;
- commit to undertake research to improve our knowledge;
- work together so that research is useful and relevant to all managers of natural resources;
- share our knowledge effectively; and
- store and manage our information effectively, and make it accessible and easily understood.



Arthur Mostead

*Rural communities will be supported in developing capacities*

**Capacity building**

We will only change the way we manage the Basin’s natural resources if we have the capacity to do so. We must ensure that all partners have the capacity to play their part, and are able to meet their responsibilities. Capacity covers a range of areas, including legal, institutional, planning, management, financial, technical and information skills and capacities, and leadership skills.

Institutional capacity building will be an important aspect of integrated catchment management over the next decade. Institutional capacity building is needed in government agencies, in research and development, in industry, in local government and in catchment management arrangements.

Community capacity building will range from leadership development through to support for individuals faced with low economic capacity to change the way they manage natural resources. Catchment communities will be faced with difficult decisions, and will need a range of skills including a broad understanding of natural resources and the interactions with the economic and social aspirations of the catchment community, conflict resolution skills, communication skills and investment targeting and management skills.

The capacity of each partner to play their part will depend critically on their ability to understand and to participate in decision-making. Therefore we must communicate with and engage our partners in a way that is meaningful to them. In particular, we will work to engage those groups that are key decision-makers but for various reasons have not been adequately involved to date, including local government, Indigenous people, industry groups, and non-English speakers. We will use best practice communication and engagement processes to ensure that all partners are involved and can have their views taken into account.

**We will:**

- actively build capacities of all partners, including the legal, institutional, planning, management, financial, technical and information skills and capacities;
- involve and engage all partners in a way that is meaningful to them;
- use best management practices in communication and engagement of partners; and
- actively work to engage all partners, including local government, Indigenous people, industry groups, and non-English speakers.



# Targets

To create a better future we must develop management systems that allow the community and governments at all levels to work together for both public and private good. We will use targets as a way to guide our actions and to measure progress toward achieving the outcomes we agree.

We will use targets because we require systems that:

- benchmark current catchment health;
- show trends in catchment health; and
- allow us to agree how healthy our catchments should be, knowing the full costs associated with achieving this degree of health.

To protect the health of the Basin and its catchments, we will base our management systems on targets as a way of clearly saying what we want to achieve for each of our catchments. Targets must provide a clear view of what constitutes a healthy catchment and point not only to the health of each catchment, but also the health of the Basin as a whole.

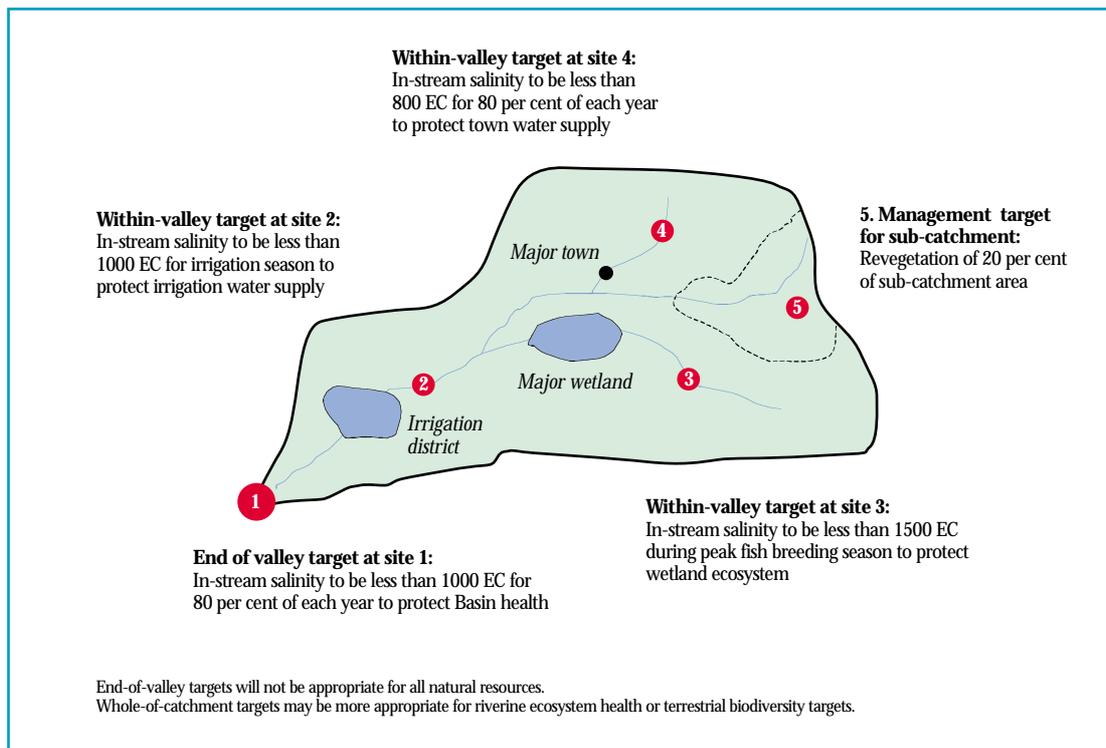
Our actions at Basin, catchment, sub-catchment and property scales must aim to achieve agreed targets. However, we must remember that the targets are not the outcomes we seek. Targets are

merely a way to measure progress toward achieving those outcomes. We must regularly check our targets to ensure that they will progressively move us closer to achieving the environmental, economic and social outcomes resulting from protecting catchment health.

### We will set targets that are:

- meaningful, clearly reflecting outcomes we seek;
- measurable;
- at appropriate scales;
- comparable across the Basin;
- benchmarked against current natural resource condition and trend in condition;
- set in specific locations, relative to valuable assets (e.g. upstream from a significant wetland);
- time-bound, with achievable targets moving progressively closer to agreed outcomes;
- based on best available science;
- clearly linked to management actions; and
- able to take account of the dynamic nature of the Basin's natural systems.

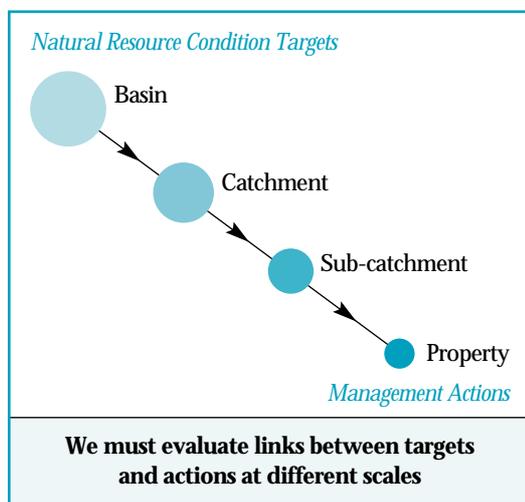
**FIGURE 1: Examples of targets for a catchment**



Rehabilitation, conservation and good management of the land and water of the Basin through the actions of individuals and groups are essential for catchment and Basin health. Targets at the Basin and catchment scales for resource condition will be achieved by actions taken throughout the catchment, often by land managers on individual properties. Therefore targets for resource condition will translate to targets for improving the management of the resources of the catchment.

