natural resources commission

CONSULTATION PAPER

DRAFT STATE-WIDE STANDARDS AND TARGETS

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Feedback

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The Natural Resources Commission welcomes any feedback on this Consultation Paper. Feedback may be provided in person, by email or in writing and should be addressed to Liz Livingstone at the contact details above.

In February and March 2004, the NRC will hold workshops with Catchment Management Authorities and other interested stakeholders to discuss the draft state-wide standards and targets outlined in this Consultation Paper. The location and dates for these workshops will be available on the NRC's website.

The last date for written submissions in response to this Consultation Paper is 26 February 2005.

List of acronyms

CAP	Catchment Action Plan
CMA	Catchment Management Authority
DEC	Department of Environment and Conservation
DIPNR	Department of Infrastructure, Planning and Natural Resources
DLWC	Department of Land and Water Conservation (now part of DIPNR)
DPI	Department of Primary Industries
IACSEA	Independent Advisory Committee on Socio-economic Assessment
NAP	National Action Plan (for Salinity and Water Quality)
NHT	Natural Heritage Trust
NLWRA	National Land and Water Resources Audit
NRAC	Natural Resources Advisory Council
NRC	Natural Resources Commission
NRM	Natural resource management
NSW	New South Wales
NVRIG	Native Vegetation Reform Implementation Group
RFO	River Flow Objectives
SoE	State of the Environment
WQO	Water Quality Objectives

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1 Why state-wide standards and targets?

As part of an agreed national approach to natural resource management (NRM), the NSW Government has enacted legislative and policy reforms to strategically invest in NRM via regionally-based Catchment Management Authorities (CMAs). State-wide standards and targets, to be recommended by the Natural Resources Commission (NRC) and adopted by the NSW Government, are a key element of this approach. State-wide standards will define quality processes that help natural resource managers to identify and adopt best practice NRM. State-wide targets will define desirable natural resource outcomes.

The draft state-wide standards and targets in this Consultation Paper represent the outcomes of the NRC's initial work with NSW agency scientists and some CMAs. They are presented along with three case studies to show how they might be applied by CMAs in developing regionally-specific NRM investment priorities and targets. This information is designed to help a broader range of stakeholders engage in the process of refining the NRC's thinking before making final recommendations to the NSW Government on state-wide standards and targets in April 2005.

1.1 The national approach to natural resource management

State-wide standards and targets are a key element of a cooperative state and national government approach to the management of Australia's natural resources that has emerged over the last 10 years.

At the national scale, this approach manifests in two national framework documents[1] on standards and targets, and monitoring and evaluation. In NSW, the approach underpins the new *Catchment Management Authorities Act 2003* and *Natural Resources Commission Act 2003*. Bilateral agreements[2] between the state and federal governments underpin the cooperative elements of the framework.

Table 1.1 outlines the key agreements that led to the current joint management of natural resources by NSW and Commonwealth governments.

Joint state and Commonwealth initiatives to manage the environment have existed since the early 1990s.[3] However, in the late 1990s the investment opportunities presented by the creation of the Natural Heritage Trust (NHT)[4] and a desire to better harness the Landcare movement towards regionally-targeted NRM strategies, were the catalysts for a new national NRM policy.

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1 NRM Ministerial Council, *National Framework for Natural Resource Management Standards and Targets*, May 2002, and *Natural Resource Management Monitoring and Evaluation Framework*, May 2002. Available at <http://www.nrm.gov.au/monitoring/>.

2 *Bilateral Agreement between the Commonwealth of Australia and the State of New South Wales to deliver the Natural Heritage Trust*, 14 August 2003 and *Agreement between Commonwealth of Australia and State of New South Wales relating to the National Action Plan for Salinity and Water Quality*, 17 May 2002.

3 *Intergovernmental Agreement on the Environment*, 1 May 1992. *Australia's National Strategy for Ecologically Sustainable Development*, released in December 1992.

4 *Natural Heritage Trust of Australia Act 1997*.

Table 1.1 Policy directions preceding development of state-wide standards and targets

Year	NRM policy directions
1992-1999	*One Nation* statement (1992), *Intergovernmental Agreement on the Environment*: delineated governments' responsibilities; discussed cooperative setting of outcomes and standards. *Australia's National Strategy for Ecologically Sustainable Development* (1992): to facilitate coordinated and cooperative approach to ESD. Australian Audit Office report on *Commonwealth Natural Resource Management & Environment Programs* (1996): recognised importance of measuring progress. *Natural Heritage Trust of Australia Act 1997*: to help restore and conserve the environment and natural resources ($1.35 billion). *Managing Natural Resource Management in Rural Australia for a Sustainable Future,* 1999 discussion paper: proposed national, integrated and strategic approach to NRM; recommended devolution of authority to regions, strategic investment at a regional scale, capacity building.
2000	*Our Vital Resources: A National Action Plan for Salinity and Water Quality*: ($1.4 billion, 2000-2007) for improving dryland salinity and water quality; captured essence of 1999 discussion paper. *Intergovernmental Agreement on a National Action Plan for Salinity & Water Quality* issued: agreement to set national natural resource condition outcomes and standards defining best practice.
2001	Australian Audit Office report on *Performance Information for Commonwealth Financial Assistance under the Natural Heritage Trust*: noted significant management and reporting challenges; recommended that a core set of performance indicators be finalised. Additional $1 billion for NHT, extending it to 2006-07; shift to more targeted approach. NSW signed *Intergovernmental Agreement on a National Action Plan for Salinity & Water Quality*: towards implementation of targeted action within the NSW priority regions.
2002	*National Framework for Natural Resource Management Standards and Targets*: principles and requirements for NRM standards & targets; to guide investment, particularly under NAP & NHT. *National Natural Resource Management Monitoring and Evaluation Framework*: to assess progress towards improved natural resource condition. *Agreement between Commonwealth of Australia and State of New South Wales relating to the National Action Plan for Salinity and Water Quality*: adopted *National Framework for Natural Resource Management Standards & Targets*; role of Commonwealth & NSW to ensure that NAP investment is strategic, high priority and consistent with regional, statewide and national priorities. *Framework for Extension of the Natural Heritage Trust*: outlined new objectives and 10 areas of activity; interim regional arrangements for managing transition to regional implementation.
2003	*Wentworth Model for Landscape Conservation in NSW*: promoting regional delivery of NRM. *Bilateral Agreement between the Commonwealth of Australia and the State of New South Wales to deliver the Natural Heritage Trust*: investment to be based on 3 year rolling NAP/NHT regional investment strategies; joint Commonwealth/State Natural Resource Management Steering Committee. NVRIG Report: recommended new vegetation management & NRM institutional arrangements. NRM reforms announced: Native Vegetation Act amendments; announced CMAs, NRC, NRAC. NRC Act & CMAs Act: NRC to recommend state-wide standards & targets, which are to be accounted for in CMA decisions.

The current national approach to NRM was conceived in a 1999 discussion paper[5] by a national NRM task force which proposed:

- **explicit partnerships** between landholders, regional communities, industry and local, state and federal governments to advance NRM
- **devolving authority and empowering regions** to develop and implement regional strategies for managing environmental, social and economic issues
- **investing strategically and at a regional scale**, recognising that the extent of NRM issues requires effort to be targeted, but that regional communities are best placed to choose the most effective mechanisms to achieve agreed targets in their regions
- **facilitating fundamental change** to land use and industry management by innovative economic instruments and policies to promote sustainable resource management practices
- **building on Landcare** by coordinating efforts towards larger-scale projects and better harnessing the corporate sector
- **capacity building** by continued education and training in NRM practices and computer-based decision-support tools that promote integrated decision making
- **enhancing knowledge and information** to provide the data and information landholders, regional communities and governments need to adopt sustainable NRM practices.

This approach was adopted in late 2000 (and given a significant funding boost) when the federal, state and territory governments endorsed the National Action Plan for Salinity and Water Quality (NAP)[6] and signed the *Intergovernmental Agreement on a National Action Plan for Salinity and Water Quality*.[7] Among other things, this agreement committed all governments to a national set of targets and standards comprising:

- national natural resource condition outcomes that can vary between bio-geographical regions/catchments (targets)
- national management standards defining best practice NRM which, when adopted, will assist in achievement of the national natural resource condition outcomes. [8]

In 2002, all governments endorsed the *National Framework for Natural Resource Management Standards and Targets* which reinforced the need for targets and standards and established mechanisms to integrate the delivery of investments under the NAP and the second phase of NHT.

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5 National Natural Resource Management Task Force, *Managing Natural Resources in Rural Australia for a Sustainable Future: a discussion paper for developing national policy*, December 1999. See also National Natural Resource Management Task Force, *Steering Committee report to Australian governments on the public response to 'Managing Natural Resources in Rural Australia for a Sustainable Future: a discussion paper for developing a national policy'*, July 2000. Both available at <http://www.napswq.gov.au/publications/nrm-discussion.html>.

6 Council of Australian Governments' communiqué, 2 November 2000, endorsing *Our Vital Resources: A National Action Plan for Salinity and Water Quality*.

7 *Intergovernmental Agreement on a National Action Plan for Salinity and Water Quality*, issued December 2000 and signed by NSW on 2 July 2001.

8 *Intergovernmental Agreement on a National Action Plan for Salinity and Water Quality*, Section 20.

1.2 NSW natural resource management reforms

NSW has implemented the regionalised NRM approach, and augmented the model through changes to its vegetation and water management legislation.[9] Drawing on reports by the Wentworth Group of Concerned Scientists and the Native Vegetation Reform Implementation Group, NSW has established 13 CMAs, the NRC and a property-planning approach to managing native vegetation. Most recently, NSW has also enacted complementary reforms to threatened species legislation.[10]

During 2000, the NSW Government sought the advice of the then Catchment Management Boards to prepare 'Catchment Blueprint' plans for each of 21 separate regions across the state. These Blueprints were accredited in 2002 by the Commonwealth and NSW governments. However, concerns existed about how these Blueprints meshed with vegetation management plans and water management plans being developed by 20 Vegetation Management Committees and 33 Water Management Committees around the state.

