



Government  
of South Australia

# OUR PLACE **OUR FUTURE**

State Natural Resources Management Plan  
South Australia 2012 – 2017



## ABORIGINAL ACKNOWLEDGEMENT

The State NRM Plan acknowledges the important and significant connection of South Australia's Aboriginal peoples and their cultural obligation, affiliation and cultural responsibility for all lands and waters across South Australia.

It acknowledges this in a respectful manner that is considerate of all landholders and also the importance of good relationships between Aboriginal peoples and landholders.

The connection to land and waters across South Australia for Aboriginal peoples is through the unique relationship to country via creation stories, family ties and kinship arrangements, responsibility for protecting important places of cultural and spiritual significance and responsibility for maintaining traditional practices and, where practicable, increasing responsibility to care for their country.

These matters are most important to maintaining the overall wellbeing of South Australia's Aboriginal peoples today.

The plan values the important contribution that South Australia's Aboriginal peoples make to natural resource management in South Australia.





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In particular, we would like to extend a thankyou to:

- The State NRM Plan Project Team – Mary-Anne Healy, Anne-Marie Hayes, Dr Anna Dutkiewicz, Suzanne Thompson-Wright and Brenton Grear, with support from Greg Cock and Michael Good.
- Our champions and Steering Committee – Sharon Starick, Felicity-ann Lewis, Greg Leaman, Allan Holmes, Tim Milne, Andrew Inglis and other members of the NRM Council (past and present).
- All stakeholders who contributed via the many consultations held throughout South Australia.

## How to reference this Plan

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\* As at 1 July 2012 Department of Environment and Natural Resources and Department for Water merge to become Department of Environment, Water and Natural Resources.



## DEFINITIONS

SO THAT WE ALL HAVE THE SAME UNDERSTANDING AS WE READ THE PLAN, HERE ARE SOME DEFINITIONS OF TERMS USED.

**Adaptive management** – A systematic process for continually improving by evaluating and learning from the past.

**Ecological communities** – Living things interacting together in specific habitats.

**Governance** – The processes by which organisations are directed, controlled and held to account. Governance encompasses authority, accountability, stewardship, leadership, direction and control.

**Landscape scale** – A scale of planning, implementation or reporting that considers areas larger than individual sites, properties or habitats. It often includes a mix of different vegetation types and landforms; it can include land, freshwater, coast and sea.

**Natural resources** – Includes soil, water and marine resources, geological features and landscapes, native vegetation, native animals and other native organisms and ecosystems.

**Natural resource management** – Caring for our natural resources – balancing people's needs with those of nature.

**Resilience** – The capacity of complex systems (social, economic or environmental) to respond (and adapt) to external shocks and disturbances without losing their essential functions and identity.

**We** – Everyone in South Australia, those who care for, are responsible for, or take an interest in natural resources. This plan is for all of us – community, industry, local government, non-government organisations, peak bodies, conservation groups, land managers and government agencies.

### Commonly used acronyms

DEWNR	Department of Environment, Water and Natural Resources
DPC	Department of the Premier and Cabinet
DPTI	Department of Planning, Transport and Infrastructure
EPA	Environment Protection Authority
NRM	Natural Resource(s) Management
NRMB	Natural Resources Management Board
NRMC	Natural Resources Management Council
PIRSA	Primary Industries and Regions SA

**Below:** Minister Caica (right) with Andrew Inglis, Presiding Member NRM Council and Sharon Starick, Presiding Member SA Murray-Darling Basin NRM Board

## FOREWORD

Over the last 30 years, a landcare ethic has continued to take a greater hold in contemporary Australian society. Of course, the acknowledgment of a sense of collective responsibility for maintaining the health of our land, rivers, sea and air is nothing new, it has existed for centuries across many cultures, none more so than with Australia's First Peoples.

In South Australia, there has long been a strong interest in how we manage our natural resources. While our experiences are not entirely unique, our settlement patterns and early experiences of our climate and country have affected us deeply. Goyder's line marked the extent of arable land. The periodic droughts and variable annual rainfall patterns made us conscious of the limits and constraints of our country.

In 2004, after a rich history in legislating for better 'natural resource management' (NRM) such as the *Sand Drift Act 1923*, the *Natural Resources Management Act 2004* (the Act) was passed.

The Act was transformative in progressing NRM in South Australia in that it introduced a new system of integrated and regionalised action.

The objects and principles of the Act include assisting in the achievement of ecologically sustainable development through an integrated scheme which recognises the intrinsic value of our natural resources and which seeks to protect biodiversity and catchments, while supporting sustainable primary production.

The Act also establishes regional NRM Boards to give ownership of and responsibility for NRM to regional communities. These responsibilities include restorative and rehabilitative projects, pest control and driving educational initiatives to increase the capacity of our communities to be involved in NRM.

At the centre of the NRM system is the State NRM Plan which provides the strategic blueprint for NRM boards and agencies to develop their own specific plans.

This new plan replaces the 2006 version and draws from the experience of that document. This plan takes a more strategic approach and is less detailed and prescriptive than its precursor. It provides direction and guidance to boards, government agencies and other affiliates. It operates, however, through regional and agency plans and in doing so, allows for regional differences and encourages innovation that is best suited to each community's circumstances.

Implementation of the plan will be realised through strong leadership, meaningful engagement, clear targets, sound management, responsive systems and a search for continuous improvement.

This plan provides the base foundation for natural resource management in South Australia. A number of central messages or themes guide the plan. These are:

- community and landholder ownership of and responsibility for NRM;
- an NRM system that is relevant and connected to communities;
- an integrated approach to production and conservation, across disciplines or functions (water, soil, biodiversity etc.) and to projects and participants;
- an adaptive approach, where we learn from doing and where science and knowledge strongly influence decisions and actions;
- a landscape approach that transcends public, private and administrative boundaries; and
- a respect for Aboriginal people and their connection to natural resources.

On behalf of the South Australian Government I would like to express my thanks and appreciation to the State NRM Council for their work in drafting and consulting on this plan.

I commend the plan to you and invite you to participate and contribute as citizens of South Australia to the work being done to promote the sustainable and integrated management of our State's natural resources.



**Paul Caica**  
Minister for Sustainability,  
Environment and Conservation  
June 2012

## SECTION 1: ABOUT THIS PLAN

This plan establishes the direction for South Australia in its management of natural resources for the next five years and beyond. It provides the framework for regional NRM boards working with State Government agencies to develop regional plans and programs, and to engage everyone involved in natural resource management from land managers, Aboriginal people and marine resource users to community groups, industry and local government.

The Vision, Goals and Guiding Targets set a strategic state-wide direction for natural resource management; actions will be planned for and delivered at the regional level through regional NRM plans and at a state level through NRM agency plans. There is recognition that every region faces different challenges and opportunities and it is appropriate that as many decisions as possible are made at the regional level.

By setting the overall direction and making the Management System more functional, the plan seeks to improve the condition of natural resources in South Australia.

The Management System will be strengthened through ten state-level priorities.

The plan takes a “landscape approach” by integrating the management of production and conservation across land and water boundaries. It recognises the importance of managing our natural resources to deliver economic and social wellbeing for people and industry for the long term.