We will need to evaluate the links between targets at different scales and between resource condition targets and management targets.

**FIGURE 2: Targets and management actions**



This will help us to be confident that on-ground actions will lead to overall improvement in Basin health, and that catchment and Basin targets are informed by the needs of individuals whose management of the natural resources will so strongly affect catchment health.

### Targets for catchment health

Across the Basin we will set targets for those natural resources that require particular attention because:

- they require joint action across the States of the Basin; or
- the activities in one part of the Basin affect the quality of these resources in other parts of the Basin.

*During the next ten years, we will set targets across the Basin for:*

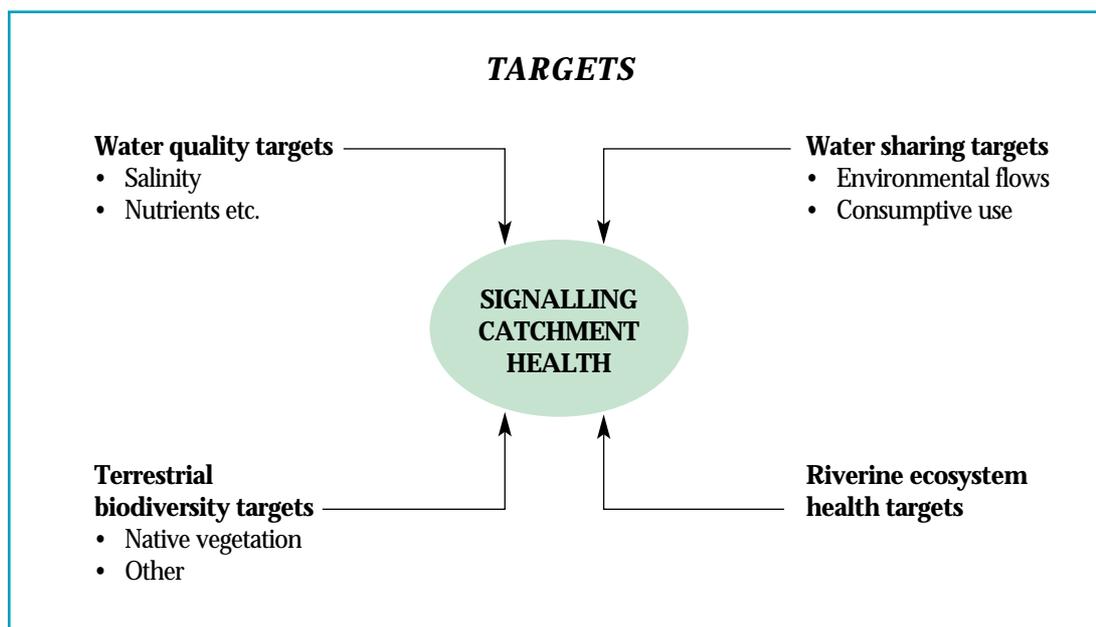
- water quality,
- water sharing,
- riverine ecosystem health, and
- terrestrial biodiversity.

We will bring these targets together in an integrated way for each catchment, acknowledging the links between them, to help signal the overall health of that catchment.

These targets may be supplemented by other targets specific to each individual catchment.



**FIGURE 3: Relationship between targets and aspects of catchment health**



Other natural resource issues, such as soil health, groundwater, pest plants and animals and air quality, play a vital role in catchment health. These issues will need to be taken into account in setting and achieving the above targets. Some catchment communities may set natural resource targets for their catchments additional to those set across the Basin, so that the core signals of catchment health for their catchment include all their key issues.

### Target setting

In setting targets we will need to identify the assets we wish to protect and the level of protection we seek, taking account of the costs of intervention, and knowing the consequences of not intervening. The agreed levels of protection of specific assets are the outcomes we seek. In agreeing these outcomes, we will often need to make difficult choices, as in many cases we will not be able to protect all the economic, environmental and social assets of the catchment and the Basin.

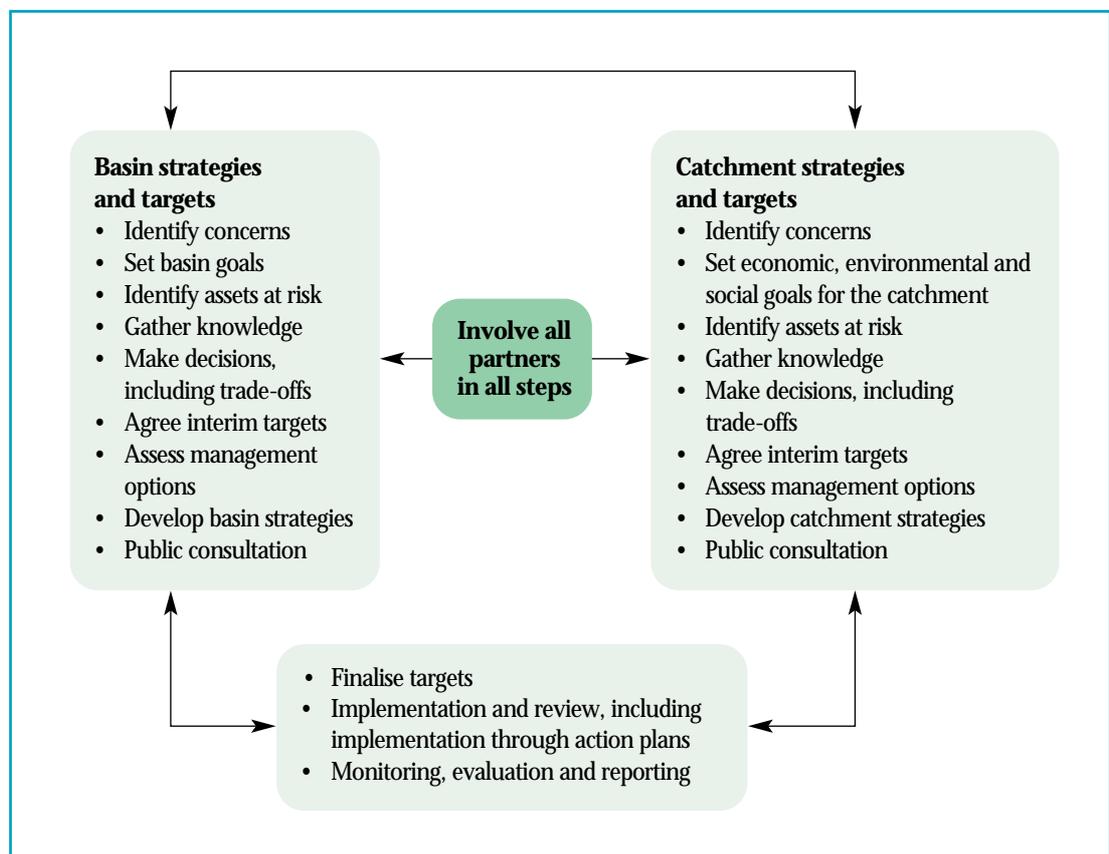
Targets will be set in Basin and catchment strategies. The major catchments of the Basin will be defined as far as possible to coincide with

the catchment management regions of the Basin (see inside front cover) so arrangements for setting, achieving and reporting targets can be closely linked with management decisions for those catchment regions.