In February 2003, the Wentworth Group of Concerned Scientists produced a report[11] for the NSW Government that recommended:

1. strengthening and simplifying native vegetation regulations to end broadscale clearing of native vegetation
2. setting environmental standards and clarifying responsibilities for native vegetation management to help create healthy rivers and catchments
3. using property management plans to provide investment security, management flexibility and financial support to farmers
4. providing significant levels of public funding to farmers to help meet new environmental standards and support on-ground conservation
5. restructuring institutions to improve scientific input into policy setting, improve information systems, and devolve responsibility for some NRM operations to independent Catchment Management Authorities.

The NSW Government endorsed the Wentworth Group's proposals,[12] and convened the Native Vegetation Reform Implementation Group (NVRIG) to advise it on a new native vegetation management system.

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9 *Water Management Act 2000* and *Native Vegetation Act 2003*.

10 *Threatened Species Legislation Amendment Bill 2004*, an Act to amend the *Threatened Species Conservation Act 1995*.

11 Wentworth Group of Concerned Scientists, *A New Model for Landscape Conservation in New South Wales*, February 2003. Available at <http://www.clw.csiro.au/new/>.

12 *Getting the Balance Right: Labour's plan for natural resource management*, 2003, p. 4. Available at <http://www.nswalp.com/alpweb/2003electionpolicies/Natural_Resources_Policy.pdf>.

Following NVRIG's October 2003 report,[13] the Premier announced:

- **an end to broadscale clearing of remnant native vegetation** in NSW
- **13 CMAs** across NSW to replace Catchment Management Boards, Vegetation Management Committees and Water Management Committees, and take responsibility for NRM and services
- an independent **Natural Resources Commission** to set new NRM standards and targets and audit implementation and effectiveness of Catchment Action Plans (CAPs) developed by CMAs
- a **Natural Resources Advisory Council** to provide advice and opinions of a range of stakeholders on natural resource matters to the Minister.

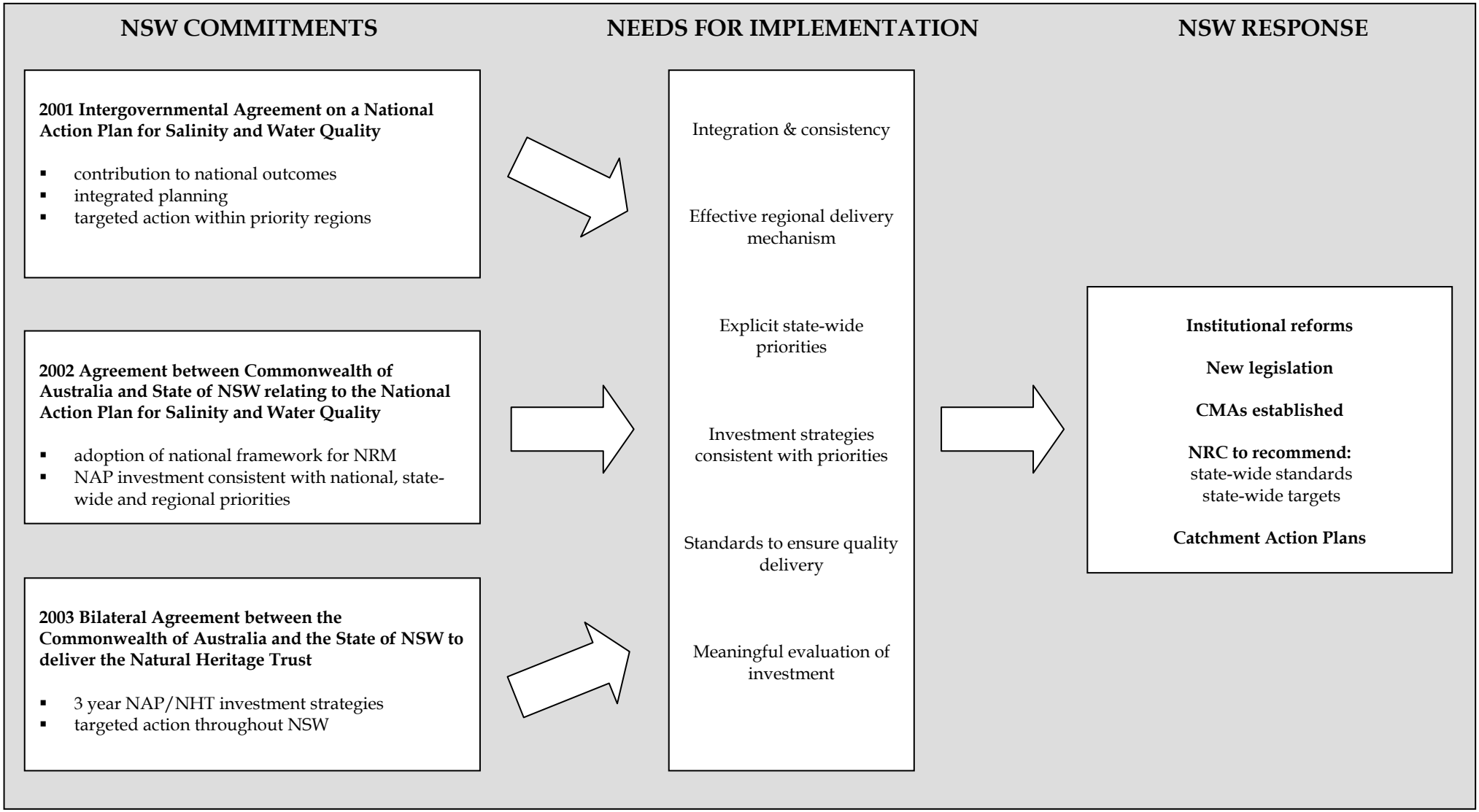
While these reforms focused strongly on native vegetation management, they also more fully implemented the national approach to NRM by:

1. completing the devolution to and empowerment of regionally-based CMAs
2. establishing state-wide targets to guide strategic investment at a regional scale
3. facilitating the adoption of state-wide standards that support best practice NRM and that enhance the quality of NRM data and knowledge available to regional communities.

Figure 1.1 illustrates how commitments in intergovernmental and bilateral agreements have fed into recent NSW reforms.

13 Native Vegetation Reform Implementation Group, *Final Report*, 2003. Available at <http://www.dlwc.nsw.gov.au/nvrig/#report>.

Figure 1.1 Natural resource management agreements and NSW policy reforms



1.3 The Natural Resources Commission's role

The NRC's broad function is to provide the NSW Government with independent advice on natural resource issues.[14] Within this, the NRC's specific functions[15] include:

a) recommending state-wide standards and targets for natural resource management issues

b) recommending the approval of CMAs' catchment action plans that are consistent with state-wide standards and targets adopted by the NSW Government

c) auditing the effectiveness of the implementation of CAPs in achieving compliance with state-wide standards and targets.

Within the national approach to NRM, the NRC's role is to advise the NSW Government on desirable natural resource outcomes, expressed as state-wide targets, and on how best practice NRM should be codified in state-wide standards.

The previously accredited Catchment Blueprints identified a range of regional priorities for investment. Subsequently, ten broad 'matters for targets' were identified in the *National Framework for Natural Resource Management Standards and Targets*. However, the NSW Government saw the need for clearer state priorities for NRM investment and to have CMAs reassess the regional investment priorities in Blueprints, where necessary, to ensure they collectively promote state-wide targets. These needs are reflected in the NRC's mandate.

1.4 The NRC's framework for state-wide standards and targets

The NRC's October 2004 report, *A Framework for State-wide Standards and Targets*, outlines key issues that need to be considered in order that the state-wide standards and targets contribute to coordinated state-scale outcomes and consistency in the quality of delivery of NRM across the state.

The paper emphasises the importance of scale. It recognises that natural processes operate at a variety of scales that do not necessarily align with CMA or other institutional boundaries and that it is important to ensure that NRM decisions are based on scale-appropriate considerations and trade-offs. Consideration of various scales including time, institutional and biophysical scales and the economic, social and cultural trade-offs that need to be made should be built into state-wide process-based standards.

It also describes how CMAs and CAPs are part of a broader picture that includes various planning instruments (for example Local and Regional Environment Plans) and legislation (for example the *Native Vegetation Act 2003* which is to end broadscale clearing of remnant native vegetation). The paper emphasises that achieving state-wide targets will depend on cooperative effort by all natural resource managers in a region.

State-wide targets are part of a hierarchy of targets from national to local scales and represent community priorities at each of these scales. The Framework Paper underlines the need for

14 *Natural Resources Commission Act 2003*, Section 12.
15 Ibid, Section 13.

consistency across these scales where possible and appropriate. However, it also recognises that there is potential for conflict when national or state priorities are different to regional priorities.

These issues have been considered throughout the process of developing draft state-wide standards and targets and some of these themes are discussed in more detail in the remaining sections of this Consultation Paper.

1.5 Next steps in developing state-wide standards and targets

The NRC is developing state-wide standards and targets with CMAs, agency scientists and other stakeholders using the consultative process outlined in chapter 8 of *A Framework for State-wide Standards and Targets*.

To date the NRC has worked closely with agency scientists via four working groups, and with a subset of CMAs via a pilot process.[16] This work has generated a set of draft state-wide standards and targets that the NRC believes identify the key issues that need to be addressed.

However, before making recommendations to the NSW Government in April 2005, it is important that the NRC now engage:

- NRM specialists from NSW agencies and the broader scientific community to draw together the technical elements of best practice NRM and incorporate these into the draft state-wide standards
- broader stakeholder and community groups to identify whether the draft state-wide targets identify and prioritise the NRM issues which they see as priorities at a state scale
- all CMAs to assess the practicality of complying with draft state-wide standards and promoting draft state-wide targets
- landholders, Landcare groups, local and Commonwealth governments, and other organisations engaged in implementing NRM, to ensure the draft state-wide standards and targets add value to the planning, investment and delivery of NRM in NSW.

16 Natural Resources Commission, *A Framework for State-wide Standards and Targets*, October 2004. Available at <http://www.nrc.nsw.gov.au/standardsDetails.asp?id=20>.

2 Draft state-wide standards

Natural resource management involves trade-offs between environmental, social, economic and cultural values of resources. These trade-offs are often best made at the regional level taking into account the particular needs of affected communities. However, they should be made within a framework that brings to bear the best available science and information, that promotes transparent decisions on the trade-offs made, that takes into account explicit state priorities and that is ultimately subject to Ministerial approval. State-wide standards should help to establish this framework.