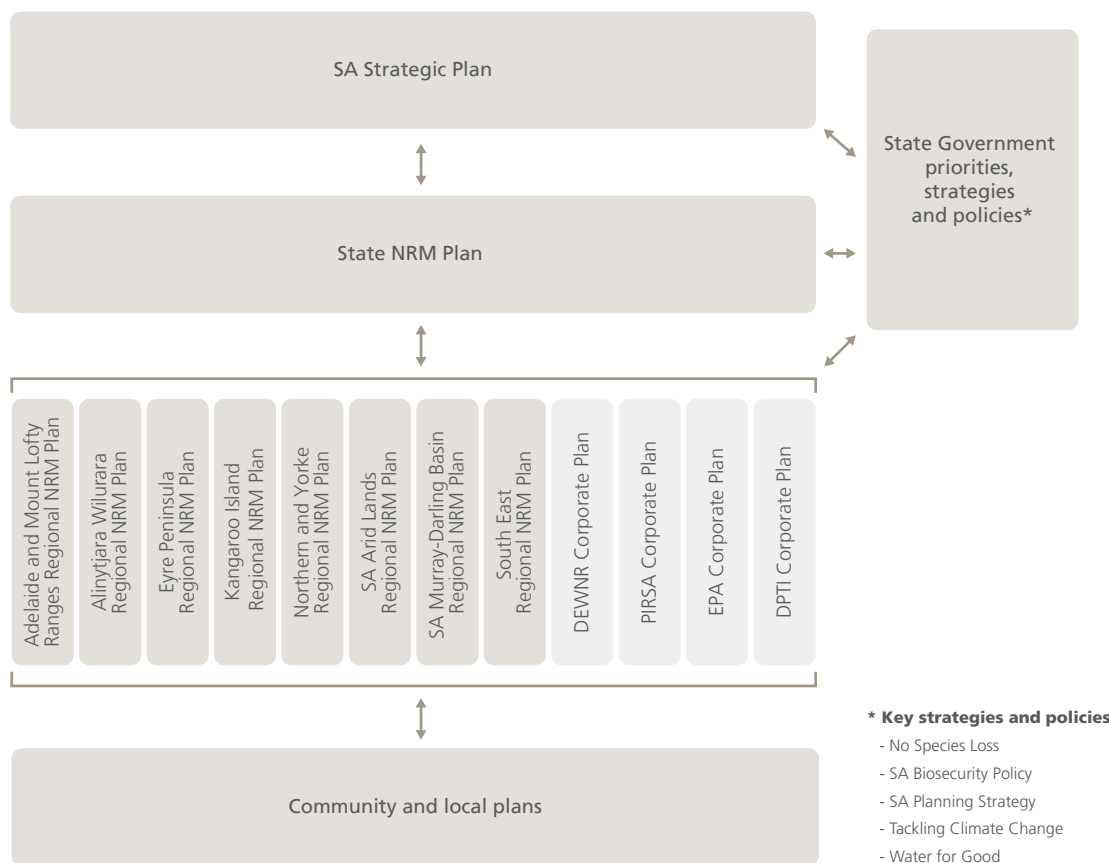


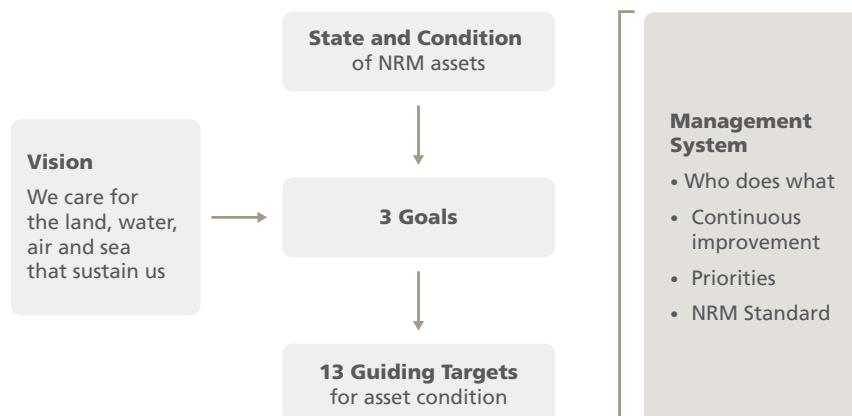
Figure 1: The relationship between plans



## STATE NRM PLAN FRAMEWORK

The State NRM Plan Framework consists of:

- the **Vision**
- an assessment of the current **State and Condition** of our NRM assets
- **3 Goals** which help describe how we will achieve our Vision and help guide how we set our targets
- **13 Guiding Targets** to achieve improved natural resource management.



*Figure 2: State NRM Plan Framework*

This framework is then implemented by the **Management System** – the arrangements and processes in place to deliver and manage NRM in South Australia.



## SECTION 2: VISION AND GOALS

*VISION: WE CARE FOR THE LAND, WATER,  
AIR AND SEA THAT SUSTAIN US*

In South Australia we have diverse, complex and unique natural systems that provide us with food, water and fibre, and support industries and communities as well as our quality of life. These natural systems also help define our identity as South Australians. To make sure we can continue to access and benefit from our natural resources and the services they provide, we need to manage them carefully and balance their use and protection.

Natural resource management (NRM) is about managing the way in which people and natural landscapes interact. NRM brings together the planning, allocation, conservation and use of all natural resources (land use planning, water management, biodiversity conservation, agriculture, mining, tourism, fisheries, aquaculture and forestry).

Our management respects the cultural connection to country of Aboriginal peoples.

NRM recognises that people, their wellbeing and their livelihoods rely on the health and productivity of our landscapes; and it understands that community stewardship of our land, water, air and sea is critical to maintaining that health and productivity.

Achieving the plan's Vision requires everyone involved in natural resource management across South Australia to work together to achieve the Goals.

All three Goals matter, but none is sufficient on its own; it is the interlocking of people, production and conservation that will secure the future of our natural systems and the communities that depend upon them.

### GOAL 1

**People taking responsibility for natural resources and making informed decisions**

Individuals, communities, industry and all levels of government working together, able and willing to manage our natural resources.

### GOAL 2

**Sustainable management and productive use of land, water, air and sea**

We all use resources productively, respecting limits and balancing economic, social and environmental sustainability, for the long term.

### GOAL 3

**Improved condition and resilience of natural systems**

We care for natural systems to ensure that they can sustain us in the long term.



**Figure 3: The interlocking Goals of the State NRM Plan**



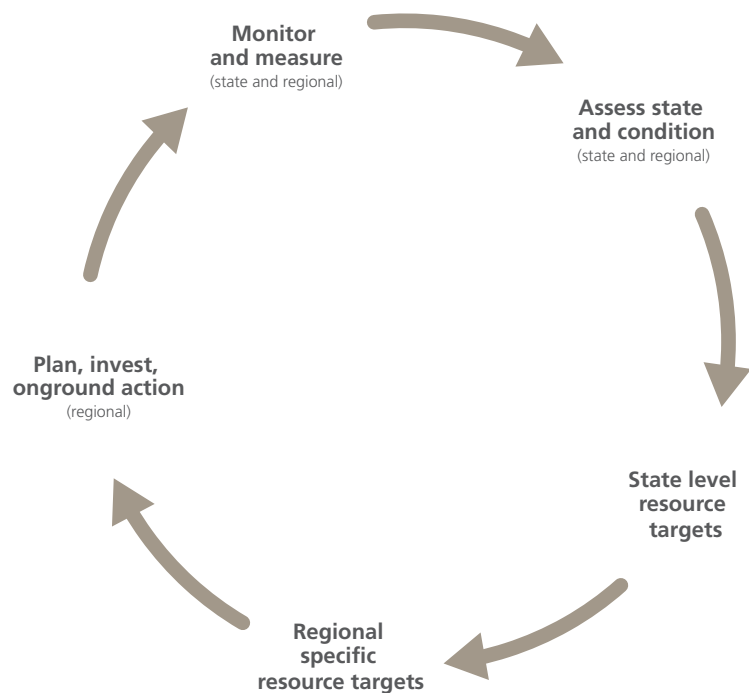
## SECTION 3: OUR ASSETS

This section is about our NRM assets: soil, water, biodiversity and people. Figure 4 shows the planning cycle that will ensure we continually adapt and improve our efforts to get the best outcomes for these assets.

### STATE AND CONDITION OF OUR RESOURCE ASSETS

To determine where we need to be putting our collective efforts, this plan includes an assessment of the state and condition of South Australia's natural resources. It is apparent that, while the condition of NRM assets is improving in many areas, there remains much to be done.















Table 1 is a snapshot of resource condition at a state level, based on the regional assessments. It informs our target setting. Appendix 1 (page 22) includes regional assessments of a number of headline indicators.








*Figure 4: The planning cycle*



**Table 1: State and condition of natural resource management assets**

INDICATORS	CONDITION AND TREND	DATA CONFIDENCE
<b>GOAL 1: People taking responsibility for natural resources and making informed decisions</b>		
NRM capacity		L
Participation in NRM activities		M
NRM leadership capacity		L
Capacity to respond to climate change		M
<b>GOAL 2: Sustainable management and productive use of land, water, air and sea</b>		
Integration of NRM and land-use planning		L
Sustainable management of natural resources for production purposes		M
Ecosystem services		M
<b>GOAL 3: Improved condition and resilience of natural systems</b>		
Soil condition in production areas		M
Native vegetation extent and condition		M
Aquatic ecosystem extent and condition		L-M
Coastal and marine ecosystem extent and condition		L
Geological features and landscapes		L
Status of threatened species and ecological communities		L
Impact of introduced species		L

**Condition**

-  Good
-  Fair/moderate
-  Variable
-  Poor
-  Unclear

**Trend**

-  Improving
-  Stable
-  Variable
-  Declining
-  Unclear

**Confidence**

- L** Low – limited data
- M** Moderate – some data
- H** High – extensive data



## PRESSURES ON OUR RESOURCE ASSETS

The condition of natural resources is never static. Their state is influenced by many factors and pressures – both global and local. Some pressures have been around for a long time and their impact can be seen in the condition of our natural resource assets today; others are more recent and will have their greatest impact in the future.