Water quality and water sharing targets are well suited to being set at catchment scale. Other targets, particularly for terrestrial biodiversity, are best expressed at landscape or bioregional scale. However, these will need to be translated to catchment scale to support decision-making for integrated catchment management. Therefore we will need to ensure effective links between catchments, targets and plans at all scales.

Basin outcomes will reflect national and State/Territory outcomes (e.g. protection of a particular asset, such as a wetland of national significance, or protection of more general assets, such as productive land uses). Our targets will represent these outcomes, and outcomes sought by the catchment community. Once agreed, targets will need to be built into Basin and catchment strategies and action plans.

**FIGURE 4: Coordinated target setting**



Setting and managing the suite of targets will involve all partners. Resource condition targets at Basin and catchment scales will be agreed by the Murray–Darling Basin Ministerial Council as part of Basin strategies. These strategies will also clearly identify the roles and responsibilities relating to target setting, review and achievement for the strategy. States, catchment management organisations and the catchment community will agree to other targets as part of catchment strategies. But all targets will need to be reached to achieve the desired outcomes, so we all need to be involved at some point. Each group must be given the opportunity to put forward its views, and the concerns of each group taken into account in setting targets.

**We will:**

- determine targets on the basis of the assets we wish to protect, and the level of protection we seek;
- build targets into relevant strategies and plans;
- involve all partners in developing targets;
- set targets which can be delivered in a reasonable timeframe; and
- be accountable for the way we set targets.

The process for setting targets in Basin strategies and catchment strategies will be coordinated. In this way, we will know that the targets are measuring our progress in achieving outcomes for both the Basin and the catchment.

**Target review**

Our knowledge is and will continue to be imperfect. Therefore in setting targets we will need to take an active learning approach. All partners will be involved in reviewing targets. Setting and reviewing targets will encourage communication between all partners, will help us to focus on learning and sharing our knowledge, and will help us to improve our actions.

The four aspects of catchment health selected for target setting (water quality, water sharing, riverine ecosystem health and terrestrial biodiversity) are heavily dependent upon one another. Therefore the targets set will need to take account of this inter-dependence. We will regularly review targets to ensure that they are integrated, and that they take account of new knowledge.



*Replanting trees to protect the catchment*

David Eastburn

**We will:**

- begin with interim targets;
- evaluate and refine targets as our knowledge improves, taking a learning approach;
- review targets regularly to ensure they are integrated; and
- be accountable for the way we refine targets.

**Timetable for setting targets**

Target setting takes time, money, effort and a great deal of good knowledge. We cannot set targets for all issues immediately. For some issues, there is a reasonable amount of knowledge, and there are institutional arrangements that will help to set and achieve targets. The timetable for setting targets for catchment health in the Basin reflects this readiness.

Our knowledge base and institutional arrangements for issues related to water means we can set some water related targets and targets for native vegetation in the near future. For riverine ecosystem health or terrestrial biodiversity, more time will be needed to draw information together, collect data where necessary, and to improve our understanding.



## Timetable for setting targets

### Target

### Timetable

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#### Water quality, including surface water and groundwater

- *reducing or slowing the rate of increase of in-stream salinity*
- *reducing the threat of algal blooms*

**By 2001.** A Basin strategy for in-stream salinity and end-of-valley targets for each major catchment of the Basin will be established as part of the Basin Salinity Management Strategy. Over time these will be underpinned by a system of within-valley targets.

**By 2003.** A Basin strategy for in-stream nutrients and other factors affecting algal blooms, and targets for each major catchment of the Basin will be established. Over time these will be underpinned by a system of within-valley targets. These targets will be informed by a regular Sustainable Rivers Audit. Other possible areas for setting water quality targets will be considered by the Ministerial Council and include pesticides, temperature, and turbidity.

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#### Water sharing, including surface water and groundwater

- *establishing flow regimes that provide an appropriate balance between consumptive and in-stream, wetland, floodplain, riparian and estuarine water requirements. Consumptive use includes irrigation, stock and domestic use, and urban water supplies.*

Arrangements for a cap on diversions of water from the Basin's rivers were agreed in 1995. The introduction of the cap was seen as an essential first step in establishing management systems to achieve healthy rivers and sustainable consumptive use. The current cap has been set at 1993–94 development levels, adjusted for climate conditions, except for Queensland and the Australian Capital Territory.

**By 2002.** Interim targets for environmental flows for the River Murray will be established.

**By 2006.** A Basin strategy for water sharing and targets for each major catchment of the Basin will be established. Targets for water sharing will be informed by a regular Sustainable Rivers Audit.

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#### Riverine ecosystem health

- *maintaining/re-establishing viable populations of native species and integrity of ecological communities throughout their range within floodplain, wetland, riparian, in-stream and estuarine ecosystems*

**Between 2001 and 2006.** Work will be undertaken to determine appropriate targets to reflect riverine ecosystem health, building on and extending the work on targets for water quality and water sharing. Development of a Basin strategy and catchment targets for riverine ecosystem health, and the timeframe for development, will be informed by this work and by a regular Sustainable Rivers Audit. A Basin strategy and targets for each major catchment will be in place by 2006.

## Target

## Timetable

### Terrestrial biodiversity

- *maintaining key ecological processes; maintaining or re-establishing viable populations of native species and the integrity of ecological communities (especially vegetation); and controlling threats to biodiversity*

**Between 2001 and 2006.** Work will be undertaken to determine appropriate targets to reflect terrestrial biodiversity. These targets will take account of management options for salinity. As an initial step, work will commence on determining appropriate targets for native vegetation in major catchments to deliver Basin outcomes. A Basin strategy and targets for each major catchment will be in place by 2006.

**By 2002.** A Basin strategy and interim targets for native vegetation for each major catchment of the Basin will be established.