The Framework Paper released by the NRC in October 2004 described state-wide standards as process-based standards that will ensure a consistent level of quality and rigour in NRM. They will set out the processes that should be in place to lead natural resource managers to good decisions. The standards proposed in this paper will require that:

- credible and locally relevant information is used to inform decision making
- environmental, social, economic and cultural values are considered
- national and state priorities are incorporated in regional trade-offs
- there is coordination across regional boundaries
- appropriate information is gathered and is made accessible
- monitoring and evaluation protocols are in place to assess effectiveness.

This suite of standards will promote an adaptive management approach to drive continuous improvement. This approach will be reinforced through the NRC's audit of compliance with state-wide standards.

State-wide standards will have particular relevance for CMAs but will also be applicable at a range of institutional scales. For example, the proposed standard for 'Investment planning and prioritisation' will be most relevant to CMAs in the development of CAPs and investment strategies, while the underlying principles are likely to be applicable much more broadly. State-wide standards for 'Information management' and 'Monitoring and evaluation' will be relevant to state government agencies, local government and other natural resource managers that collect and/or use NRM data.

This chapter outlines the proposed structure for state-wide process standards to underpin quality and efficiency in the delivery of NRM. It sets out the key processes or 'matters' for which the NRC believes standards should be in place. The components for three of the five proposed standards are described. These identify the key actions and processes to be implemented and followed to meet the standard. Further development of these standards will focus on bringing together, within the proposed structure, all the relevant supporting guidance and reference material that will help CMAs and others apply the standards.

Two standards, 'Monitoring and evaluation' and 'Information management', are less developed. These standards are critical for implementing consistent state-wide data protocols, ensuring information is shared and is accessible by those who need it and for ensuring that the appropriate indicators are in place to assess progress against state-wide targets. The NRC needs

considerable technical input from regional, state and national stakeholders to further develop these standards. Much existing work can be used in these standards.

The key issues for public consultation and for further development of the draft state-wide standards are:

- whether there are other issues that should be addressed by standards that are not in the identified matters for standards
- drawing together the needed guidance material for each standard and referencing past work that represents best practice
- developing standards for 'Monitoring and evaluation' and 'Information management' (this will require significant technical input from state agencies).

2.1 Approach to state-wide standards

The NRC wants to ensure that standards build on and add value to, rather than replace, existing work at regional, state and national levels. The types of standards proposed have been developed in consultation with pilot CMAs with this in mind. The following sections outline three key ideas that have shaped the proposed standards:

- Section 2.1.1 describes why the NRC is proposing process-based standards rather than minimum benchmarks.
- Section 2.1.2 discusses the potential for state-wide standards to promote accountability and have a complementary role to state-wide targets.
- Section 2.1.3 highlights the importance of the adaptive management cycle and the intent that it be embedded in NRM in NSW through the application of state-wide standards.

2.1.1 Adoption of process-based standards rather than minimum benchmarks

The Wentworth Group report recommended best practice standards for on-ground actions that set out benchmarks for managing vegetation for water quality, biodiversity and soil conservation. The proposed standards were:

- 'Water quality: conserving and restoring riparian vegetation 50m to 100m either side of major rivers and wetlands; 20m to 50m either side of creeks and 10m to 20m either side of streams;
- Salinity: recharge areas and areas prone to rising water tables;
- Biodiversity: conservation and restoration of threatened ecological communities and the conservation and restoration of critical habitat of threatened species; and
- Soil conservation: windbreaks and conserving and restoring vegetation on slopes.'[17]

17 Wentworth Group of Concerned Scientists, *A New Model for Landscape Conservation in New South Wales*, February 2003, pp. 8-9. Available at <http://www.clw.csiro.au/new/>.

These types of standards may be useful rules of thumb but can be difficult to apply state-wide because of the diversity of landscapes across NSW. This diversity means that actions that are effective in one type of landscape are not always appropriate in another. For example, the ideal minimum width of riparian corridors varies dramatically depending on channel form and type of vegetation. Existing land use will also influence what is achievable and cost-effective at a particular site.

The need for region-specific approaches to NRM has been recognised in the establishment of CMAs and in their mandate to engage with communities and to draw on locally relevant science and knowledge in planning and implementing NRM in their area. Scientific 'rules of thumb' or judgements are appropriately part of state-wide standards when considered in the context of locally relevant information and the social, economic, environmental and cultural trade-offs. The proposed process-based standards mean that the processes will be in place to provide this context.

Process based state-wide standards will allow regional flexibility but ensure CMAs implement high quality NRM practices to identify actions and investments appropriate to the particular landscape.[18] This does not prevent the development of local, innovative solutions but ensures that they are based on credible and appropriately applied information.

Standards should also reflect any requirements and priorities set out in national or state policies and legislation and ensure these are appropriately incorporated into decision making processes. For example, the minimum requirements for the protection and restoration of Ramsar wetlands[19] should be taken into account when establishing regional priorities.

The development of process-based standards is consistent with the 'national standards defining best practice management' described in the *National Framework for Natural Resource Management Standards and Targets*. It is also consistent with standards for quality systems issued by internationally recognised standard-setting bodies such as Standards Australia and the International Organisation for Standardisation.[20]

2.1.2 Developing state-wide standards that promote accountability

State-wide standards will help demonstrate transparent and effective decision making. The application of state-wide standards by CMAs will be audited, to ensure that CMAs are accountable to the community and to the Australian and NSW governments for the expenditure of public funds.

Standards also help to build confidence that decisions and investment are based on sound and consistent assessment of risk and scale impacts even when outcomes are not realised in the short term or cannot be directly measured. The effects of NRM can be masked at any specific point in time by natural variations in landscape processes and by natural events such as flood

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18 This approach is consistent with recommendations for greater flexibility within existing regulatory regimes to allow variations in requirements at a regional level in *Impacts of Native Vegetation and Biodiversity Regulations*, Productivity Commission Inquiry Report, April 2004, pp. 224.

19 Listed under the Convention on Wetlands (Ramsar, Iran, 1971). See <http://www.ramsar.org>.

20 Standards Australia and Standards New Zealand, Australian/New Zealand Standard: Environmental management systems – Specification with guidance for use, November 1996.

or fire. In addition, the effect of an activity may not be fully realised for many years. For example, revegetating recharge zones contributing to dryland salinity may not have a measurable impact in some landscapes for 50 years. Investors in these activities need some assurance that there is a sound basis for the decisions that are made to allocate funds to various actions. State-wide standards will provide this assurance.

State-wide standards complement the role of state-wide targets which define expected outputs and outcomes. They help to address some of the limitations of relying on state-wide targets alone to assess outcomes. These include the difficulties of assessing the value of different contributions to achieving state-wide targets when management actions impact variably across time, space and multiple assets — environmental, social, economic and cultural.

2.1.3 Implementing adaptive management

The application of state-wide standards will underpin the implementation of adaptive management by natural resource managers across NSW. Adaptive management recognises that human understanding of nature is imperfect. It treats management policies and actions as experiments in order to improve management by learning from the ecosystems affected. Adaptive management links credible science, values and experience of stakeholders and managers for decision making. The proposed standards will require that decisions are made based on best available information, that results are monitored, that programs and outcomes are evaluated and that lessons learned are fed into the next cycle of planning and prioritisation.

Despite widespread recognition of the importance of adaptive management in NRM in driving continuous improvement, it is acknowledged that there are few instances where this has been realised. The proposed matters for standards contribute to the adaptive management cycle. This should help the NRC, CMAs and others to learn from past activities. The audit process will be a critical part of the learning cycle and will be an opportunity to assess the effectiveness and potential for improvement of the standards and targets themselves.

2.2 Proposed matters for state-wide standards

The NRC presented preliminary matters to be addressed by state-wide standards in the Framework Paper released in October. These initial concepts have been further developed with input provided by CMAs and government agency representatives during workshops and the pilot process.

Discussions have involved analysis of the processes used in catchment-scale NRM and the identification of activities for which there would be value in developing state-wide standards. The NRC does not intend to develop standards where there is neither added value nor a need for state-wide consistency. For example, given the depth of experience and knowledge of communities that exists within CMAs, the NRC believes there is limited value in developing a standard for best practice consultation.

Some CMAs may consider some of the proposed matters for standards are unnecessary since they already apply similar processes. However, consultation to date demonstrates a need for a consistent suite of processes which can be applied by all. Individual CMAs have particular strengths and will find the application of particular standards relatively straightforward. Their

experience is valuable and can provide opportunities for others to learn and develop their capacity to apply a standard. In the same way there are likely to be some matters where they will benefit from the experience of others.

The processes for which state-wide standards are proposed are:

1. Investment planning and prioritisation
2. Coordination
3. Socio-economic assessment
4. Information management
5. Monitoring and evaluation.

The objectives of state-wide standards for each of these processes are outlined in Table 2.1. These have been selected because:

- there is some variation across CMAs in how these processes are conducted and a consistent state-wide approach would enhance the efficiency and effectiveness of investment in NRM at the state level
- implementation of the process to a minimum level of quality is important for accountability for the expenditure of public funds and delivery of NRM outcomes
- a need for a state-wide standard for a particular process was highlighted at a number of workshops and in the pilot process, suggesting that natural resource managers in different regions experience similar challenges (the needs for state-wide standards and related issues raised at the workshops with CMAs are summarised in Table 2.2).

Table 2.1 Draft matters for state-wide standards and their objectives

Draft matters for state-wide standards	Objective
Investment planning and prioritisation	To ensure transparent and increasingly informed investment decisions which contribute to the environmental, social and economic health of NSW
Coordination	To reinforce partnerships and guide CMAs in coordinating activities to achieve outcomes at the state scale
Socio-economic assessment	To ensure adequate consideration of socio-economics in CMA decision making
Information management	To encourage the development and maintenance of coherent, accessible and relevant state scale information and datasets
Monitoring and evaluation	To ensure chosen indicators and data collection protocols permit state scale evaluation and development of datasets

The possible need for a state-wide standard for implementation (of CAPs) was raised, but rejected, in each of the workshops with discussion concluding that best practice for implementation is region-specific. This does not exclude collaboration across institutional boundaries in developing best practice for NRM action where regional conditions and NRM problems are similar.

The NRC recognises that additional state-wide standards may be required in the future. Any such requirement will be highlighted as the standards and the early experience of their use are reviewed.