Global environmental issues – such as climate change and variability, biodiversity decline, and the water-energy-food nexus – have captured international and national attention. However, a number of issues at the state-scale are also important. These include the impacts of an increasing population, the expansion of mining and the drive for greater agricultural productivity and competitiveness.

The following are representative of the range of pressures on our assets.

### Pressures on our social capacity:

- **Effectiveness of engagement and motivation** – The extent to which NRM approaches are appropriate and effective in reaching and influencing the right people and making an effective business case for investing in sustainable NRM.

- **Adequacy and continuity of resources** – The availability of, and access to, appropriate financial, technical, physical and other resources to support sustainable NRM.
- **Knowledge gaps** – The lack of adequate information on which to base sound NRM decisions, and the loss of traditional knowledge.
- **Regional demographic and financial trends** – The changes in the numbers and makeup of regional populations and the way they consume; increasing stresses in maintaining community networks, organisations and leadership skills; and changing business models and associated time pressures.
- **Economic drivers and access to technology** – The factors such as economic pressures, availability of appropriate technologies and climate variability that pose challenges to people to adapt their management practices.
- **Land-use change and intensification** – The factors such as habitat loss or conversion, loss of agricultural land and the impacts of urban expansion and mining.
- **Pollution and nutrient enrichment** – The results of natural and human activity that cause harm to or destabilise ecosystems.
- **Invasive species (including diseases and pathogens)** – Pose various threats to natural biodiversity, ecosystem functioning, primary industries productivity and community wellbeing.

### Pressures on our natural resources:

- **Climate change** – The warming of the planet and consequent extreme weather events such as droughts and floods (while climate variability is already something we need to manage for in South Australia, the increase in severity and frequency presents additional pressure).





## GUIDING TARGETS FOR NATURAL RESOURCE MANAGEMENT

Having assessed the current conditions and trends of natural resources against our Goals, and considered the future pressures on resource condition, the plan establishes thirteen state-wide targets to guide the natural resource management effort.

Eleven of the Guiding Targets relate to specific natural resource assets; two respond to pressures that have a particularly strong influence on the current and future condition of natural resource assets. While most targets relate to a change in resource condition, they are broad and guiding. They indicate the direction of change required but they do not specify *how much* change is required. Each region will establish its interpretation of each target and articulate that in regional NRM plans.

One of the targets addresses knowledge gaps, where a better understanding of the current condition and trend is required before a condition-based target can be set.

Table 2: Guiding Targets

GOALS	GUIDING TARGETS
<b>GOAL 1: People taking responsibility for natural resources and making informed decisions</b>	1. Ensure people are better informed and improve capacity in NRM decision making.
	2. Involve more people in the sustainable management of natural resources.
	3. Improve institutional and organisational capacity to support people to manage natural resources.
	4. Improve capacity of individuals and community to respond to climate change. ( <i>pressure target</i> )
<b>GOAL 2: Sustainable management and productive use of land, water, air and sea</b>	5. All NRM planning and investment decisions take into account ecological, social and production considerations.
	6. Maintain the productive capacity of our natural resources.
<b>GOAL 3: Improved condition and resilience of natural systems</b>	7. Improve soil and land condition.
	8. Increase extent and improve condition of native vegetation.
	9. Improve condition of terrestrial aquatic ecosystems.
	10. Improve condition of coastal and marine ecosystems.
	11. Increase understanding of the condition of landscapes (geological and culturally important features). ( <i>knowledge gap target</i> )
	12. Improve the conservation status of species and ecological communities.
	13. Limit the establishment of pests and diseases and reduce the impacts of existing pests. ( <i>pressure target</i> )

## MONITORING AND EVALUATING THE CONDITION OF OUR NATURAL RESOURCES

This plan will be implemented by regional NRM boards, government agencies, local government, industry and non-government organisations. The Guiding Targets, indicators and measures in this plan will be translated into more specific and locally relevant targets, indicators and measures in regional NRM plans.

The NRM Council will continue to oversee the collection of information and reporting against these indicators so that it can audit, monitor and evaluate the state and condition of natural resources. Measuring and evaluating indicators against each target set in this plan and the regional NRM plans will enable everyone involved in natural resource management to determine whether they are on the right track or whether they need to adapt their approach.

To ensure improved and consistent monitoring and evaluation that will improve our capacity to report on changes to our natural resource assets, a priority action to develop an integrated NRM Reporting Framework has been included (Priority 7, page 20).

Along with the Guiding Targets, indicators and measures, Table 3 also identifies the organisation that is responsible for coordinating highest level of reporting against each target.

**Table 3: Guiding Targets, high level indicators and measures**

GUIDING TARGETS	HIGH LEVEL NRM INDICATOR	REPRESENTATIVE MEASURES	LEAD REPORTING (ASSISTED BY)
1. Ensure people are better informed and improve capacity in NRM decision making.	NRM capacity	<ul style="list-style-type: none"> <li>Number of programs to engage people in NRM and trends in their awareness of regional NRM processes</li> <li>Trends in the knowledge and skills of natural resource managers and their advisers to support sustainable NRM</li> <li>Number and type of stakeholders contributing as partners in NRM projects</li> </ul>	NRMB/DEWNR
2. Involve more people in the sustainable management of natural resources.	Participation in NRM activities	Number of volunteers and volunteer organisations working to improve the management of natural resources	DEWNR (NRMB, local government)
		Number of Aboriginal people employed or participating in NRM programs and activities	DEWNR/DPC (NRMB)
		Number of people attending training activities in sustainable NRM	DEWNR/PIRSA (NRMB)
3. Improve institutional and organisational capacity to support people to manage natural resources.	NRM leadership capacity	Trends in the development of leadership skills and effective governance	DEWNR/NRMB/NRMC

**Table 3 (cont): Guiding Targets, high level indicators and measures**

GUIDING TARGETS	HIGH LEVEL NRM INDICATOR	REPRESENTATIVE MEASURES	LEAD REPORTING (ASSISTED BY)
<b>4. Improve capacity of individuals and community to respond to climate change.</b>	Capacity to respond to climate change	<ul style="list-style-type: none"> <li>Understanding of the causes and potential impacts of climate change</li> <li>Number of completed climate change adaptation plans</li> </ul>	DEWNR/NRMB/ local government
<b>5. All NRM planning and investment decisions take into account ecological, social and production considerations.</b>	Integration of NRM and land-use planning	<ul style="list-style-type: none"> <li>Number of regions with conservation goals and measures defined in NRM plans (includes public and private areas)</li> <li>Number of regions with native vegetation maps in Structure Plans (priority areas for urban growth)</li> <li>Alignment of The South Australian Planning Strategy with regional NRM policies and priorities</li> </ul>	DEWNR/NRMB/ DPTI
<b>6. Maintain the productive capacity of our natural resources.</b>	Sustainable management of natural resources for production purposes	<ul style="list-style-type: none"> <li>Proportion of SA's water resources managed within sustainable limits, including trends in water use efficiency in irrigation areas</li> <li>Trends in stormwater captured and wastewater recycled</li> <li>Trends in groundwater levels and salinity of groundwater and water quality of the River Murray</li> </ul>	DEWNR (EPA, SA Water, NRMB, local government)
		<ul style="list-style-type: none"> <li>Trend in regional productivity that incorporates inputs and outputs from agriculture, fisheries, forestry, horticulture</li> <li>Trends in recreational and commercial marine species stocks</li> <li>Trend in the adoption of practices that lead to improved management of natural resources</li> </ul>	PIRSA (NRMB, DEWNR and industry)
	Ecosystem services	<ul style="list-style-type: none"> <li>Number of tourists visiting regional SA and number of people that visit parks</li> <li>Total carbon sequestered (above ground and in soil)</li> </ul>	DEWNR (NRMB)