### Catchment health

- *a system of 'core signals' will be developed for each catchment to assess trends in the health of the catchment and pressures on the water, land and other environmental resources. These core signals will incorporate the targets for water quality, water sharing, riverine ecosystem health, and terrestrial biodiversity.*

A framework for catchment health core signals will be developed to incorporate targets as they are agreed. The framework will not be complete until all agreed targets are in place for each major catchment of the Basin.

**By 2008.** The full framework will be in place.

### Basin strategies

Over the next ten years, the Murray–Darling Basin Ministerial Council will develop Basin-wide strategies for setting and managing targets for water quality, water sharing, riverine ecosystem health and terrestrial biodiversity, and for integrating targets to help signal catchment health.

These strategies will:

- be recognisably part of a wider setting, showing links to other strategies and plans at national, Basin, State/Territory and catchment scales, and links with actions for addressing other issues;
- be based on a clear set of principles;
- have clearly-defined priority actions and locations for attention at Basin, State/Territory and catchment levels, for delivery through and in support of catchment strategies and action plans;
- take account of the economic, environmental and social contexts within which the strategy must operate, and of the economic, environmental and social impacts of the strategy;
- have clear, achievable and measurable targets and timeframes;

- outline the mechanisms for achieving targets;
- have mechanisms for defining options and managing trade-offs between conflicting interests;
- define roles, responsibilities, and accountabilities;
- outline the legal, institutional, planning, management, financial, and information skills and capacities which are required to match responsibilities and accountabilities;
- include practical monitoring, evaluating and reporting processes;
- include provision for reviewing and revising the strategy to learn from successes and failures; and
- be supported by a communication and engagement plan for the strategy.

Basin strategies will be developed in consultation with partners and will build on strategies and targets at national, State and catchment scales. As Basin strategies are developed, they will be integrated with other strategies and targets.



# Management arrangements for catchments

Integrated catchment management needs to be carried out at the catchment level for effective outcomes since:

- the health of the Basin depends on the aggregate health of its catchments;
- catchments are an appropriate scale for many management actions; and
- catchment communities are more likely to act if they make their own resource management decisions.

Therefore our management systems will be based on a catchment approach, with the catchment community able to make decisions in full knowledge of the limits to the stresses which we agree can be placed on those resources, and helping to determine those limits through their involvement in setting targets.

## *Characteristics of an integrated catchment approach to natural resources management*

- Decisions regarding natural resources—land, water and other environmental resources—are integrated at catchment scale.
- Decisions about the environment of the catchment, its economic productivity and its people are integrated.
- Responsibilities and accountabilities are clearly determined with matching capacities within the catchment.
- Strategies and action plans for catchment natural resources are developed and implemented in partnership between the community and governments.
- The mix of mechanisms, including incentives, investments and regulations, are designed and determined for each catchment.
- Allocation of natural resources, including water, is determined on a catchment basis.
- Catchment management delivers national, Basin and State outcomes within a system of agreed targets and within a long-term investment framework.
- Monitoring, evaluating and reporting systems support decision-making at catchment scale.

We will need sound, integrated catchment and land use planning, with catchment management organisations that can help to deliver change with the support of all partners. The partnership between Commonwealth, State/Territory and local governments, the community and industries must be strengthened, and this partnership must be evident at the catchment scale. We must find the appropriate balance between community ownership of catchment management and government leadership and support.

There are currently (May 2001) over 200 catchment strategies and action plans in the Basin. Both governments and the Basin community have worked to develop these plans to direct their actions. Future planning will build upon this extensive body of work.

Catchment management organisations will be critical to the success or failure of integrated catchment management. They will provide some of the most important links between governments and the community, and will advise on or determine suitable mechanisms to achieve targets within their catchments.

As at 2001, there are 19 catchment management regions in the Basin (see map inside front cover). These regions are primarily based on catchments, but also take account of State/Territory boundaries.

Each region has:

- a catchment management organisation;
- a regional or catchment strategy to direct actions; and
- a number of detailed action plans to implement the strategy.

Catchment management organisations have responsibility for developing and recommending the content of catchment plans and strategies. When doing this, they should be transparent and equitable in their decision-making, with effective mechanisms for participation by all relevant stakeholder groups. The organisations responsible for implementing plans and strategies must be clearly identified, suitably authorised and accountable to partners. Responsibility for implementation may vary between States, between catchments and over time. It may lie with State government, local government or a catchment management organisation, or it may be shared between them.



MDBIC

Planning property management

**Over the next ten years, we will:**

- integrate land use planning and catchment planning;
- support and strengthen catchment management organisations in each of the Basin’s catchment management regions to help carry out the necessary actions to achieve our targets;
- clearly define the responsibilities and accountabilities of catchment management organisations, and ensure that they have the capacities to carry out their roles;
- be partners in developing, implementing, evaluating and refining catchment strategies and action plans, and ensure they meet agreed standards; and
- support the continuing evolution of catchment management organisations to reflect increasing community capability and changing circumstances.

We will rely heavily on catchment strategies and action plans in conjunction with land use planning to drive the necessary change within catchments. Therefore the strategies and action plans must be well-developed and be continuously improved.

**Characteristics of a well-developed catchment strategy**

**A well-developed catchment strategy:**

- is managed by an organisation (or organisations), which
  - is capable of undertaking the strategy,
  - has the authority to manage the strategy on behalf of partners,
  - is legally able to contract for work proposed, and
  - is accountable to partners for implementation of the strategy;
- is developed in consultation with all partners;
- describes the local environment and natural resources;
- provides links to State/Territory, Basin and national policies and strategies;
- outlines economic, environmental and social aspirations for the catchment;
- identifies goals and measurable outcomes sought by the strategy, including assets to be protected;
- sets targets towards achieving measurable outcomes;
- ensures compliance with targets required for Basin and catchment health;
- assesses current management practices;
- identifies appropriate policies and mechanisms to support change;
- identifies issues of concern and the process for working through them;
- describes priorities for on-ground actions, and identifies the action plans for implementing the strategy;
- outlines the capacities (legal, institutional, knowledge, skills and financial resources) required to implement the strategy;
- describes catchment monitoring, evaluating and reporting arrangements; and
- is supported by a communication and engagement plan for the strategy.