Table 2.2 Summary of stakeholder suggestions of matters for state-wide standards

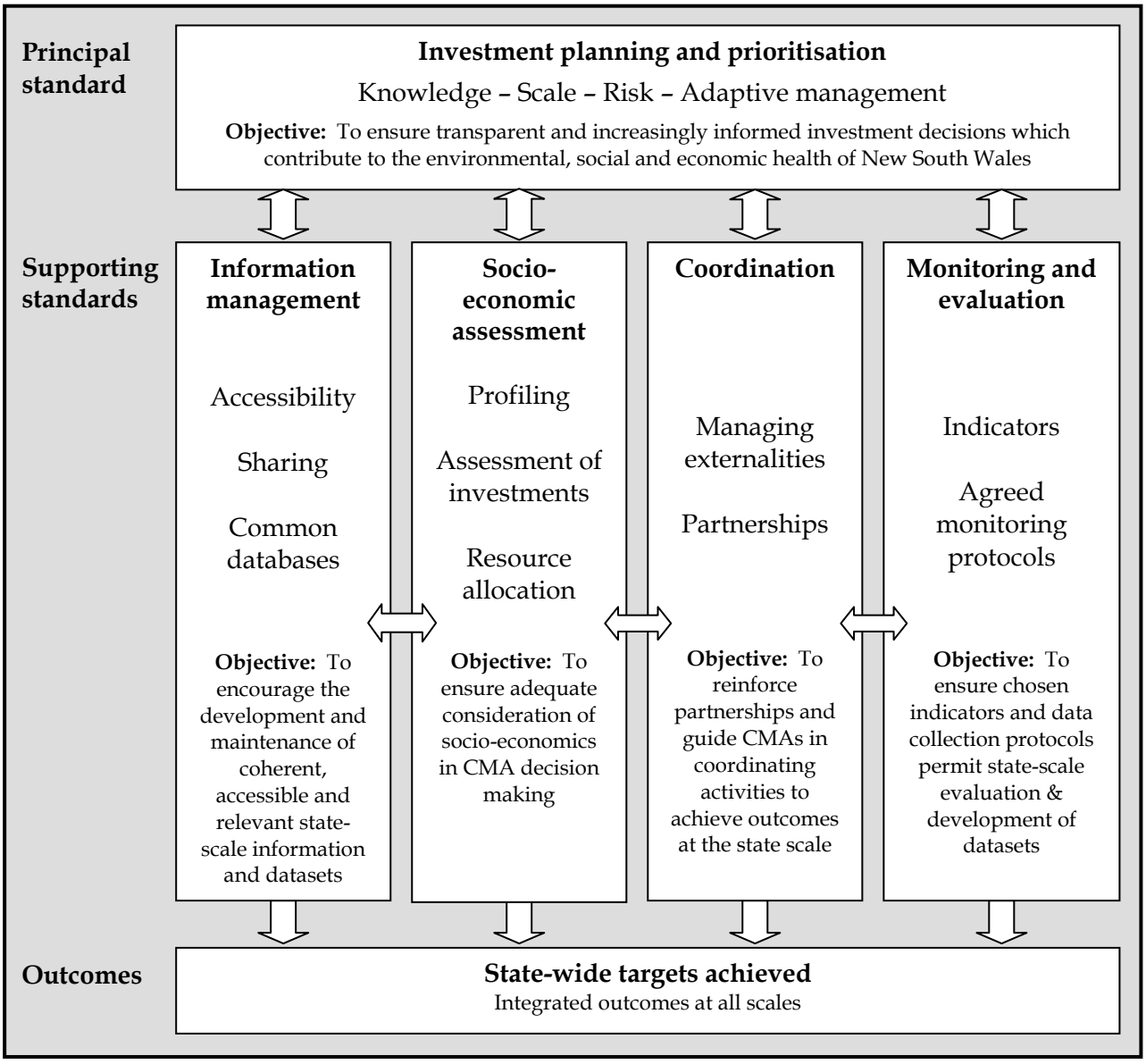
Stakeholder suggestions	Proposed matters for state-wide standards
▪ Provide a risk management protocol for assessing projects ▪ Encourage actions that achieve multiple benefits ▪ Require planning decisions to be supported by science where possible ▪ Encourage actions that provide the greatest return for investment in natural resources ▪ Encourage innovative investment appropriate to each catchment ▪ Build on previous work and ensure existing information is considered	**Investment planning and prioritisation**
▪ Improve cross-CMA communication ▪ Consider the goals and priorities of other CMAs ▪ Expect extensive communication between CMAs ▪ Encourage peer reviews between CMAs ▪ Foster cooperative, not competitive, interactions between CMAs ▪ Require that CMAs demonstrate consultation with other CMAs	**Coordination**
▪ Acknowledge economic and social constraints to NRM ▪ Promote equity within the community ▪ Incorporate community and local knowledge	**Socio-economic Assessment**
▪ Develop processes for gathering and sharing information ▪ Make data accessible ▪ Provide a centralised data repository ▪ Document data reliability and quality ▪ Build on previous work and consider existing information ▪ Apply data and information appropriately	**Information management**
▪ Provide a measure of the effectiveness of incentive programs ▪ Consider the purpose of monitoring ▪ Consider where, why and how data will be used ▪ Build on existing standards that provide techniques for sampling and data analysis ▪ Link activities and outcomes at a variety of scales ▪ Assess the effectiveness of investment ▪ Require monitoring to report on outcomes ▪ Provide a basis through which CMAs can negotiate monitoring agreements with agencies	**Monitoring and evaluation**

2.3 Proposed structure of state-wide standards

The proposed structure of state-wide standards comprises a family of five interrelated processes subject to standards, one for each of: 'Investment planning and prioritisation'; 'Coordination'; 'Socio-economic assessment'; 'Information management'; and 'Monitoring and evaluation'.

As with all aspects of NRM, there are inter-dependencies between the five proposed standards and the processes described, and there is no necessary linear progression through various steps. For example, the requirement to apply the socio-economic standard may be indicated at various points in the standards for the planning and prioritisation process. The relationship between each of the proposed standards and between the state-wide standards and targets is outlined in Figure 2.1.

Figure 2.1 Relationship between processes for state-wide standards and state-wide targets



Each standard will identify logical, discrete elements that communicate management expectations. Each identified element should contribute to the achievement of specific goals. For example, one of the elements of the 'Investment planning and prioritisation' standard is risk management which indicates the expected processes for consistent identification and management of risk and how this should be incorporated into the planning and prioritisation process.

A process to achieve the goal will be described according to the following logic:

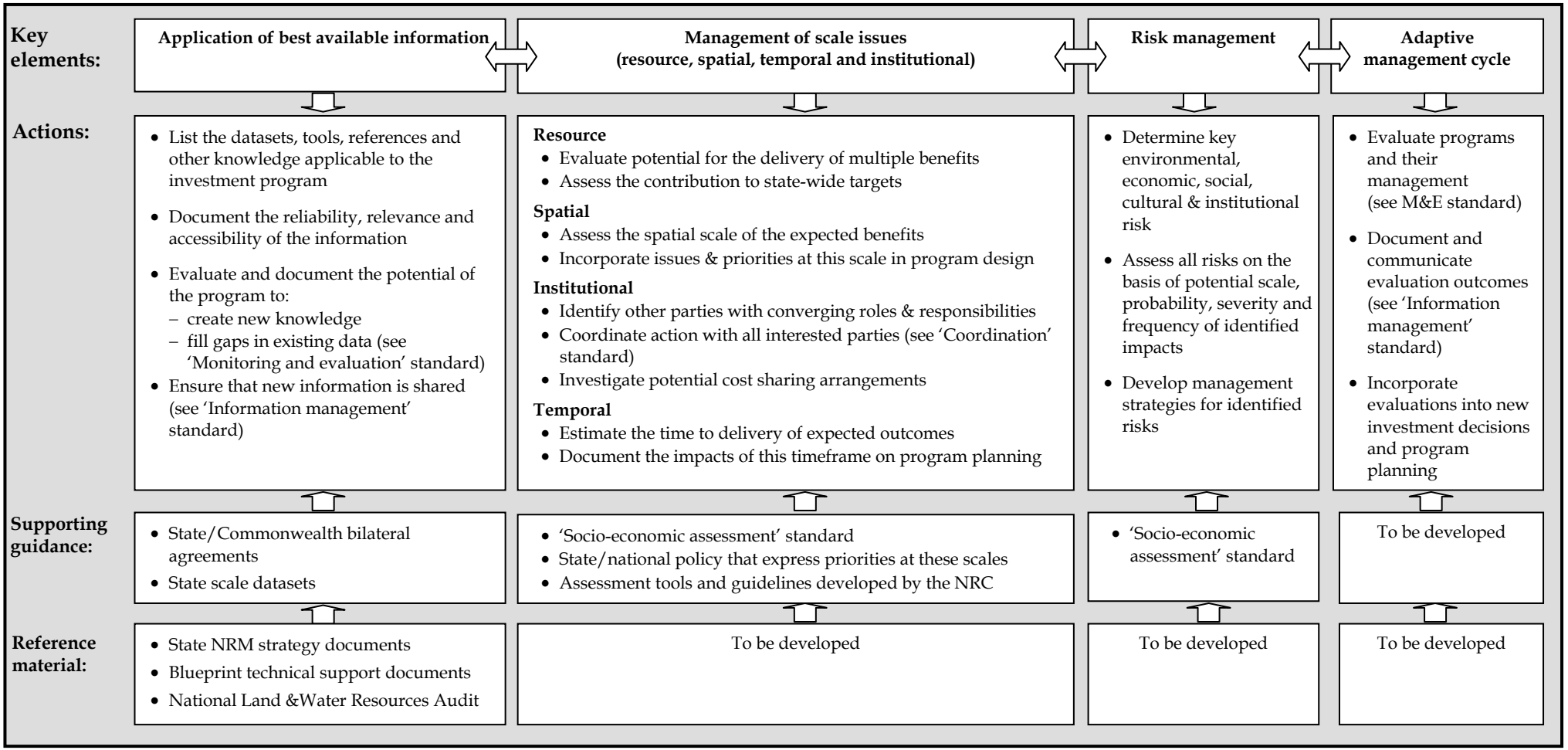
- **Actions** - This section will prescribe specific requirements that must be demonstrated as being achieved.
- **Supporting guidance -** This section will clarify the underlying principles of the actions and provide guidance on their context and links to other state and national strategies.
- **Reference material -** This section will provide additional assistance and guidance. Typically it will provide information and links to other information sources such as websites, publications and personnel within government and elsewhere that may help CMAs to achieve compliance with the standard.