GUIDING TARGETS	HIGH LEVEL NRM INDICATOR	REPRESENTATIVE MEASURES	LEAD REPORTING (ASSISTED BY)
7. Improve soil and land condition.	Soil condition in production areas	<ul style="list-style-type: none"> <li>Protection of agricultural cropping land from soil erosion (average annual protection)</li> <li>Trends in paddock condition on pastoral lands</li> <li>Trends in soil condition in agricultural areas (fertility, soil structure, dryland salinity and soil acidity)</li> </ul>	DEWNR (NRMB, Pastoral Board)
8. Increase extent and improve condition of native vegetation.	Native vegetation extent and condition	<ul style="list-style-type: none"> <li>Trends in extent and condition of native vegetation</li> <li>Trends in the area of native vegetation protected on public and private land</li> </ul>	DEWNR (NRMB, local government, Native Vegetation Council)
9. Improve condition of terrestrial aquatic ecosystems.	Aquatic ecosystem extent and condition	<ul style="list-style-type: none"> <li>Trends in condition of rivers, streams, wetlands and drains</li> <li>Trends in the rate of flow at the Murray mouth</li> </ul>	DEWNR (EPA, NRMB)
10. Improve condition of coastal and marine ecosystems.	Coastal and marine ecosystem extent and condition	<ul style="list-style-type: none"> <li>Trends in the extent and condition of coastal ecosystems (including foreshore, rocky reefs, seagrass, saltmarsh and mangroves)</li> <li>Trends in the condition of habitats and species in marine parks and sanctuary zones</li> </ul>	DEWNR/EPA (NRMB, PIRSA, Coastal Protection Board, Marine Parks Council, local government)
11. Increase understanding of the condition of landscapes (geological and culturally important features).	Geological features and landscapes	<ul style="list-style-type: none"> <li>Condition of above and below ground geological features and landscapes, including those that are culturally important for Aboriginal people</li> </ul>	DEWNR/NRMB
12. Improve the conservation status of species and ecological communities.	Status of threatened species populations and ecological communities	<ul style="list-style-type: none"> <li>Proportion of all species and ecological communities listed in each EPBC Act category</li> <li>Number of threatened species and ecological communities for which priority actions are being implemented</li> </ul>	DEWNR (NRMB, environmental peak bodies and community groups)
13. Limit the establishment of pests and diseases and reduce the impacts of existing pests.	Impact of introduced species	<ul style="list-style-type: none"> <li>Number of detections of weeds, other pests and disease incursions, and trends in their distribution and abundance</li> <li>Evidence of risk management being applied to ensure that coordinated control programs focus on priority pests</li> </ul>	PIRSA – Biosecurity SA/DEWNR (NRMB)

## SECTION 4: THE MANAGEMENT SYSTEM

This section of the plan describes:

- the individuals, groups and organisations that are part of NRM
- the cycle of continuous improvement for the system
- priorities for strengthening the system
- the new NRM Standard for best practice natural resource management.

### WHO DOES WHAT IN NRM IN SOUTH AUSTRALIA

The State NRM Plan can't work without an enthusiastic, well resourced and organised system of individuals and organisations committed to managing our natural resources for the long term.

Some groups are Australia-wide, some are state, regional or local. All levels of government are involved and there are community groups and private sector organisations. Each can contribute to improved natural resource management, and is part of a system that will deliver this plan.

### Primary producers and resource managers

Ultimately, it is those directly managing our land, water and biodiversity assets who will deliver the improvements in condition sought by this plan. The decisions and investments of farmers, fishers, miners, foresters, aquaculturists and park managers are all critical and vital.

### Aboriginal people

We recognise the special role of Aboriginal people as traditional owners and first Australians. The NRM Act acknowledges Aboriginal heritage and the interests of the traditional owners of the land and other resources. Aboriginal people and organisations are also land managers in their own right.

### Industry, non-government organisations and broader community

Industry bodies have a crucial role to connect producers and policy makers to get the best social and economic outcomes.

The multitude of organisations that have a philanthropic or volunteer characteristic involved in NRM provide a range of contributions, from advocacy, special interest and service delivery, to community education and volunteering. These include Landcare groups, Friends groups, Local Action Planning groups and conservation organisations.

The broader community also has a role in NRM. Their NRM levy helps pay for works that contribute to the health and wellbeing of their environment and community. Consumption patterns, an appreciation of natural assets and a willingness to volunteer for works are all vital contributions to the success of this plan.



**Figure 5:** The individuals, groups and organisations that are part of NRM in South Australia

## Local government

All local governments, irrespective of their size or location, make a significant contribution to the management and protection of South Australia's natural resources.

Local governments are land managers and administrators. They are responsible for implementing land use planning policies that regulate development across the council area, as well as regulating activities that may impact on NRM.

Local governments also help to translate the policies of Australian and State governments into on-ground projects; they work closely with community and environmental groups on conservation activities and they lead and deliver education programs within their community.

Under the NRM Act, local governments collect the regional NRM levy for regional NRM boards.

## Regional NRM boards

Regional NRM boards help implement the State NRM Plan, and other NRM related strategies. The State NRM Plan provides a guiding framework for each regional plan. NRM boards plan and report, by means of a regional NRM plan, and business and implementation plans. These plans influence investment and how natural resources are managed in the region.

There are eight regional NRM boards: Adelaide and Mount Lofty Ranges, Alinytjara Wilurara, Eyre Peninsula, Kangaroo Island, Northern and Yorke, South Australian Arid Lands, South Australian Murray-Darling Basin, and South East.

The role of regional NRM boards is to:

- Lead regional natural resource management by listening to communities, developing regional NRM plans, advising government and preparing innovative solutions.
- Connect government and communities to regional natural resource management issues.
- Work with government and communities to establish effective partnerships in delivery of NRM programs and projects.





### **NRM Council**

The Natural Resources Management Council was established under the NRM Act 2004 as the state-wide peak body for natural resource management. The Council provides advice to the Minister for Sustainability, Environment and Conservation, and leadership at the state level for NRM – primarily through the development of this State NRM Plan. The Council works with the eight regional NRM boards, government agencies and peak bodies to implement the State NRM Plan. The NRM Council also works with regional NRM boards to ensure that their continuous review cycle and the State NRM Plan processes are aligned and cost effective.

The NRM Council is composed of community members, nominated by the Minister for their collective knowledge and expertise covering: primary production; soil conservation and land management; conservation and biodiversity management; water resources management; business administration; local government administration; urban and regional planning; Aboriginal interests and Aboriginal heritage; coast, estuarine and marine management; fisheries management; pest animal and plant control; and natural and social science.

### Peak bodies

Under the NRM Act, the NRM Council includes nominees from three peak bodies.

- **SA Farmers Federation** aims to ensure that our farming communities continue to play a key role in the development and sustainability of our state as well as their own livelihoods.
- **Conservation Council SA** is a peak body representing groups whose main purpose is conservation and protection of the environment.
- **Local Government Association** represents councils and negotiates with state and federal governments on legislation that affects the role and function of local government in the NRM area.

Other industry organisations and statutory bodies also support the management of the state's natural resources, for example, SA Chamber of Mines and Energy and the Advisory Board of Agriculture.

### SA Government agencies

Under the NRM Act, the SA Government plays several roles in managing our natural resources, including policy leadership, planning, compliance, coordination/facilitation and implementation. The State NRM Plan guides the way the State Government prioritises investment and effort in NRM.

A number of State Government departments have NRM responsibilities. They come together as the Chief Executive's NRM Group to ensure agencies work collaboratively and in partnership to achieve NRM outcomes and meet their legislative responsibilities.

- **Department of Environment, Water and Natural Resources (DEWNR)** sets many of the state-wide policies for NRM that will lead to a sustainable and prosperous state where natural resources are used wisely. It supports the NRM Council and it provides an integrated delivery service in each region for environment and NRM matters. Each region is led by a Regional Manager who is responsible to both the Chief Executive DEWNR and the regional NRM board.