### **Characteristics of a well-developed action plan**

#### **A well-developed action plan:**

- is managed by an organisation (or organisations) which
  - is capable of undertaking the action plan,
  - has the authority to manage the action plan on behalf of partners,
  - is legally able to contract for work proposed, and
  - is accountable to partners for implementation of the plan;
- is developed in consultation with all partners;
- quantifies the extent, severity and impacts of issues;
- integrates a range of issues (single issue plans must clearly show effects of or impacts on other issues and take account of best management practices for those issues);
- technically assesses biophysical processes and identifies the most appropriate responses;
- evaluates a range of possible options for action, including a 'no-plan' scenario, in order to optimise the benefits and minimise costs;
- identifies priority actions and locations to achieve agreed targets and outcomes;
- includes a clear program of actions;
- appropriately evaluates economic, environmental and social costs and benefits, and pays particular attention to off-site impacts, and impacts outside of plan boundaries;
- includes detailed arrangements for monitoring and evaluating progress and outcomes of the plan against identified targets and timeframes;
- describes partner roles and responsibilities and has partner commitment to carry out these roles and responsibilities (including any appropriate compliances);
- has cost-sharing arrangements agreed by all partners required to contribute, including arrangements to support long-term implementation and maintenance;

- identifies potential risks of implementing the plan (financial, business, environmental, and social);
- has appropriate endorsement by partner groups and government agencies, particularly agencies responsible for natural resources (land, water and other environmental resources); and
- is supported by a communication and engagement plan.



*Managing catchments for many uses*

# ***Mechanisms***

A range of mechanisms can be used to achieve targets. Some mechanisms will be specific to each catchment, while others will require action across the Basin.

Mechanisms include:

- reforms to the institutions, both government and community institutions, which manage natural resources and the way they interact;
- regulations, such as planning controls, licensing industry use of natural resources and covenants (land management agreements, binding on successive land managers);
- reforms to land, water and vegetation legislation, including clear definition of property and access rights;
- market mechanisms to attract investment in environmental protection and sustainable industries and to incorporate environmental costs in the costs of production;
- protection of assets through direct investment;
- incentives to encourage adoption of best management practices and changes in land use;
- support for voluntary action;
- provision of knowledge and promotion of understanding; and
- support for communities undergoing difficult change.

We currently use many of these mechanisms in natural resource management. However we can improve their use through innovative mixes and new ideas. The most effective mix of mechanisms will vary in different locations of the Basin and for different land uses. We must work together to determine the most effective mix of mechanisms to achieve the outcomes represented by our targets, and apply them at the most appropriate scales. We must take particular care to choose mechanisms that support change where there are significant economic and social impediments that affect the ability of land managers to use the natural resources of their properties in a sustainable way.

## ***We will:***

- actively seek to use innovative mechanisms to achieve targets;
- choose the mix of mechanisms and scale for applying them according to the effect they will have in helping to achieve targets;
- involve our partners in determining the mechanisms to be used;

- monitor the impacts of mechanisms on catchment health and on the economic and social well-being of catchment communities; and
- refine mechanisms as our knowledge improves.

Over the next ten years, we will make more use of:

- institutional reforms, including:
  - catchment approaches to natural resources management;
  - implementation of water and vegetation reforms;
  - coordinated policies across portfolios of government; and
  - increased community involvement.
- integrated land use planning and catchment planning, beginning with:
  - accreditation of catchment strategies and action plans that incorporate land use planning;
- market mechanisms, such as:
  - developing codes of practice to encourage sustainable uses of natural resources;
  - industry self-regulation and accreditation of management systems and practices; and
  - establishment of markets for environmental services, such as the possible use of tradeable credits in salinity, nutrients and biodiversity.
- targeted provision of knowledge, including:
  - improved understanding of catchment processes;
  - predicting the economic, environmental and social impacts of a range of management options; and
  - improving access to knowledge by all partners through establishment and strengthening of information management systems, active knowledge sharing, education and training.



# ***Monitoring, evaluating and reporting***

Monitoring, evaluating and reporting is a critical part of ICM. It will help us decide if actions need to be changed, and where attention should be focused. It will be an important way of using a learning approach to catchment management. We will determine who will be accountable for achieving, monitoring, evaluating and reporting outcomes at Basin, State and catchment scales. The Ministerial Council will establish monitoring, evaluating and reporting systems for the Basin and work to ensure that these are coordinated with systems currently in place in the States and at the national scale. This coordinated approach to monitoring and evaluation will be designed to support a single integrated system to meet all audit and reporting needs.

Reporting needs to be regular. Our reporting must highlight both successes and failures and the reasons for these. Acting on this information will improve our actions and turn failures into successes. We must do this in a spirit of partnership, and not seek to avoid our responsibilities.

Making findings public will engender a sense of achievement in our work and confidence to continue joint efforts.

Every three years we should review the integrated catchment management approach outlined in this document to check our progress and improve the approach.

## ***We will:***

- regularly and at appropriate intervals monitor and evaluate our achievements against targets, and use this information to improve our actions;
- evaluate our progress in implementing the ICM approach every three years; and
- regularly report our findings to our partners and to the public, in a spirit of partnership.

## **Monitoring and evaluating achievements against targets**

Monitoring and evaluation needs to be comparable across the Basin to allow more accurate comparison of targets and effectiveness of actions. To achieve this, we need to build systems across the Basin to coordinate the monitoring and evaluation systems within catchments.

Although targets will be designed to protect the health of the Basin and its catchments, achieving the targets will have impacts on the economic and social assets of the Basin and its catchments. We will need to monitor those effects to ensure we achieve the balance we seek for the use and management of the Basin's natural resources.



*Macquarie River near Dubbo*

David Eastburn



MDBC

Monitoring dryland salinity

**We will:**

- establish, implement and maintain systems for monitoring and evaluating those natural resources against which we will set targets; our systems will build on the work that has been successfully undertaken at national, Basin and State scales;
- benchmark the condition of those natural resources, and continually monitor their condition;
- establish audit arrangements for monitoring progress toward achieving targets;
- integrate our monitoring systems for each catchment to evaluate the health of the assets we agree to protect, the overall health of that catchment and the effects on the health of the Basin; and
- monitor the effects of our actions on the economic and social well-being of regional communities.

Monitoring and evaluation systems within catchments will also track changes in management practices and land uses, so that we can learn from our successes and failures. This information will be passed to our partners and to future natural resource managers.

**Evaluating our approach**

We will continually improve the approach, including the use of targets. To do so, we will evaluate the approach every three years, and be prepared to change direction on the basis of this information. Every year the Ministerial Council and the Community Advisory Committee will jointly review the progress of the ICM approach against an agreed set of performance measures.

We will take particular care to monitor institutional change and partner relationships at all scales (national, Basin, State, catchment and local).

**We will review, evaluate and report on:**

**Targets**

- do they continue to reflect the outcomes we seek?
- are they useful?
- are the targets at different scales meaningfully linked?

**Actions, mechanisms, institutions, policies and programs**

- are they helping to achieve targets?
- do they provide consistent messages to natural resource managers?
- are our investments well directed, and are they adequate?