The proposed components of state-wide standards for 'Investment planning and prioritisation', 'Coordination' and 'Socio-economic assessment' are outlined in sections 2.3.1, 2.3.2 and 2.3.3 and are based on the structure described above.

The components of state-wide standards for 'Monitoring and evaluation' and 'Information management' have not yet been developed. These standards will require substantial technical input from state agencies and the broader scientific and NRM communities prior to recommendations to the NSW Government in April 2005.

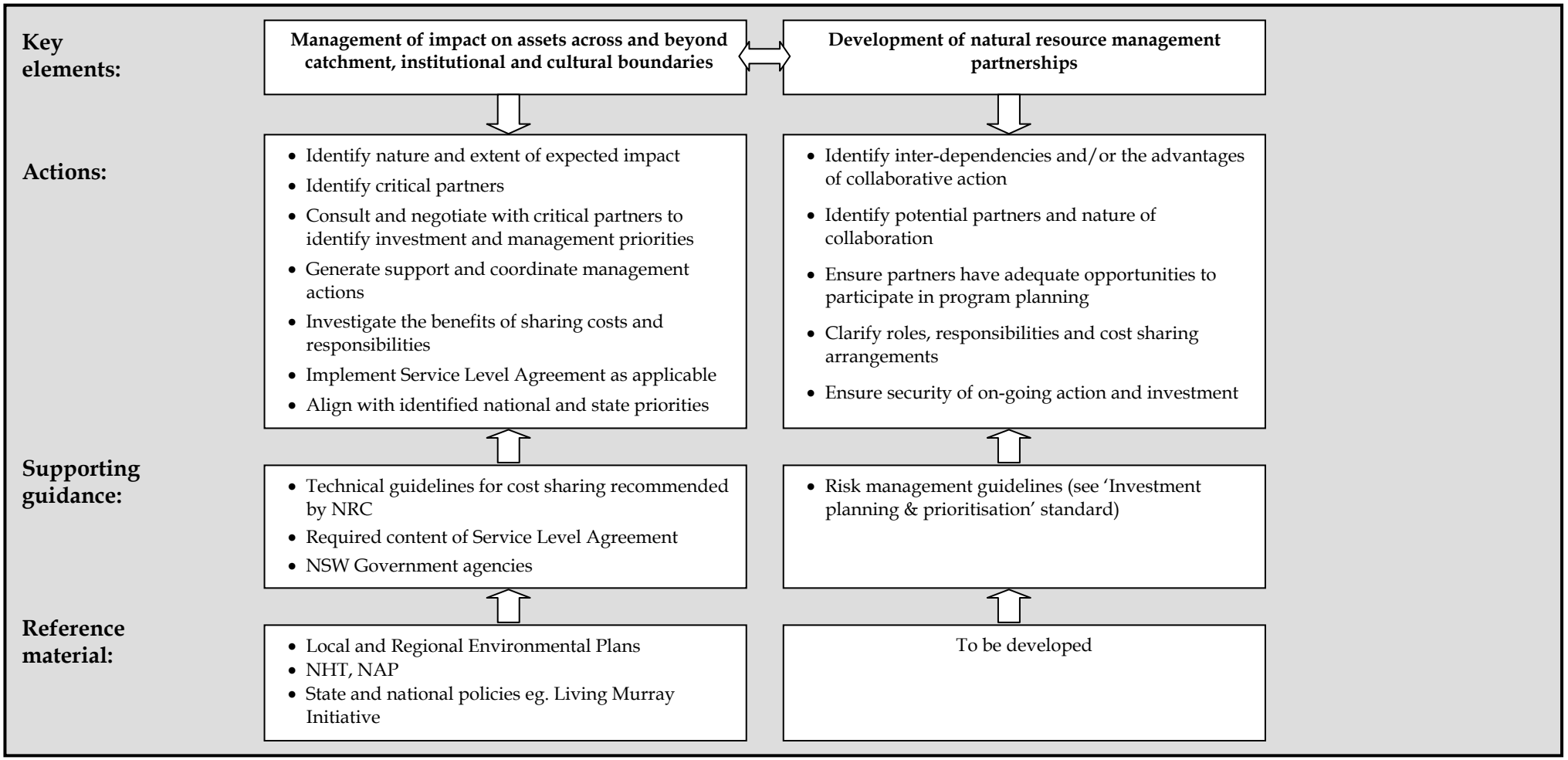
2.3.1 Components of a state-wide standard for 'Investment planning and prioritisation'

The aim of this standard is to ensure that the principles applied to prioritisation of investments are consistent and comparable across NSW. It will also facilitate use of the best available information in decision making and the adequate identification and management of risks. This standard will also assist in making investment in NRM efficient and effective by ensuring that decisions appropriately consider and balance the benefits of action across resources; spatial, temporal and institutional scales; and environmental, economic and social outcomes.



2.3.2 Components of a state-wide standard for 'Coordination'

Coordination between CMAs and other partners is critical in delivering NRM that is integrated across physical and institutional scales. This standard is intended to guide the appropriate level of coordination across NRM activities to achieve outcomes that support state-wide objectives.



2.3.3 Components of a state-wide standard for 'Socio-economic assessment'

The aim of this standard is to ensure that adequate consideration of socio-economics in the CMA decision making processes maximises effectiveness of actions and enhances transparency.

Key elements:	Understanding the socio-economic characteristics of the catchment	Socio-economic assessment of major investments and programs to improve effectiveness	Socio-economic consideration of the impacts of major natural resource allocation decisions
Actions:	• Develop a socio-economic profile of the catchment and its key constituents • List key socio-economic data sets and resources • Monitor socio-economic considerations and elements ('Monitoring and evaluation' standard)	• Document potential costs and benefits • Document potential impacts on stakeholders • Conduct preliminary assessment • Collect and analyse appropriate data to assess program design and effectiveness over time ('Monitoring and evaluation' standard)	• Develop socio-economic profile for impacted stakeholder groups • Document and assess initial evaluation of impacts against technical guidelines to gauge significance • Conduct further detailed socio-economic study if warranted • Record accounting for the information in decision making process • Collect appropriate data to monitor the impacts on stakeholders ('Monitoring and evaluation' standard)
Supporting guidance:	• NRC advice on socio-economic information used in the Blueprints and CAPs • 'Monitoring and evaluation' standard	• Technical guidelines developed by the NRC • Assessment tools and reporting guidelines developed by the NRC • Case studies prepared as part of pilot process • 'Monitoring and evaluation' standard	• Technical guidelines and tests of significance developed by the NRC • Technical Guidelines IACSEA • Previous assessments made on water sharing plans • 'Monitoring and evaluation' standard
Reference material:	• Valley profiles developed by DLWC (DIPNR) • Catchment Blueprints • ABS data • ABARE farm surveys reports and database www.agsurf.abareconomics.com • DPI farm level models • Various individual studies	• NSW Treasury Office of Financial Management (1997) Guidelines for Economic Appraisal • DIPNR and DPI economic units • NRC discussion paper: *The Role of Socio-economic Analysis in Catchment Management* • Consultants	• Previous studies on Regional Vegetation Management Plans and Water Sharing Plans • DIPNR and DPI economic units • Consultants

2.4 Responsibilities for applying state-wide standards

State-wide standards will be adopted by the NSW Government and will be relevant at a range of institutional scales. The development of state-wide standards to date has been primarily focused on the planning and investment functions of CMAs and the processes that need to be in place for them to fulfil these functions effectively. However, in many cases, CMAs will depend on other organisations also applying the standards if they are to work effectively. For example, state agencies will need to adopt the 'Monitoring and evaluation' standard to provide an effective platform for state-wide monitoring and evaluation that CMAs can contribute to. CMAs will also rely on cooperative relationships with other stakeholders to apply the 'Coordination' standard.

The NRC will recommend whether CAPs be approved based on their consistency with state-wide standards (and targets). It will also audit implementation of the CAP and its effectiveness in complying with state-wide standards (and promoting state-wide targets). The audit process will be focused on the CAP and all those contributing to its implementation rather than CMAs alone. However, CMAs have a central role in the process.

The NRC has begun work on developing an audit framework. This framework will help to clarify expectations and responsibilities for complying with state-wide standards. It is anticipated that CMAs will move to incorporate state-wide standards (when adopted by the NSW Government) into their internal business management and compliance reporting systems. Ideally, this will mean that auditing and reporting on compliance with state-wide standards should be a relatively streamlined part of CMAs' own internal quality assurance and management processes.

3 Draft state-wide targets

The Australian and NSW governments are primary investors in NRM. Responsibility for a significant proportion of this investment has been devolved to regional bodies. Adopting state-wide targets, against which natural resource outcomes are assessed, is a means of ensuring that this investment achieves desired natural resource outcomes.

The principle expressed in the draft targets presented in this paper is that, on average, the condition and functionality of NSW's natural resources should at least be maintained and, where appropriate and possible, improved. The trade-offs that might be needed to achieve the 'average' result under this scenario would occur both at a regional level through the prioritisation processes of CMAs and through the development of state policies that specifically address such trade-offs. Whether targets should express more explicit state priorities is discussed in more detail in section 3.1.5.

This chapter explains the format and expression of the draft state-wide targets, describes and lists the draft targets themselves and discusses the implications for state agencies, CMAs and other stakeholders for achieving the targets. These draft state-wide targets will be a starting point for further development and broader consultation before recommendations for state-wide targets are made to the NSW Government in April 2005.

The key issues for public consultation and for further development of the draft state-wide targets are:

- whether the draft state-wide targets cover the right scope of issues
- whether there is a need to incorporate more explicit state priorities in the targets and how these should be identified
- whether the draft state-wide targets are achievable within the specified timeframes
- whether the NRC's preferred option of trend, rather than quantitative, state-wide targets is appropriate to address the diversity of landscapes across NSW
- whether the proposed indicators are appropriate and the resources and capacity needed to monitor against them are available at the state level.

3.1 Format and expression of state-wide targets

The format and expression of draft state-wide targets has been developed in response to input received through the CMA pilot process, early consultation with other stakeholders, and the existing work on targets at the national and regional levels.