- **Department of Planning, Transport and Infrastructure** is responsible for developing the South Australian Planning Strategy which guides land use and development across the state. The Planning Strategy has key objectives to ensure that South Australia is competitive, liveable, sustainable and resilient to climate change.
- **Environment Protection Authority** is SA's leading environmental regulator, responsible for the protection of air and water quality, and the control of pollution, waste, noise and radiation.
- **Primary Industries and Regions SA (PIRSA)** promotes economic development of the state's natural resource-based industries and seeks to build prosperity through sustainable use and management of those resources. PIRSA looks after Biosecurity SA which, working with industry, community and government partners, minimises risks from priority pests and diseases through effective and efficient systems for prevention, preparedness, incursion response and ongoing management. It is responsible to the Minister for Sustainability, Environment and Conservation under the NRM Act for this function in relation to weeds and vertebrate pests.
- **SA Water** plays a leading role in providing a sustainable and secure water supply for the community and minimising any impact on the environment.



## The Minister for Sustainability, Environment and Conservation

The Minister administers the NRM Act and has overall responsibility for the management and planning of NRM in SA. Through a range of legislative mechanisms in the NRM Act, the Minister oversees the achievement of the objectives of the NRM Act through the integration of NRM.

The Minister is also responsible for a range of other environment and natural resource legislation.

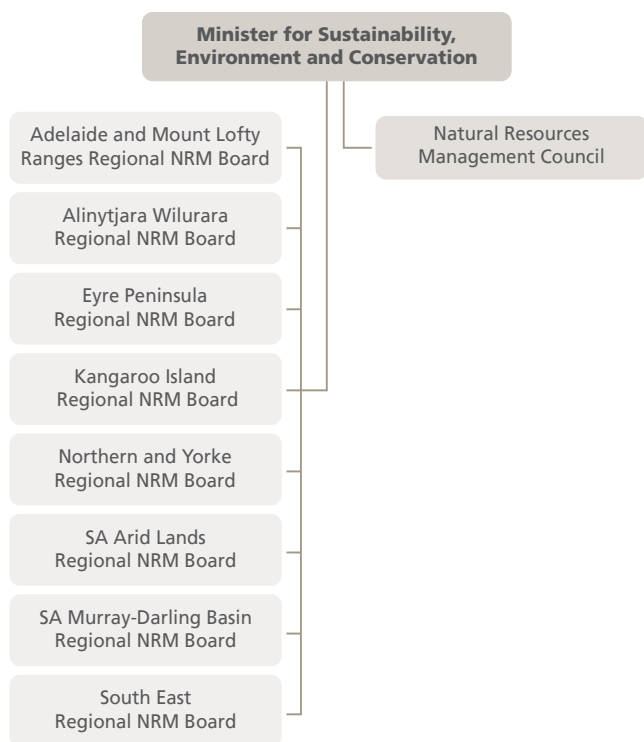
## Australian Government

The Australian Government partners with the state and regional NRM boards to invest in projects. There are a range of funding and partnership opportunities for the environmental management of our natural resources (e.g. Caring for our Country, Clean Energy Futures).

Regional Development Australia (RDA) is an Australian Government initiative made up of a network of local committees who work with all levels of government, business and community groups to support the development of their regions.

## Research organisations

South Australian and national research institutions play an important role in informing management direction and supporting continuous improvement in NRM approaches. Knowledge of our natural and social systems is a necessary input to inform decision making in the management of natural resources. Supported by industry and in collaboration with NRM boards and government agencies, research centres provide innovative solutions to the sustainable management challenges on farms and across landscapes and environments.



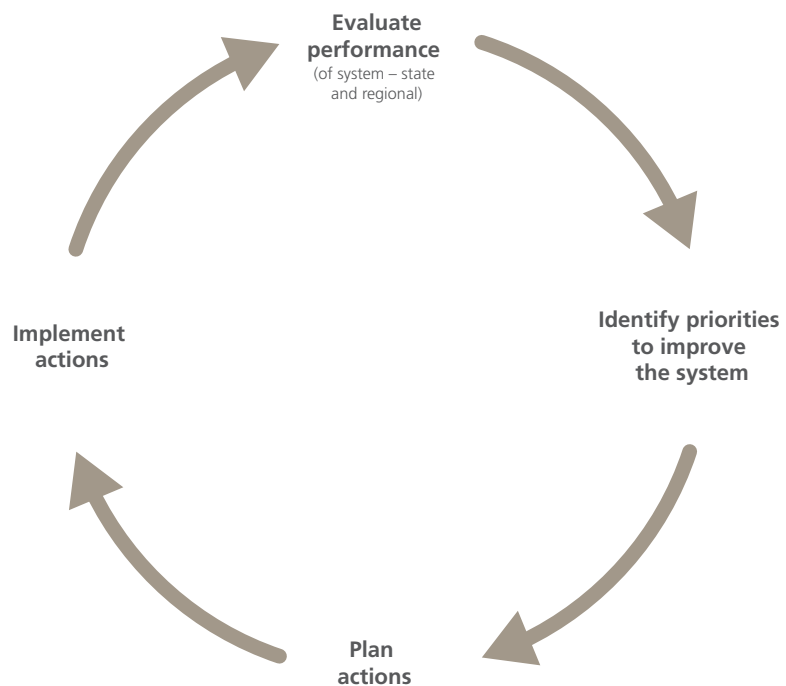
**Figure 6:** The statutory relationships established under the NRM Act



## CONTINUOUS IMPROVEMENT OF THE SYSTEM

To ensure the Management System in South Australia functions at its best and continues to improve, the whole system will operate in a continuous improvement cycle.

Through community consultation and feedback as part of developing the State NRM Plan, an informal performance evaluation of the Management System was completed. Through this process, priorities were developed to improve the system (page 20), including one to implement the NRM Standard to guide decision making and support effective performance evaluation and continuous improvement.



*Figure 7: Continuous improvement cycle*





## PRIORITIES TO STRENGTHEN THE MANAGEMENT SYSTEM

The NRM Council has consulted with the NRM community and has identified state-wide priorities to strengthen the Management System. Many other NRM projects and activities will take place across the state, but this list identifies areas in need of specific improvement. By paying attention to and working on these issues, the NRM Council aims to remove some of the barriers to good natural resource management.

Each action will be managed as a discrete project coordinated at a state level by government agencies and monitored by the NRM Council. However, each may entail action by government agencies, boards, groups, community members and individuals.

1. **Improve grass-roots community engagement and participation in NRM, including in urban communities.**
2. **Increase the involvement of Aboriginal people in NRM across South Australia, and increase the recognition and use of Aboriginal knowledge.**
3. **Build on and improve education programs to ensure the importance of the environment and managing our natural resources sustainably is learnt at an early age.**
4. **Strengthen partnerships between government, local government, NRM boards, industry and non-government organisations.**
5. **Improve connections between NRM and statutory land-use planning so they inform one another.**
6. **Implement the NRM Standard to guide decision making and support effective performance evaluation and continuous improvement.**
7. **Develop an integrated NRM Reporting Framework to improve our understanding of natural resource condition.**
8. **Increase the use of local knowledge in NRM.**
9. **Work with agencies and boards to ensure we have an effective NRM system with competent boards, appropriate governance, clear policies and agreed priorities.**
10. **Improve the support for NRM amongst the broader business and political community.**

## **MAKING BETTER DECISIONS – THE NRM STANDARD**

The NRM Standard aims to ensure there is consistency in how people manage natural resources across regions and within agencies. The NRM Standard is a checklist for all NRM practitioners – it is intended to guide decision making and encourage adaptive management and continuous improvement.

The Standard is the following set of seven principles for effective, high quality NRM practice. Natural resource managers are expected to use this Standard to guide decision making and project development.

The application of the Standard is one of the priority actions (see Priority 6, page 20). To promote and stimulate improvement in what we do and how we go about it, consideration will be given to its use in evaluating agency performance.

### **Leadership**

Strong leadership and sound governance practices are present at all layers (institutional, community groups and individuals) to drive arrangements, create the right settings and model behaviours.

### **Collection and use of knowledge**

The best available knowledge and science is used to inform decisions in a structured and transparent manner, and information is managed to meet user needs and satisfy accountability requirements.

### **Determination of scale**

Natural resource issues are managed at the optimal spatial, temporal and institutional scale to maximise effective contribution to broader goals, deliver integrated outcomes and prevent or minimise adverse consequences.

### **Opportunities for collaboration**

To maximise gains, share or minimise costs or deliver multiple benefits, collaboration with other parties is explored and pursued wherever possible.