**Catchment strategies and action plans**

- do they adequately guide actions to achieve targets?
- are they integrated with other strategies and plans?

**Partner relationships**

- are all partners adequately engaged?
- do all partners have the capacities to play their part?



David Eastburn

Protecting the economic and social future

# ***Roles and responsibilities***

State/Territory governments have the legislated responsibility for natural resources management within their boundaries. Local government has a key role to play in land use planning. However, governments cannot by themselves effect the changes required to protect the health of the Basin. Therefore, we need to work in partnership and not allow State, Territory, catchment or local government boundaries to prevent us taking action to protect the health of the Basin.

Key elements of roles and responsibilities will be the assigning of accountabilities, supporting a learning approach rather than a punitive approach, and the importance of engaging all partners.

## ***We will:***

- determine who will be accountable for achieving, monitoring, evaluating and reporting targets and outcomes at Basin, State and catchment scales;
- ensure that roles, responsibilities and capacities match accountabilities at each of these scales;
- clearly determine, where roles and responsibilities are shared, who will be accountable and to what extent;
- communicate openly and pass our knowledge to each other;
- advise each other of our needs and the needs of other partners; and
- work with all partners, including local government, Indigenous people, industry groups, and non-English speakers to determine their roles and responsibilities.

## ***We agree:***

- to build strong institutional arrangements to manage our natural resources within this partnership;
- where necessary to undertake institutional reform including government, catchment, local and industry arrangements; and
- over the next ten years, to progressively move to managing our natural resources at a catchment scale by strengthening the institutional arrangements within catchments.

Roles will differ from State to State and catchment to catchment. They include the following division of responsibilities.

## ***Commonwealth Government:***

- provide leadership on matters of national interest, including international obligations;
- coordinate policies across portfolios of the Commonwealth Government;
- generate, coordinate and share knowledge;
- be involved in setting targets for priority national outcomes;
- act to achieve these outcomes using a range of government mechanisms, including providing information and investment;
- be accountable for investments and outcomes;
- ensure that Basin, State and catchment frameworks are adequate to deliver these outcomes;
- monitor progress toward achieving these outcomes;
- engage key partners; and
- review and evaluate Commonwealth Government policies, legislation and mechanisms.

## ***Murray–Darling Basin Ministerial Council:***

- provide leadership on matters of interest to the Basin;
- coordinate the policies of governments involved in the Basin;
- generate and share knowledge;
- set Basin-wide targets for priority outcomes in consultation with all partners;
- coordinate activities of governments involved in the Basin to achieve these outcomes, including communication and engagement of partners;
- ensure appropriate accreditation processes are in place to deliver on Basin strategies and agreed targets;
- implement Basin decisions in the State/Territory and Commonwealth jurisdictions, ensuring a degree of consistency across the Basin;
- monitor progress toward achieving agreed targets and outcomes;
- monitor the ICM approach and its effectiveness in achieving outcomes;
- determine trade-offs between competing interests between States; and



Communities investigating the control of dryland salinity

- review and evaluate Ministerial Council policies and mechanisms.

#### **Community Advisory Committee:**

- provide advice to the Ministerial Council, and leadership on matters of interest to the Basin community; and
- monitor the ICM approach and its effectiveness in achieving outcomes.

#### **State and Territory governments:**

- provide leadership on natural resources management matters;
- plan, promote and legislate for the use of the natural resources that lie within their boundaries;
- coordinate policies across portfolios of their government;
- generate and share knowledge;
- establish and coordinate catchment approaches to natural resources management, including:
  - define the geographic boundaries of catchment management regions,
  - determine the composition, roles, responsibilities and accountabilities of catchment management organisations,
  - set catchment targets for national, Basin and catchment outcomes in negotiation with key partners,
  - ensure that catchment management organisations have sufficient capacities (legal, institutional, knowledge, skills and financial resources) to carry out their responsibilities,

- monitor compliance with requirements and progress towards achieving outcomes,
- provide quality assurance for catchment strategies and associated action plans, and
- be accountable for investments and outcomes;

- act to achieve agreed outcomes using a range of government mechanisms, including providing information and investment;
- ensure that catchment frameworks are adequate to deliver these outcomes;
- monitor progress toward achieving these outcomes;
- determine trade-offs between competing interests and between catchments;
- ensure that local government has sufficient capacity (legal, institutional, knowledge, skills and financial resources) to carry out its responsibilities;
- ensure adequate communication and engagement of all partners; and
- review and evaluate State/Territory government policies, legislation and mechanisms.

#### **Local governments:**

- coordinate policies with State policies on natural resources management;
- generate and share knowledge;
- ensure that land use planning is integrated with catchment planning;
- be involved in catchment planning;
- act to achieve agreed outcomes using a range of government mechanisms, including providing information and investment;



- be accountable for investments and outcomes; and
- review and evaluate local government policies and mechanisms.

The scope of responsibility of local government varies between States. Local government involvement in natural resources management will thus vary across the Basin.

### ***Catchment management organisations, in conjunction with other regional organisations:***

- provide leadership on matters of interest to the catchment;
- be involved in setting targets for national, Basin and catchment outcomes;
- develop, advise on or manage and coordinate the implementation of catchment strategies and action plans to achieve these outcomes, including:
  - advise on or determine the mix of mechanisms required to enable the catchment community to achieve outcomes, including advising the most appropriate allocation of investment to the various aspects of integrated catchment management,
  - help to coordinate activities within the catchment,
  - advise on or determine trade-offs between competing interests within the catchment, guided by government policies and agreed targets,
  - monitor and report on progress toward achieving outcomes,
  - help to coordinate government, industry and community investments in the catchment, and
  - in some circumstances be accountable for investments and outcomes;
- generate and share knowledge;
- ensure that the catchment community has sufficient capacity and resources to carry out its responsibilities;
- ensure adequate communication and engagement of all partners and act as a communication channel between the community and government;
- provide information to the catchment community;
- enlist government, industry and community support to achieve agreed outcomes; and

- review, evaluate and report on the mix of policies and mechanisms affecting the achievement of outcomes.

### ***Community groups:***

- promote management of the natural resources of their local areas in line with catchment strategies and action plans;
- generate and share knowledge;
- evaluate and report on outcomes of activities in their local areas;
- advise the catchment management organisation on issues of concern to the community; and
- be involved in catchment planning.

### ***Industry groups:***

- act to achieve agreed outcomes using a range of industry mechanisms, including:
  - providing information and investment,
  - developing environmental management and accreditation systems for their industries to promote sustainable practices and land uses, and
  - carrying out research and development to promote sustainable practices and land uses;
- advise the catchment management organisation and governments on issues of concern to the industry;
- generate and share knowledge; and
- be involved in catchment planning.