As a result, there are three key elements that shape the format and expression of the draft state-wide targets. These are:

1. categorisation of targets into the three types used in the national framework—aspirational goal, resource condition targets and management action targets (section 3.1.1)
2. organisation of targets into four 'asset classes' (section 3.1.2)

3. use of 'maintain' or 'improve' as target trends rather than quantification of target levels (section 3.1.3).

In addition, indicators that could be used to assess progress against the targets are proposed. These need to be further developed and carefully considered in the context of all monitoring and evaluation requirements at regional, state and national levels and with regard to the resources needed to establish and maintain the supporting information systems. These issues are discussed in section 3.1.4.

Section 3.1.5 discusses some alternatives for more explicitly expressing state priorities within targets. This issue needs to be further explored through the public consultation process.

3.1.1 Definitions and categories of state-wide targets

State-wide targets describe natural resource outcomes that the state wants to achieve. A state-wide target could describe the desired functioning or condition of a part of the natural system or the desired result of a specific management activity.

The NRC is proposing to adopt the three categories of targets used in the national framework to ensure that consistent language and concepts are used at national and state scales. These categories are:

1. aspirational goals — agreed long-term (50+ years) statements that describe natural resource assets in terms of the desirable functions that they serve
2. resource condition targets — measurable descriptions of the desired condition of natural resource assets in 10 to 20 years time
3. management action targets — short-term (1-5 year) actions or programs usually focused on a specific pressure or opportunity.

The draft set of targets includes one aspirational goal.[21] This is a high level statement that describes the desirable long-term functioning of landscapes across NSW to support environmental, social, cultural and economic values.

Resource condition targets describe medium-term natural resource outcomes. These are outcomes that need to be achieved to move towards the aspirational goal. The resource condition targets are time-bound and measurable. Progress towards them can be assessed by monitoring and evaluating progress using a set of indicators.

At a state-wide level, management action targets can be used to ensure the implementation of actions needed state-wide to support achievement of the resource condition targets. These particularly relate to policy development, research and monitoring and evaluation. State agencies are generally best placed to develop and achieve state-wide management actions. Draft state management action targets have not yet been developed. These are discussed in more detail in section 3.3.1.

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21 The aspirational goal is adapted from a definition of healthy tropical savannas in Whitehead, P.J., Woinarski, J., Jacklyn, P., Fell, D. and Williams, D., *Defining and measuring the health of savanna landscapes: A north Australian perspective – Discussion Paper*, 2000. Tropical Savannas CRC, Charles Darwin University, Northern Territory. Available at <http://savanna.ntu.edu.au/downloads/define.pdf>.

3.1.2 Use of asset classes for resource condition targets and their fit with other frameworks

Breaking down NRM into themes or issues can help to identify the outcomes that need to be achieved in each part of the landscape to support certain functions. It can also help to ensure a balanced spread of investment and completeness in a set of targets. At the same time, it is difficult and usually not desirable to manage parts of the landscape or specific processes in isolation from the whole. Any breakdown of the themes and issues should be considered as a practical but limited tool that can be helpful for management. Most on-ground actions are not confined to any one theme or issue and usually result in outcomes across several of them.

Many variations of this type of breakdown exist. For example, ten 'matters for target' have been identified in the *National Framework for Natural Resource Management Standards and Targets*. The Natural Resources Commission Act identifies eight matters relating to the management of natural resources. The 21 Blueprints use smaller sets of matters but these vary from Blueprint to Blueprint. State of the Environment (SoE) reporting uses yet another set. The NRC has considered all of these and is proposing a set of four natural resource 'assets' as the basis for grouping the draft state-wide targets. These are:

1. biodiversity
2. water
3. land
4. community.

An asset approach provides a logical basis for the split. Use of 'assets' captures the concept that our natural resources are valued and should be invested in so that they are maintained and improved. The proposed group of four is considered the minimum number necessary to achieve coverage across the range of natural resource issues. Table 3.1 shows how some other classifications and state policies fit within the biophysical asset classes of biodiversity, water and land. It also shows that some issues in other classifications do not fit neatly within one particular asset class but span them. Two State of the Environment reporting themes, atmosphere and human settlement, do not fit within the asset classes. However, these issues are considered outside the scope of the task of developing state-wide standards and targets.

Communities are not biophysical assets and do not appear in the other national and state classifications. However, communities are critical to achieving natural resource outcomes. This is highlighted in the Blueprints. In many of these, specific targets and actions were developed to focus on building understanding, providing appropriate resources and achieving certain levels of participation by communities in NRM activities.

Identifying community as an asset in its own right demonstrates its importance in effective NRM. It also helps to identify the need for investment in activities that build community capacity and ownership of natural resource issues. However, NRM targets do not extend to setting 'condition' targets for community measured in terms of unemployment rates or health indicators. These are much broader issues that relate to a whole range of factors that cannot be addressed solely through NRM.

Table 3.1 Alignment of proposed asset classes with other natural resource themes

	Biodiversity	Water	Land	Other
ANZECC themes for SoE reporting	Biodiversity	Inland waters Estuaries and sea	Land	Atmosphere Human settlements
National matters for targets	Native vegetation Significant species and communities Invasive species Aquatic ecosystems Estuarine, coastal and marine habitat	Surface water salinity Turbidity in aquatic environments Nutrients in aquatic environments	Land salinity Soil condition	
NRC Act natural resource management matters	Biodiversity Native vegetation Marine environment Coastal protection* Forestry	Water Coastal protection*	Soil Salinity Coastal protection*	
State government policies and strategies	Biodiversity strategy Wetlands policy* Rivers and estuaries policy* Coastal policy*	Wetlands policy* Rivers and estuaries policy* Weirs policy Groundwater policy Coastal policy*	Soils policy Salinity strategy Coastal policy*	

* Appears in more than one category in this table

3.1.3 Use of 'maintain' or 'improve' rather than quantitative targets

The draft state-wide targets do not attempt to quantify expected changes in resource condition (although quantitative change will be monitored using indicators). Instead they rely on the concept of either maintaining or improving a particular condition or extent. Whether or not it is desirable to have quantitative elements in state-wide targets has been considered at length and in consultation with many stakeholders.

Quantification of targets helps to define expectations and provides a clear basis for assessing achievement and progress. However, at a state scale, it is difficult to envisage meaningful quantification that can be effectively translated to regional targets. There are two main reasons for this:

1. landscapes across NSW are diverse and there are relative differences in the extent to which they have been modified
2. there is insufficient data and analysis to be able to assess the 'right' state-wide level or quantity for a target that can be achieved with available resources.

For example, a state-wide target could require that 30 per cent of the original extent of all vegetation communities be maintained and/or restored. In one part of the state, more than 90 per cent of the original extent of a community may exist. In another part there may be less than 2 per cent remaining of a different community. In other parts, the extent of communities may be unknown because of incomplete vegetation mapping.

In the first situation, the target does not recognise the value of all of the retained vegetation and could be interpreted as a clearing target. In the second, the target may be unachievable given the history of development in the area, the value of existing land use and the capacity for regeneration. In the third, the absence of data means that only best guess judgements can be made about the implications of the state-wide target and whether it is realistic. In this example, a better outcome appears more likely if quantitative targets that are meaningful in the context of local circumstances are set at the regional level.

Best available science may indicate that retaining 30 per cent of original extent of vegetation communities is an important threshold. This scientific information should be used to inform the regional decision making process through the application of state-wide standards.

The role of CMAs is to set regional, appropriately quantified targets that are consistent with state priorities and are informed by the best available, locally relevant information. At this level it is both possible and appropriate to set meaningful quantified targets, as was done in Blueprints. This approach is consistent with the model of devolved responsibility and accountability to regional authorities. If CMAs did not develop appropriate quantification at the regional level, state-wide targets may then have to fulfil this need.

CMAs are also in a position to determine realistic targets that can be achieved with available funding and through leveraging other resources. It may be ideal to restore 30 per cent of the original extent of native vegetation in a region to achieve environmental outcomes but it may be prohibitively expensive in terms of the trade-offs made, for example, reduced productive capacity. Many of the Blueprints identified natural resource outcomes that would be desirable to achieve with unlimited resources. Costing of some of these Blueprints demonstrated that the needed resources are orders of magnitude greater than the funding that has been committed. Any quantified target should build in realistic expectations of what can be achieved within available resources.

The draft state-wide targets are designed to identify the priorities for NRM in NSW. They set the expectation that maintaining the current state of natural resources is a minimum benchmark and that improvement is desirable where realistic.

3.1.4 Indicators for draft state-wide resource condition targets

A set of draft indicators has been developed alongside the draft state-wide resource condition targets. Indicators were selected based on the following criteria:

- **Appropriate —** indicators must be representative of state-wide resource condition targets
- **Credible —** indicators must be scientifically credible, measurable and capable of being reported at regular intervals
- **Informative —** indicators should apply to a broad range of environmental regions and show changes over an appropriate timeframe
- **Feasible —** collectively, the monitoring requirements for indicators must be reasonable given CMA budget constraints and complement and/or avoid duplication of other monitoring and evaluation requirements.

Each draft state-wide resource condition target has at least one indicator although some of the indicators have relevance to more than one target. For example, the measures for increased connectivity can also provide meaningful data for understanding trends against the resource condition targets for a reduction in risk of species, populations and communities becoming threatened.

The goal for indicators is to establish a basis for measuring overall progress at a state scale. The indicators proposed in this paper will help to focus debate and consultation. However, there are many possible alternatives for achieving this goal. The NRC is receptive to exploring alternatives and encourages stakeholders to put forward their ideas.

The effectiveness of any indicator set depends on the allocation of resources, particularly by state government agencies, to establish the necessary information systems and monitoring and evaluation capacity to support their use. Ideally state-wide indicators will align as much as possible with those used at a national level. In many cases, common parameters may also apply at a regional level so that the same data can contribute to monitoring against indicators at all scales. The NRC has begun to engage with key stakeholders at regional, state and national levels and will work closely with them over the coming months to achieve this. The costs associated with the use of these indicators need to be clearly understood before the NRC makes its recommendations to the NSW Government.

3.1.5 Identifying more explicit state-wide priorities

State priorities could be expressed in a number of ways. For example, they may be expressed through the identification of 'icon sites' that should be given special status for protection or restoration. This is the approach of the Living Murray Initiative which has identified environmental outcomes for six ecologically significant assets.