### **Community engagement**

The community is meaningfully engaged in the planning, implementation and review of natural resource management strategies and the achievement of identified goals and targets.

### **Risk management**

Risks and impacts are considered and managed to maximise efficiency and effectiveness, ensure success and avoid, minimise and control adverse impacts.

### **Monitoring, evaluation and adaptive management**

Progress towards goals and targets is measured and demonstrated by means of regular monitoring, evaluation and reporting of organisational and project performance. These results are used to guide improved practice.



## APPENDIX 1: STATE AND CONDITION OF NATURAL RESOURCES

The following assessment is a summary of the state and condition of South Australia's natural resources, including a snapshot of condition and trends across the eight NRM regions:

- Adelaide and Mount Lofty Ranges (AMLR)
- Alinytjara Wilurara (AW)
- Eyre Peninsula (EP)
- Kangaroo Island (KI)
- Northern and Yorke (NY)
- South Australian Arid Lands (SAAL)
- South Australian Murray-Darling Basin (SAMDB)
- South East (SE).

State-wide assessments have been based on the *State of Environment Report for South Australia 2008*, and more recent information sources where available. Regional assessments have been based on the *State of the Region* sections of regional NRM plans, other monitoring and evaluation reports, and expert opinion. While this assessment is somewhat subjective, it is expected that as monitoring and evaluation systems are continually improved, so too will our ability to assess and report on regional and state-wide trends in natural resource condition, to inform planning and priority setting at appropriate scales.



## COMMUNITY CAPACITY

**Condition:** Moderate

**Trend:** Variable

**Confidence in trend:**

Moderate to low (some data available)

**Overview:** Overall, trends in capacity across the community have been mixed, with positive progress in some areas and limited progress in others. General awareness and understanding of NRM issues is increasing, as is access to appropriate skills and knowledge.

Progress is variable in many other aspects of capacity, including the development of effective partnerships and community networks; transfer of information to industry; and the integration of Aboriginal knowledge and values in NRM.

**Main pressures:**

- effectiveness of engagement and motivation
- adequacy of resources
- knowledge gaps
- discontinuity in program and funding cycles
- regional demographic and socio-economic conditions

*Regional trends:*

AMLR	AW	EP	KI	NY	SAAL	SAMDB	SE

Condition: Good Fair/moderate Variable Poor Unclear Trend: Improving Stable Variable Declining Unclear

## PARTICIPATION IN NRM ACTIVITIES

**Condition:** Moderate

**Trend:** Improving

**Confidence in trend:**

Moderate (some data available)

**Overview:** Participation in NRM activities is generally considered to be increasing. Some regions have reported increases in measures such as uptake of sustainable land management practices; and the number of landholders, volunteers and schools involved in NRM activities.

**Main pressures:**

- effectiveness of engagement and motivation
- adequacy of resources
- discontinuity in program and funding cycles
- regional demographic and socio-economic conditions

*Regional trends:*

AMLR	AW	EP	KI	NY	SAAL	SAMDB	SE

Condition: Good Fair/moderate Variable Poor Unclear Trend: Improving Stable Variable Declining Unclear



## CAPACITY OF INDIVIDUALS AND COMMUNITIES TO RESPOND TO CLIMATE CHANGE

**Condition:** Poor

**Trend:** Improving

**Confidence in trend:**

Moderate (some data available)

**Overview:** A draft Climate Change Adaptation Framework for South Australia has been developed, and is currently being reviewed.

The framework aims to deliver improved coordination between the public and private sectors and the community, and

will support the identification of climate change risks and the development of climate change adaptation plans. Many regional initiatives are also being undertaken (including vulnerability assessments and consideration of potential adaptation strategies) to improve the ability to plan for climate change responses.

**Main pressures:**

- effectiveness of engagement and motivation
- adequacy of resources
- knowledge gaps
- discontinuity in program and funding cycles
- regional demographic and socio-economic conditions

*Regional trends:*

AMLR	AW	EP	KI	NY	SAAL	SAMDB	SE

Condition: Good Fair/moderate Variable Poor Unclear Trend: Improving Stable Variable Declining Unclear

## SOIL CONDITION

**Condition:** Moderate

**Trend:** Variable

**Confidence in trend:**

Moderate (some data available)

**Soil salinity:** Decreasing. In the short term there is generally a reduced risk of dryland salinity in areas that have experienced lower than average rainfall since the mid 1990s.

**Chemical contamination:** Little data available. Use of chemicals with residual impacts decreasing, while awareness and knowledge are increasing.

**Soil acidity:** Increasing. Significant areas are affected by acidity.

**Soil protection (agricultural regions):**

There has been steady improvement in the area of agricultural cropping land protected from erosion, but there is scope for further improvement to reach 2020 SASP targets.

**Soil protection (pastoral regions):**

Generally stable apart from seasonal fluctuations. Second round assessments of pastoral leases in the Kingoonya District showed some improvement. Many parts of the AW region are still naturally vegetated with

a healthy soil crust, indicating good soil condition. Soil condition is estimated to be poor in areas where camels, cattle and/or rabbits are in large numbers, such as in the vicinity of natural surface waters.

**Soil carbon:** Unknown. The amount and type of organic carbon in the soil can greatly affect soil productivity. Climate change is likely to have significant impacts on carbon storage in the soil.

**Main pressures:**

- total grazing pressure
- pest animals
- unsustainable agricultural practices
- drought

*Regional trends:*

AMLR	AW	EP	KI	NY	SAAL	SAMDB	SE

Condition: Good Fair/moderate Variable Poor Unclear Trend: Improving Stable Variable Declining Unclear

## GROUNDWATER QUANTITY AND QUALITY

**Condition:** Moderate

**Trend:** Improving

**Confidence in trend:**

Moderate to low (some data available)

**Overview:** The number of water resource management areas that are subject to formal management arrangements is increasing, limiting groundwater development to sustainable levels.

There are significant knowledge gaps in relation to trends in groundwater extent and condition in a number of non-prescribed areas, including the AW region.

Groundwater levels that had declined during the drought are beginning to recover due to improved rainfall over the past two years.

**Main pressures:**

- unsustainable levels of extraction
- changes in land use
- climate variability

*Regional trends:*

AMLR	AW	EP	KI	NY	SAAL	SAMDB	SE

Condition: Good Fair/moderate Variable Poor Unclear Trend: Improving Stable Declining Unclear

## SURFACE WATER QUANTITY AND QUALITY

**Condition:** Variable

**Trend:** Improving

**Confidence in trend:** High

**Overview:** Many of the ephemeral watercourses and wetlands in the agricultural and pastoral areas have responded to above-average rainfall in 2010-11. For example, most of the ephemeral salt lakes have filled, and the ephemeral desert rivers are flowing. Water quality has been affected in parts of the arid zone where high densities of camels and/or cattle have access to natural surface waters.

Salinity levels in the main channel of the River Murray are stable, but Lake Albert continues to have high salinity levels. Recent high inflows have flushed the river system bringing floodplain nutrients back into the river, but good flows and flood turbidity have suppressed algal blooms. Nutrient, biological, sediment and other loads vary significantly according to the source flows. Management of localised sources of pollution has improved water quality, particularly during low flow conditions.

**Main pressures:**

- unsustainable harvesting and extraction
- dryland salinity
- loss of riparian vegetation
- intensive agricultural practices
- soil and streambank erosion
- climate variability and climate change
- changes in land use

*Regional trends:*

AMLR	AW	EP	KI	NY	SAAL	SAMDB	SE

Condition: Good Fair/moderate Variable Poor Unclear Trend: Improving Stable Declining Unclear

## WATER FOR CONSUMPTIVE USE

**Condition:** Moderate

**Trend:** Variable

**Confidence in trend:**

Moderate to high

**Overview:** Recent high flows in the River Murray, and above-average rainfall following the extended drought, have improved the availability of water for consumptive use across most of the state.

Salinity levels have stabilised in the main channel of the River Murray, but Lake Albert continues to have high salinity levels. In pastoral areas, significant flooding in 2010-11 has enabled aquifer recharge after the drought. A number of initiatives are being undertaken through South Australia's *Water for Good* strategy to diversify water sources for consumptive use, and improve the allocation and efficiency of water use.

Anecdotal information suggests a number of community supplies in the AW region are becoming increasingly saline with decreasing water levels in some bores.