### ***Landholders and land managers:***

- act to achieve agreed outcomes using a range of mechanisms, including:
  - seeking information and assistance to protect the natural resources within their care and those affected by their actions,
  - providing investment,
  - planning and managing their properties in line with best management practice for their sub-catchment and industry, and
  - consider changing their land use where necessary;
- generate and share knowledge;
- comply with regulations regarding the use of the natural resources for their areas; and
- be involved in catchment planning.

# ***Investment***

Significant costs will be incurred in establishing the arrangements outlined in this document and in managing the Basin's catchments into the future. However, these costs are dwarfed when compared with the inevitable costs—economic, environmental and social—if current management practices are not changed.

Commonwealth and State governments fund a range of programs and initiatives that aim to improve natural resources management within their boundaries. A significant share of these funds will be spent within the Basin. The Basin community and industries make far larger investments in the natural resources of the Basin, both in dollar terms and in terms of time, effort and knowledge.

## ***Government investment programs***

Over the next decade, governments will invest to strengthen integrated catchment arrangements, to achieve agreed targets and outcomes, and to improve the approach to natural resources management. This investment will support and guide community investment.

### ***Principles for government investment***

The benefits of the investment must be greater than the costs; the full range of costs and benefits, including economic, environmental and social costs and benefits will be considered.

Government investment will be used:

- where markets fail to prevent unacceptable levels of resource degradation; and
- to stimulate private investment.

A range of alternative investments will also be considered and evaluated.

Governments and the Basin community will negotiate and agree the appropriate balance of investment in the different aspects of catchment management.

Cost sharing principles should apply. 'Polluter pays' is the first principle of cost sharing but where the polluter cannot be held accountable, then the 'beneficiary pays' principle will be applied. Joint-venture partnerships with the community will be the preferred investment approach.

On-ground investment must be supported by strong institutional arrangements, knowledge, sound planning and adequate monitoring, evaluating and reporting systems.

Governments represented by the Ministerial Council agree that their investment in the Basin over the next decade will:

- be directed to achieving agreed targets and outcomes;
- be allocated on the basis of:
  - the need to improve both community and government capacity, and
  - the outcomes likely to be achieved;
- reflect a long-term commitment, supported by an ongoing source of investment;
- be delivered primarily at catchment scale;
- provide mechanisms for ensuring adequate capacities at catchment scale to match responsibilities and accountabilities; and
- be coordinated through and directed by catchment strategies and action plans.

The Ministerial Council coordinates reporting of all investments in natural resources management made through catchment strategies and action plans. As part of this investment, the governments represented on the Ministerial Council commit funds to work for the common good. Investment delivered through such joint programs will focus on the following five aspects:

- improving the knowledge base and sharing knowledge;
- strengthening the institutional arrangements at catchment scale;
- developing catchment strategies and action plans to an agreed standard and accrediting them;
- implementing accredited strategies and plans; and
- monitoring, evaluating and reporting.

The need to fund these activities will vary from catchment to catchment, and from State to State. However, successful implementation of catchment strategies and action plans will depend on adequate investment in all aspects of ICM.

The community will need to advise government on the focus of investment required in their regions and any changes to the current balance of investment between the five aspects of ICM.



## **Related government initiatives**

There is a range of initiatives for natural resources management occurring in the Basin that are related to and compatible with the integrated catchment management approach outlined in this document.

They include:

### ***National***

National Action Plan for Salinity and Water Quality  
Council of Australian Governments (COAG) Water Reform Framework  
National Land and Water Resources Audit  
National Native Vegetation Framework  
National Greenhouse Strategy  
National State of the Environment Report  
National Strategy for the Conservation of Australia's Biological Diversity  
National Strategy for Ecologically Sustainable Development

### ***Basin***

Basin Salinity Management Strategy  
Sustainable Rivers Audit  
Murray River Environmental Flows  
Basin Sustainability Plan

### ***New South Wales***

NSW Salinity Strategy  
Catchment Management Planning  
Water Management Planning  
Vegetation Retention and Revegetation Targets  
Draft NSW Native Vegetation Conservation Strategy  
NSW Biodiversity Strategy

### ***Victoria***

Snowy River Environmental Flows Initiative  
Water for Growth Initiative  
Pricing Review of Water, Drainage & Sewerage Services in Victoria  
Statewide Water Conservation Initiatives  
Review of Victorian Salinity Management Plans  
Review of Farm Dams  
Draft Victorian River Health Strategy  
Victorian Native Vegetation Management Framework  
Second Generation Landcare Initiative  
Pest Management Strategy  
Review of Victoria's Private Forestry Strategy

## **South Australia**

Draft Integrated Natural Resource Management Bill

*Water Resources Act 1997*

River Murray Catchment Water Management Board Draft Comprehensive Catchment Plan

South Australian Draft River Murray Water Allocation Plan

Directions for Managing Salinity in South Australia

Draft State Dryland Salinity Strategy South Australia

Draft South Australian River Murray Salinity Strategy

Dryland Regional Strategy Murray–Darling Basin South Australia

Biodiversity Plan for the South Australian Murray–Darling Basin

South Australian River Murray Wetlands Ten Year Plan

## **Queensland**

*Water Act 2000*

Water Resources Plans

*Vegetation Management Act 1999*

Vegetation Management Plans

*Integrated Planning Act 1997*

Local Government Planning Schemes

*Environmental Protection Act 1994*

Pest Management Plans

*Nature Conservation Act 1992*

Biodiversity Management Plans

Aboriginal and Torres Strait Islander Ten Year Partnership

Queensland Regional Economic Development Strategy

Queensland Strategy for Integrated Catchment Management

## **Australian Capital Territory**

*Land (Planning and Environment) Act 1991*

Territory Plan

*Water Resources Act 1998*

Environmental Flow Guidelines

Water Resources Management Plan

ICM Framework for the ACT

ACT Community Government Partnership

Nature Conservation Strategy

Introduction of Load Based Licensing

Further information on these initiatives can be obtained from Commonwealth and State government agencies responsible for land, water and environmental concerns.