Alternatively, priorities may be expressed as explicit state-wide trade-offs. For example, particular coastal areas may be ear-marked for development to cater for urban expansion despite adverse impacts on local biodiversity. At the same time, other coastal areas might be excluded from further development so that the state retains some of the natural values of coastal areas.

These types of priorities would not govern all NRM. They should be limited to those things that are important at a state scale. Within this framework, many more decisions and specific trade-offs could be made at a regional level.

These ideas need to be further explored and the appropriateness of including these types of priorities in state-wide targets considered during the public consultation process. The NRC has not attempted to identify and include these priorities in the targets presented in this paper. It may be more appropriate that these are developed through a broader policy development process (such as the whole of government NRM policy process that is being led by DIPNR) and then applied through state-wide standards.

3.2 Draft state-wide targets

Draft state-wide targets are presented in Table 3.2. The content and coverage of the targets has been informed by consultation with CMAs and other stakeholders as well as existing state-wide policies and legislation including recent amendments to threatened species legislation and the Water Management Act.

The long-term aspirational goal is shown across the top of the table. This goal is integrated. It refers to landscapes, not individual assets, and incorporates the range of environmental, economic, social and cultural values of communities. This goal applies equally to any part of the state regardless of the particular type of landscape or land system. It recognises that natural processes operate in an integrated way to serve a number of related functions.

The state-wide resource condition targets, listed under the aspirational goal, should be regarded as a set rather than as discrete additive targets. In some cases, it has been considered appropriate to emphasise particular themes by including targets that are subsets of others. In addition, some targets overlap because of the interdependency of natural processes and systems.

For example, *no net loss of native seagrass, saltmarsh or mangroves* and *increasing the extent of native vegetation cover in riparian zones* are subsets of the target to *increase the extent and diversity of native vegetation cover*. Marine vegetation needs specific attention in coastal areas and is specified in a separate target to ensure it is appropriately recognised. Riparian zones are specified in a separate target in recognition that these zones have particular significance for biodiversity and water quality and are priority areas for increasing the extent and diversity of native vegetation. Contributions to meeting this target would also be direct contributions to the overall target to increase the extent and diversity of native vegetation.

The target to reduce the risk of species, populations or communities becoming threatened is an example of an overlapping target. Reducing this risk primarily relies on managing the pressures that contribute to species, populations and communities becoming threatened. This includes providing the appropriate extent and quality of native habitat. The targets to increase extent and diversity of native vegetation, control invasive species, increase connectivity of ecosystems, and those that relate to improving the condition of aquatic habitats will help to address key threatening processes and hence reduce the risk. This approach is consistent with recent amendments to threatened species legislation.

The resource condition targets are organised around the four asset classes of biodiversity, water, land and community. As discussed in section 3.1.2, any split into asset classes is somewhat arbitrary but necessary to help focus issues, investments and monitoring efforts. In some cases the individual draft state-wide resource condition targets could fit in more than one of the asset classes. The current groupings reflect the NRC's judgements about 'best fit'. The main concern is that the target set as a whole sufficiently covers the appropriate scope of issues regardless of whether or not the targets could be grouped in a different way.

The draft resource condition targets set a benchmark of at least maintaining, and in many cases improving, the current condition of NSW's main natural resource assets. This is challenging since for some natural resource issues it will be difficult even to slow current trends towards increased degradation. At the same time, at least maintaining the condition of natural resources is a minimum expectation in terms of moving towards the long-term aspirational goal.

Currently, most of these targets are to be achieved in a 10-year period. This period aligns with the life cycle of the first CAPs and would allow for the completion of at least two audit cycles within the period the targets are to be achieved. The feasibility of achieving these targets within these timeframes needs to be further explored in the next phase of target development and in public consultation.

Some of the targets and their related indicators are not direct measures of resource condition (or condition of the asset) but have been included because of their significance in terms of their impact on resource condition. For example, the abundance of and area affected by invasive species is not a measure of biodiversity. However, it is widely understood that limiting the extent of these species, whether native or exotic, will contribute to improved biodiversity. Similarly, the yield from aquifers is not a direct measure of the condition of groundwater systems. In contrast to surface waters, there is no widely used classification system for the assessment of the condition of groundwater systems. However, extraction from these systems is recognised as a key pressure. Appendix 1 provides a summary of the rationale for the inclusion of each of the draft state-wide resource condition targets.

Table 3.2 Draft state-wide targets and indicators

State-wide aspirational goal
Resilient ecologically sustainable landscapes functioning effectively at all scales and supporting the environmental, economic, social and cultural values of communities A resilient landscape ▪ maintains basic functions at all space scales including nutrient cycling, water capture, provision of food and shelter for fauna ▪ maintains viable populations of all native species of plants and animals at appropriate space and time scales ▪ reliably meets the long-term needs (material, aesthetic and spiritual) of people and communities who have an ongoing interest in the land.[22]

State-wide biodiversity resource condition targets	Possible indicators
By 2015 there is a net increase in extent and diversity of native vegetation cover	*Extent of native vegetation type by Interim Biogeographic Regionalisation of Australia (IBRA)[23] subregion (in hectares)*
By 2015 there is no net loss of native seagrass, saltmarsh and mangroves	*Extent of native seagrass, saltmarsh and mangroves (in hectares)*
By 2015 there is an increase in the extent and diversity of native vegetation cover of riparian zones	*Extent of riparian zones revegetated with native species (in hectares)*
By 2015 there is a net increase in connectivity across terrestrial and aquatic ecosystems	*Length of streams free of constructed impediments to native fish passage (in kilometres)* *Fragmentation index for priority habitats (to be developed)*
By 2015 there is reduced risk of species, populations and ecological communities becoming threatened	*Extent and status of priority native species and ecological communities*
By 2015 there is a net reduction in the abundance of and area affected by invasive species and no new invasive species have become established	*Change in extent/number of pressures threatening native species and ecological communities* *Reduced impact of invasive species (measured by number and extent of invasive species)* *No instances of new invasive species becoming established*

22 The aspirational goal is adapted from a definition of healthy tropical savannas in Whitehead, P.J., Woinarski, J., Jacklyn, P., Fell, D. and Williams, D., *Defining and measuring the health of savanna landscapes: A north Australian perspective – Discussion Paper*, 2000. Tropical Savannas CRC, Charles Darwin University, Northern Territory. Available at <http://savanna.ntu.edu.au/downloads/define.pdf>.

23 Environment Australia, *Revision of the Interim Biogeographic Regionalisation for Australia (IBRA) and Development of Version 5.1 - Summary Report*, November 2000. Available at <http://www.deh.gov.au/parks/nrs/ibra/version5-1/summary-report/index.html>.

State-wide water resource condition targets	Possible indicators
By 2015 there is a net improvement in the condition of rivers and wetlands as assessed against the Stressed Rivers Classification and the Water Quality and River Flow Objectives (WQO and RFO) for NSW	*Change in Stressed Rivers Classification* *Number of rivers meeting WQO for protection of aquatic ecosystems* *Number of rivers meeting RFO for maintaining wetland and floodplain inundation*
By 2015 there is a net improvement in the condition of estuaries as assessed against the National Land and Water Resources Audit (NLWRA) classification of estuaries	*Number of estuaries with a change in NLWRA audit classification*
By 2015 extractions from aquifers are within identified sustainable yields	*Extraction to sustainable yield ratio*
By 2015 the condition of all coastal lakes is maintained and those classified as 'Targeted Repair', according to the former Healthy Rivers Commission's classification, are improved	To be determined based on aims of the sustainability assessment and strategies being developed
By 2015 there is a net improvement in the condition of marine waters as assessed against the Marine Water Quality Objectives for NSW Coastal Waters[24]	*Area of coastal waters meeting Marine WQO for protection of aquatic ecosystems and primary/secondary recreation contact*
State-wide land resource condition targets	**Possible indicators**
By 2015 there is a net reduction in productive capacity lost due to salinity; acidity; erosion; acid sulphate soils; invasive species	*Change in groundcover for non-urban land use areas (in hectares)* *Change in extent of deep-rooted perennial pastures (native or non-native) (in hectares)* *Change in productive capacity lost to salinity, acidity, erosion, acid sulphate soils and invasive species (in hectares)*
By 2015 all critical recharge zones are vegetated with deep-rooted perennial vegetation	*Area of critical recharge zones (hectares) and proportion vegetated*
State-wide community targets	**Possible indicators**
By 2010 information systems and training programs are in place that meet CMAs' identified needs to deliver better NRM outcomes	*Percentage of land managers and community interest groups that have access to state-wide information and training, together with local technical support and facilitation to support their NRM programs.*
By 2010 communication networks and other strategies are established that lead to strong community commitment to better NRM outcomes	*Percentage of major stakeholders' plans which incorporate CAP priorities*

24 NSW Environment Protection Authority, *Proposed marine water quality objectives for NSW coastal waters*, 2002. Available at <http://www.epa.nsw.gov.au/water/mwqo/index.htm>.

3.3 Responsibilities for achieving state-wide targets

The achievement of state-wide targets relies on the cooperative effort of all natural resource managers including state government agencies, CMAs, local government, local interest groups and most importantly land managers. Links to planning reforms are also critical to achieving state-wide targets. DIPNR's role as the lead NRM agency will be important in leading and coordinating this effort. Other state agencies will also have responsibility for state-wide supporting and coordination functions including the establishment and maintenance of monitoring and evaluation systems and state-wide strategies for achieving the targets.

CMAs are responsible for the development of regional plans (CAPs), in consultation with their communities, that promote the state-wide targets and for facilitating the implementation of those plans. Other natural resource managers need to be engaged in the planning process and participate in the coordinated implementation of on-ground activities that contribute to achieving regional and state-wide targets.

The following sections briefly outline these responsibilities and the contributions each of these groups can make.

3.3.1 State government agencies and the development of state management action targets

State government agencies have a critical role in the achievement of state-wide targets for natural resources. DIPNR, as the lead agency, has the primary role. However, achievement of the targets will also require actions by other state agencies, including the Department of Environment and Conservation (DEC) and the Department of Primary Industries (DPI), that ensure:

1. information and data collection systems are in place that support measurement and evaluation against the proposed indicators and that allow appropriate aggregation to state level
2. the classification systems referenced in the targets are appropriately maintained and improved so that they are relevant and useful across the state
3. state-wide policies, strategies and guidance on best practice that will help to achieve the resource condition targets are available.