**Main pressures:**

- unsustainable use
- sedimentation, eutrophication and pollution of water sources

*Regional trends:*

AMLR	AW	EP	KI	NY	SAAL	SAMDB	SE

Condition: Good Fair/moderate Variable Poor Unclear Trend: Improving Stable Variable Declining Unclear

## NATIVE VEGETATION EXTENT AND CONDITION

**Condition:** Fair

**Trend:** Declining

**Confidence in trend:**

Moderate to low (some data available)

**Overview:** The extent of native vegetation is high in the arid zone, and moderate in the agricultural regions. Current trends in the extent of native vegetation are not well quantified. Large-scale clearance is prevented or offset under the *Native Vegetation Act 1991* and associated regulations.

Trends in vegetation condition are also largely unquantified, but are thought to

be declining overall due to a number of threatening processes, including the ongoing effects of past clearance and fragmentation (particularly in the agricultural regions); inappropriate grazing regimes; and pest plants and animals. The effects of climate change are likely to exacerbate impacts on vegetation.

Increasing development in peri-urban and coastal areas is a significant threat to the condition and extent of native vegetation. Seasonal conditions also influence vegetation condition, particularly in the arid regions

with vegetation condition responding favourably to recent rainfall events.

Recent assessments on pastoral leases suggest that stock grazing management is generally changing to suit the carrying capacity of the land. The spread of introduced Buffel Grass is a significant and increasing threat to vegetation condition in many parts of the arid zone.

**Main pressures:**

- clearance associated with changed land use
- inappropriate grazing regimes
- weed invasion
- climate change

*Regional trends:*

AMLR	AW	EP	KI	NY	SAAL	SAMDB	SE

Condition: Good Fair/moderate Variable Poor Unclear Trend: Improving Stable Variable Declining Unclear

## AQUATIC ECOSYSTEM EXTENT AND CONDITION

**Condition:** Variable

**Trend:** Declining

**Confidence in trend:**

Moderate (some data available)

**Overview:** A 1-in-20-year flood along major watercourses in the Lake Eyre Basin has extensively inundated floodplains, reinstated refuge waterholes, and recharged seasonal and permanent lakes. In other areas of the state, recent above-average rains and increased flows have enabled wetlands and other aquatic ecosystems to recover post drought.

The River Murray, Lower Lakes and Coorong ecosystems were severely stressed by the drought but have begun recovering with present high flow conditions. Some sites in the Murray-Darling Basin have benefited from environmental water allocations. Historically, heavy alteration of flow regimes has led to a significant decline in ecosystem function and health.

In the arid zone, aquatic ecosystems that are accessible by camels and cattle are declining in condition.

**Main pressures:**

- extraction, drainage and water storage development
- altered flow regimes
- land use change
- access by stock and feral animals
- salinisation

*Regional trends:*

AMLR	AW	EP	KI	NY	SAAL	SAMDB	SE

Condition: Good Fair/moderate Variable Poor Unclear Trend: Improving Stable Variable Declining Unclear

## CONDITION OF COASTAL ECOSYSTEMS

**Condition:** Variable

**Trend:** Declining

**Confidence in trend:**

Moderate (some data available)

**Overview:** The state and condition of coastal ecosystems is largely reflective of the number and size of urban centres positioned near the coast. Development in coastal areas is increasing, and has significantly impacted on the extent and condition of coastal vegetation systems.

The water quality of freshwater flows has resulted in the degradation of coastal waters, particularly around urban centres. Freshwater flows typically contain elevated concentrations of sediments, pollutants and nutrients, which act to slow the growth and recruitment of seagrasses and other benthic species. The impacts of degraded coastal ecosystems will be exacerbated by climate change, which is likely to increase the frequency and magnitude of extreme weather events.

**Main pressures:**

- increased development
- altered freshwater run-off (stormwater, drainage)
- sediment, pollutant and nutrient input
- sea-level rise and extreme weather events

*Regional trends:*

AMLR	AW	EP	KI	NY	SAAL	SAMDB	SE
					N/A		

Condition: Good Fair/moderate Variable Poor Unclear Trend: Improving Stable Variable Declining Unclear



## MARINE ECOSYSTEM EXTENT AND CONDITION

**Condition:** Variable

**Trend:** Declining

**Confidence in trend:**

Moderate (some data available)

**Overview:** The condition and extent of seagrass and key taxa that are associated with rocky reefs are declining along metropolitan Adelaide and along parts of Kangaroo Island and the south-east of South Australia.

Ocean acidification is increasing, due to the increased concentration of carbon dioxide in the atmosphere. This has the effect of reducing the growth rates of many species of phytoplankton which may reduce the productivity of marine ecosystems and the oceanic uptake of atmospheric carbon dioxide.

Commercial fisheries that operate in South Australian waters are known to impact on several species of conservation significance, and often the level of bycatch and the population consequences are poorly understood.

**Main pressures:**

- commercial, recreational and illegal fishing
- aquaculture
- shipping ballast discharge
- mining
- pest animals

*Regional trends:*

AMLR	AW	EP	KI	NY	SAAL	SAMDB	SE
					N/A		

Condition: Good Fair/moderate Variable Poor Unclear Trend: Improving Stable Variable Declining Unclear

## GEOLOGICAL FEATURES AND LANDSCAPES

**Condition:** Variable

**Trend:** Variable

**Confidence in trend:**

Low (limited data available)

**Overview:** South Australia supports a unique and significant range of geological features and landscapes, and there are many designated sites of geological significance.

Many of the state's most significant geological features are protected in the parks and reserve system. Some geological features have been impacted by threats including the filling of caves and sinkholes on private land in the South East, and the excavation and removal of fossils from the Ediacaran fossil site in the Flinders Ranges. Development, exploration and mining activities may also impact on geological features.

**Main pressures:**

- exploration and mining activities
- excavation and removal
- filling of sinkholes
- coastal and other development

*Regional trends:*

AMLR	AW	EP	KI	NY	SAAL	SAMDB	SE

Condition: Good Fair/moderate Variable Poor Unclear Trend: Improving Stable Variable Declining Unclear

## THREATENED SPECIES

**Condition:** Poor

**Trend:** Declining

**Confidence in trend:**

Moderate (some data available)

**Overview:** South Australia's list of threatened species (under the schedules of the *National Parks and Wildlife Act 1972*) was last updated in 2008. While some significant gains have been made through targeted recovery efforts, the number of threatened plants and animals is likely

to be increasing overall, and populations of many threatened or near-threatened species are likely to be in decline, due to continuing or increasing threats. Pressures are often linked to past habitat loss and continued decline in the quality of remaining habitats. Climate change is expected to increase the impacts of threatening processes and place threatened species populations under further ecological stress.

**Main pressures:**

- effects of past clearance and fragmentation
- pest plants and animals
- alteration of ecological processes such as flow regimes
- changed land use

*Regional trends:*

AMLR	AW	EP	KI	NY	SAAL	SAMDB	SE

Condition: Good Fair/moderate Variable Poor Unclear Trend: Improving Stable Declining Unclear

## THREATENED ECOLOGICAL COMMUNITIES

**Condition:** Poor

**Trend:** Declining

**Confidence in trend:**

Low (limited data available)

**Overview:** The conservation status of ecological communities at the state and regional scale is poorly understood. Six ecological communities in South Australia have been listed as nationally threatened, and several more are likely to be eligible for listing.

There is currently no mechanism to list ecological communities under state legislation, but many are provisionally listed as threatened, and further assessments of conservation status are required. While there are limited monitoring data available, overall trends are considered to be in decline due to the ongoing impact of threatening processes, and incremental habitat loss.