## Glossary



<b>Accountability</b>	A responsibility for which an individual or organisation must be answerable to others, and bear defined consequences of not adequately meeting the responsibility.
<b>Accreditation</b>	A formal process for assessing the appropriateness of a strategy or plan for implementation.
<b>Algal</b>	Relating to algae, simple plants, mostly microscopic without roots and leaves. Blue-green algae (cyanobacteria) have been a particular problem in the Murray–Darling Basin—they produce blooms that are potentially harmful to riverine ecosystems, livestock and human health.
<b>Basin community</b>	Rural and regional communities, landholders and land managers, Indigenous people, Landcare groups, urban people, industries, businesses, special interest groups, and individuals who live and work in the Basin or have a special interest in the Basin.
<b>Basin scale</b>	Affecting the Basin or taking effect across the Basin.
<b>Biodiversity</b>	The variety of life forms, plants, animals and micro-organisms, the genes they contain, the ecosystems they form, and ecosystem processes.
<b>Bioregional</b>	Relating to the management of biological diversity on a regional basis, using natural boundaries to facilitate the integration of conservation and production-oriented management. Bioregions most often refer to the extent of a particular ecosystem or similar types of ecosystems.
<b>Capacity</b>	Ability to manage natural resources including legal, institutional, planning, management, financial, technical and information skills and capacities, and leadership skills.
<b>Catchment</b>	The area of land drained by a river and its tributaries.
<b>Catchment community</b>	Rural and regional communities, landholders and land managers, Indigenous people, Landcare groups, urban people, industries, businesses, special interest groups and individuals who live and work in the catchment or have a special interest in the catchment
<b>Catchment health</b>	The environmental condition of a catchment, represented by the aggregate condition of its waters, land, vegetation and ecosystems.
<b>Catchment health target</b>	A target set for the environmental condition of a catchment. (See also ‘Resource condition target’.)
<b>Catchment management organisation</b>	An organisation comprising members of the catchment community, government and other interested parties established by State Government for the specific purpose of overseeing the management of a catchment’s natural resources.
<b>Catchment management region</b>	The area defined by a State Government to be the area of concern for a Catchment Management Organisation—see inside front cover for a map of Catchment Management Regions in the Murray–Darling Basin.
<b>Catchment scale</b>	Affecting a catchment or taking effect across a catchment.

<b>Consumptive use</b>	The use to which a natural resource may be put that takes it out of its original situation and uses it for human purposes, e.g. using water for drinking purposes or irrigation
<b>Credit</b>	A unit of measure of environmental benefit which can be allocated or debited and possibly traded.
<b>Ecosystem</b>	Communities of life forms and their physical environment interacting as a unit.
<b>End-of-valley target</b>	A target for the quality and quantity of water at the point where a river leaves a catchment.
<b>Environmental flows</b>	River and stream flows, or characteristics of flow pattern, that are either protected or created to benefit the natural environment.
<b>Environmental services</b>	The benefits that come to humans from nature and its components (e.g. renewal of soil fertility; purification of air and water); these benefits are sometimes called 'ecosystem services'. Environmental services can also refer to an environmental benefit provided by land and water management practices that help to preserve natural resources or ecosystems.
<b>Ecologically sustainable development</b>	Using, conserving and enhancing the community's resources so that ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased.
<b>Flow regime</b>	The pattern of flow in a river that can be described in terms of quantity and variability of water flows.
<b>Governments</b>	Commonwealth, State and local governments and their statutory authorities.
<b>Groundwater</b>	Water beneath the surface held in or moving through saturated layers of soil, sediment or rock.
<b>Habitat</b>	The type of environment in which a given animal or plant lives and grows, including physical and biological conditions.
<b>Holistic</b>	Taking account of all aspects of natural resources (environmental, economic and social) and the interactions between them.
<b>Integrated catchment management (ICM)</b>	A process through which people can develop a vision, agree on shared values and behaviours, make informed decisions and act together to manage the natural resources of their catchment: their decisions on the use of land, water and other environmental resources are made by considering the effect of that use on all those resources and on all people within the catchment.
<b>Institution</b>	An organisation, and the laws, rules or customs that govern it.
<b>Institutional reform</b>	A major change to an institution or its way of operating.
<b>Land managers</b>	Those who manage land, including farmers, graziers, irrigators, land holders or custodians, councils, and government agencies.



<b>Landcare group</b>	A group of people from the same area who join together to do a range of things to benefit the environment through land management and related activities.
<b>Landholders</b>	Those who own or lease land.
<b>Landscape</b>	An area of land and its physical features. This term is often used to describe an area that has common features.
<b>Management target</b>	A target for the actions we take to manage natural resources.
<b>Market failure</b>	The situation where a market does not efficiently allocate resources to achieve the greatest possible good.
<b>Market mechanisms</b>	Mechanisms that change the market forces for particular commodities to help achieve the desired outcome.
<b>Mechanisms</b>	Ways of achieving the desired outcome. Mechanisms are most often designed to trigger action by others that is likely to lead to the outcome being sought.
<b>Native vegetation</b>	Vegetation comprising plant species originating in an area. Often refers to plant species originating in Australia, but vegetation can also be native to a local area.
<b>Natural resources</b>	The assets of land, water, plants, animals and air.
<b>Outcome</b>	A long-term result that represents a measure of achievement of goals.
<b>Public good</b>	A benefit accruing to the community as a whole, particularly to the Australian community.
<b>Principle</b>	An accepted rule to guide action.
<b>Private good</b>	A benefit accruing to individuals or individual organisations.
<b>Property scale</b>	Actions and impacts at the scale of an individual farm, land holding or business.
<b>Regional communities</b>	People who consider themselves part of a region, often an economic or social grouping.
<b>Regional organisation</b>	An organisation responsible for regional issues, such as regional development, regional natural resources management etc.
<b>Regulation</b>	A control by government on the use of natural resources.
<b>Resource condition target</b>	A target for the condition or health of a natural resource. (See also 'Catchment health target'.)
<b>Responsibility</b>	Duty to undertake a particular role and be reliable in undertaking the role.
<b>Riparian</b>	Relating to the area along the bank of a river or a stream.
<b>Riparian Vegetation</b>	Any vegetation on land which adjoins, directly influences or is influenced by a body of water.
<b>Riverine</b>	Relating to rivers, their floodplains and wetlands.

<b>Salinity</b>	The concentration of salts in soil or water, usually sodium chloride.
<b>Surface water</b>	Water on the surface of the land, for example rivers, creeks, lakes, dams and overland flows.
<b>Sustainability</b>	Managing our natural resources in a way that maintains their environmental, economic, social and cultural values so that they continue to be available in the long term.
<b>Target</b>	A measured result, expected to be achieved in a given timeframe. A target is a short- or medium-term result leading to long-term outcomes.
<b>Terrestrial</b>	Relating to land.
<b>Value</b>	A belief or accepted standard that influences the way we behave.
<b>Waterwatch group</b>	Group of people who join together to do a range of things to benefit the environment through water and riverine management and related activities.
<b>Wetland</b>	Land inundated with temporary or permanent water that is usually slow moving or stationary, shallow, and either fresh, brackish or saline.



Darling Downs

David Eastburn



*Remark scene—Peter Solness*

We the community and governments of the Murray–Darling Basin commit ourselves to do all that needs to be done to manage and use the resources of the Basin in a way that is ecologically sustainable.