**Main pressures:**

- effects of past habitat clearance and fragmentation
- pest plants and animals
- unsustainable grazing and other management regimes
- alteration of hydrological regimes, fire regimes and other ecological processes

*Regional trends:*

AMLR	AW	EP	KI	NY	SAAL	SAMDB	SE

Condition: Good Fair/moderate Variable Poor Unclear Trend: Improving Stable Declining Unclear

## APPENDIX 2: OBJECTS AND PRINCIPLES OF THE *NATURAL RESOURCES MANAGEMENT ACT 2004*

1. The **objects** of this Act include to assist in the achievement of ecologically sustainable development in the State by establishing an integrated scheme to promote the use and management of natural resources in a manner that –
  - a. recognises and protects the intrinsic values of natural resources; and
  - b. seeks to protect biological diversity and, insofar as is reasonably practicable, to support and encourage the restoration or rehabilitation of ecological systems and processes that have been lost or degraded; and
  - c. provides for the protection and management of catchments and the sustainable use of land and water resources and, insofar as is reasonably practicable, seeks to enhance and restore or rehabilitate land and water resources that have been degraded; and
  - d. seeks to support sustainable primary and other economic production systems with particular reference to the value of agriculture and mining activities to the economy of the State; and
  - e. provides for the prevention or control of impacts caused by pest species of animals and plants that may have an adverse effect on the environment, primary production or the community; and
  - f. promotes educational initiatives and provides support mechanisms to increase the capacity of people to be involved in the management of natural resources.
2. For the purposes of subsection (1), ecological sustainable development comprises the use, conservation, development and enhancement of natural resources in a way, and at a rate, that will enable people and communities to provide for their economic, social and physical wellbeing while –
  - a. sustaining the potential of natural resources to meet the reasonably foreseeable needs of future generations; and
  - b. safeguarding the life-supporting capacities of natural resources; and
  - c. avoiding, remedying or mitigating any adverse effects of activities on natural resources.

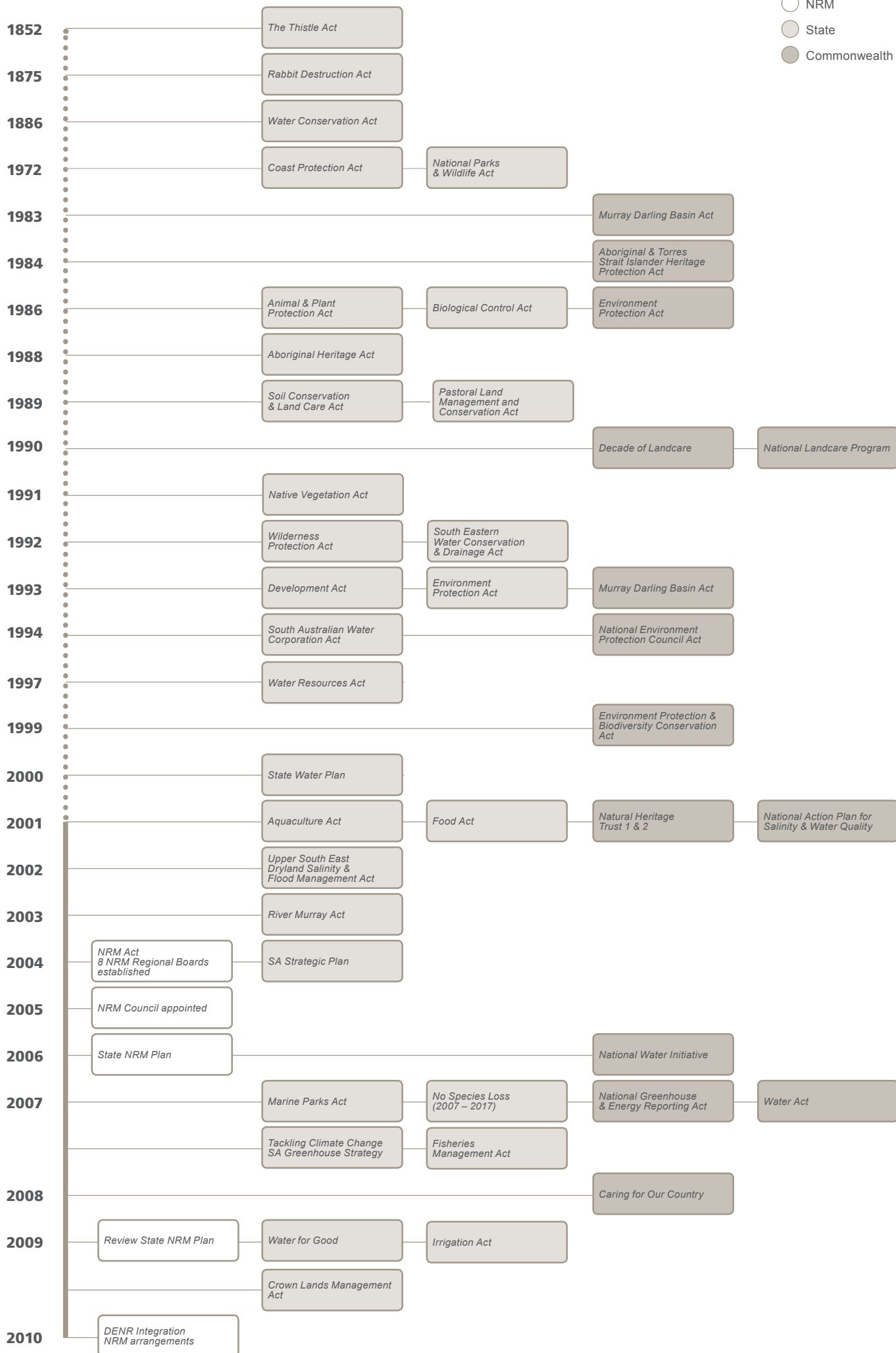
3. The following **principles** should be taken into account in connection with achieving ecologically sustainable development for the purposes of this Act:
- a. decision-making processes should effectively integrate both long term and short term economic, environmental, social and equity considerations;
  - b. if there are threats of serious or irreversible damage to natural resources, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation;
  - c. decision-making processes should be guided by the need to evaluate carefully the risks of any situation or proposal that may adversely affect the environment and to avoid, wherever practicable, causing any serious or irreversible damage to the environment;
  - d. the present generation should ensure that the health, diversity and productivity of the natural environment is maintained or enhanced for the benefit of future generations;
  - e. a consideration should be the conservation of biological diversity and ecological integrity;
  - f. environmental factors should be taken into account when valuing or assessing assets or services, costs associated with protecting or restoring the natural environment should be allocated or shared equitably and in a manner that encourages the responsible use of natural resources, and people who obtain benefits from the natural environment, or who adversely affect or consume natural resources, should bear an appropriate share of the costs that flow from their activities;
  - g. if the management of natural resources requires the taking of remedial action, the first step should, insofar as is reasonably practicable and appropriate, be to encourage those responsible to take such action before resorting to more formal processes and procedures;
  - h. consideration should be given to Aboriginal heritage, and to the interests of the traditional owners of any land or other natural resources;
  - i. consideration should be given to other heritage issues, and to the interests of the community in relation to conserving heritage items and places;
  - j. the involvement of the public in providing information and contributing to processes that improve decision-making should be encouraged;
  - k. the responsibility to achieve ecologically sustainable development should be seen as a shared responsibility between the public sector, the private sector, and the community more generally;
  - l. the local government sector is to be recognised as a key participant in natural resource management, especially on account of its close connections to the community and its role in regional and local planning.



# NRM TIMELINE

## Key

- NRM
- State
- Commonwealth





## POSTSCRIPT

By Michael Leunig

Australian identity? Who knows. Who cares? And does it matter that such a complex and elusive concept about nationhood be enshrined in words? Attempts to do so are often lopsided and frequently received with a shrug or a wry groan. Pronouncements about the national psyche, the bitter and the sweet, are foisted upon the citizens from above and bandied about for all sorts of purposes, but deep in their hearts people understand that there is no such thing as an average Australian. Thanks be.

Yet there is a nation of individuals who occupy a common ground – of which they are custodians, whether they realise it or not. Arrayed with a huge variety of creatures, plants and land forms, in spite of its use and misuse at the hands of settlers and occupiers, it is a unique natural estate of great beauty, spirit and strength.

While Australians may have uncertainties about the authenticity of their man-made culture, there can be

no doubt that the land beneath their feet that stretches into the unknown beyond their horizons is utterly real and natural. It has identity and integrity. It has soul.

Yet all too easily a nation that is predominantly urban in character may lose sight of its natural setting and spirit of country – and be all the poorer, sadder and less vital for such loss of connection; it may suffer some deadening loss of imagination, joyous humility and visionary innocence. A nation may turn its back on its greatest source of wisdom and underestimate how much it needs the natural world.

A white tourist from the South was heard to ask an old indigenous man in Northern Queensland how best she might get to understand and connect to the country in the way that he did. Came the brief reply with a big smile: “Just go out in the country and sleep a night on the ground there. Sleep on country”.

*Michael Leunig is a well known Australian cartoonist, political and cultural commentator, poet and artist.*