Specific requirements against the targets and indicators could be expressed as state management action targets. For example, a management action target may require that the Stressed Rivers Classification and Water Quality and River Flow Objectives are developed into a single, classification system that builds on the strengths of each to provide an overall picture of river health.

These management action targets need to be developed in response to the state-wide resource condition targets and be focused on enabling their achievement. DIPNR is leading the development of a whole of government natural resources policy. This policy could identify the key actions that need to be implemented at a state level to achieve state-wide targets and set out how state agencies will invest in these. This would become the basis for state management action targets.

3.3.2 Catchment management authorities

CMAs in consultation with their communities are required to develop CAPs that are consistent with and promote the achievement of state-wide targets. This will involve the development of quantified, regionally specific targets that contribute to the achievement of the state-wide targets. Importantly, it is not expected that all CMAs will contribute to all targets. For example, Western CMA is unlikely to contribute to the state-wide target to increase the extent of native vegetation since it already has around 95 per cent native vegetation cover. In addition, specific regional priorities may not be adequately addressed in the set of state-wide targets but may still be appropriately included in regional targets.

Planning and prioritisation processes based on the implementation of state-wide standards will help each CMA to develop the most appropriate set of targets for its circumstances. Draft CAPs will be reviewed by the NRC to determine whether they promote state-wide targets before they are approved by the Minister.

CMAs have a central role in facilitating the implementation of CAPs but ultimately effective implementation will depend on the cooperative efforts of many stakeholders. Both implementation of the CAP and the effectiveness of the implementation in contributing to achieving state-wide standards and targets will be audited. The audit process will necessarily identify the collective effort, taking into account the roles and responsibilities of a range of stakeholders, rather than CMAs in isolation.

3.3.3 Other natural resource managers

State-wide and regional targets help to coordinate the effort of all natural resource managers in a region. Local government, Landcare groups and individual land managers all invest substantial effort and money in NRM. Alignment of this investment will help to achieve both regional and state-wide targets.

These stakeholders need to be engaged in both the development and achievement of targets in CAPs. Other plans, such as Local Environment Plans developed by local government will be relevant. In order to achieve state-wide targets, NRM and planning systems need to be aligned.

Appendix 1 Rationale for each resource condition target

Resource condition target	Rationale
By 2015 there is a net increase in extent and diversity of native vegetation cover	The decline in extent and diversity of native vegetation in NSW is widely recognised as a major threat to biodiversity and the functional integrity of terrestrial ecosystems. The extent of native vegetation cover can be used as a surrogate indicator for the state of terrestrial ecosystem diversity.[25] Reducing the extent of native vegetation is also linked to land degradation, water quality and the decline in aquatic ecosystem health. This target recognises the importance of the extent and diversity of native vegetation in maintaining resilient and functional ecosystems in the landscape.
By 2015 there is no net loss of native seagrass, saltmarsh and mangroves	This is a subset of the target to increase the extent and diversity of native vegetation cover, both aquatic and terrestrial. The introduction of exotic species, largely seaweeds, has impacted the extent of native seagrasses in NSW. NSW saltmarshes have decreased substantially in area and are now listed as an endangered ecological community. The natural extent of mangrove communities in NSW is under threat from increased urbanisation in the coastal zone. This target is included to ensure that marine vegetation is appropriately recognised in needing specific attention in coastal areas.
By 2015 there is an increase in the extent and diversity of native vegetation cover of riparian zones	The decline in extent and diversity of native vegetation has also occurred in riparian zones on many NSW waterways. Riparian zones are usually areas of high biodiversity. Riparian vegetation is important for maintaining water quality, the integrity of aquatic habitats and providing corridors for the movement of fauna. This target recognises the importance of vegetation in the riparian zone and ensures they are given priority within the overall native vegetation target.
By 2015 there is a net increase in connectivity across terrestrial and aquatic ecosystems	Native vegetation clearing has caused fragmentation in the landscape which has contributed to the decline of diversity in NSW flora and fauna. This target is included to ensure that a key threat (fragmentation of habitat) to maintaining biodiversity is reduced. It includes both terrestrial and aquatic ecosystems.

[25] Maganov,P., Carll, J., Grimes, S., Lewis A., Ryan J., Whiteside, R., *New South Wales State of the Environment*, 2003. Department of Environment and Conservation, Sydney. Available at <http://www.environment.nsw.gov.au/soe/soe2003/>.

Resource condition target	Rationale
By 2015 there is reduced risk of species, populations and ecological communities becoming threatened	Consistent with proposed reforms to the threatened species legislation, this target recognises the difficulties in attempting to protect individual species, populations or communities in isolation. Reducing pressures, for example, by increasing the extent and quality of native vegetation will maintain and improve habitat and contribute to reducing the risk of species, populations and ecological communities becoming threatened.
By 2015 there is a net reduction in the abundance of and area affected by invasive species and no new invasive species have become established	Invasive species are a key threat to biodiversity and agriculture systems. In most cases, the abundance and extent of introduced invasive species in NSW has not reduced.[26] Native invasive species can also impact biodiversity, particularly native flora, for example Pittosporum (*Pittosporum undulatum)* and Galvanized burr (*Sclerolaena birchii)*.[27] The target aims to ensure existing problems are halted and reduced and new problems are avoided.
By 2015 there is a net improvement in the condition of rivers and wetlands as assessed against the Stressed Rivers Classification and the Water Quality and River Flow Objectives (WQO and RFO) for NSW	Many NSW rivers and wetlands are degraded, in terms of condition and water quality.[28] The Stressed Rivers Classification offers a consistent and transparent rationale for management of all NSW rivers that allows for different priorities in each catchment.[29] Under the *Water Management Act 2000,* the State Water Management Outcomes Plan was established. This provides clear direction for water management in NSW and seeks to ensure the interim WQO and RFO are addressed in NRM. This target recognises the intention and desired outcomes of the State Water Management Outcomes Plan and management rationale behind the Stressed Rivers Classification.
By 2015 there is a net improvement in the condition of estuaries as assessed against the National Land and Water Resources Audit (NLWRA) classification of estuaries	Many NSW estuaries are considered modified to some degree[30] based on pressure and condition under the NLWRA estuary classification system. Only a few estuaries remain classified as 'near pristine'. This target recognises the extensive assessment already undertaken by the NLWRA and other key agencies. The classification system offers a transparent rationale for the management of all NSW estuaries.

26 Ibid.

27 Association of Societies for Growing Australian Plants, *Australian weed species* listed at 'Plants out of place', <http://farrer.riv.csu.edu.au/ASGAP/weeds.html#species>.

28 See note 25.

29 Department of Land and Conservation, *Stressed Rivers Assessment Report – NSW State Summary*, 1998. NSW Department of Land and Conservation, Sydney.

30 National Land and Water Resources Audit, *Australian Catchment, River and Estuary Assessment 2002, Volume 1*, 2002. National Land and Water Resources Audit, Canberra.

Resource condition target	Rationale
By 2015 extractions from aquifers are within identified sustainable yields	Relatively little is known about the structure of many aquifers and the interactions between surface and ground water. Presently, there is no classification system for aquifer condition. However, it is acknowledged that water from inland and coastal aquifers is currently, or under threat of being, over-extracted.[31] This has implications for the integrity of aquifers and the quality of groundwater. This target recognises the current and potential threat to aquifers by over extracting groundwater.
By 2015 the condition of all coastal lakes is maintained and those classified as 'Targeted Repair', according to the former Healthy Rivers Commission's classification, are improved	Many NSW coastal lakes are highly degraded, with only one remaining in a truly pristine condition.[32] Sustainability Assessments and Management Strategies are currently being prepared on a number of select priority coastal lakes as part of the NSW *Coastal Lakes Strategy,* a recommendation made by the NSW Healthy Rivers Commission[33] and endorsed by the NSW Government.[34] The *Coastal Lakes Strategy* classifies 91 coastal lakes into four management categories. The condition of the lakes is reflected in these categories. This target recognises the Healthy Rivers Commission's recommendations, the endorsement of the *Coastal Lakes Strategy* by the NSW Government and the assessments currently undertaken by NSW state agencies.
By 2015 there is a net improvement in the condition of marine waters as assessed against the Marine Water Quality Objectives for NSW Coastal Waters[35]	Marine water quality, in relation to recreation, has greatly improved in some areas of NSW. However, information currently available suggests that estuarine water quality may be deteriorating in other areas. Diffuse and point-source pollution continues to impact some marine waters in NSW. Marine Water Quality Objectives for NSW coastal waters have been proposed and are under consideration by DEC. This target recognises the objectives and desired outcomes of the proposed Marine Water Quality Objectives for NSW coastal waters.

31 See note 25.

32 Healthy Rivers Commission, *Coastal Lakes: Independent Inquiry into Coastal Lakes*, 2002. Healthy Rivers Commission of NSW, Sydney. Available at <http://www.hrc.nsw.gov.au/site/pubs_frame.html>.

33 Ibid.

34 NSW Government, *Statement of Intent for the Coastal Lakes of New South Wales*, February 2003. NSW Government, Sydney. Available at <http://www.hrc.nsw.gov.au/site/pubs_frame.html>.

35 NSW Environment Protection Authority, *Proposed marine water quality objectives for NSW coastal waters*, 2002. Available at <http://www.epa.nsw.gov.au/water/mwqo/index.htm>.

Resource condition target	Rationale
By 2015 there is a net reduction in productive capacity lost due to salinity; acidity; erosion; acid sulphate soils; invasive species	Agriculture is the dominant land use system in NSW[36] and in some cases the productive capacity of the landscape has doubled.[37] It generates state and regional wealth and underpins our socio-economic frameworks. Land degradation is a key factor in diminishing the productive capacity of soil in NSW, largely caused by inappropriate land management. This target reflects the importance of agriculture to our socio-economic well being. It also recognises that managing land degradation minimises off-site impacts and may reduce pressure on further land clearing.
By 2015 all critical recharge zones are vegetated with deep-rooted perennial vegetation	The areas affected by dryland salinity and rising watertables in NSW are increasing largely due to clearing of deep-rooted perennial native vegetation.[38] This has often been replaced by shallow-rooted annual crops and pastures. 'Critical' recharge zones could be those defined as 'hot spots' in the NSW Salinity Strategy.[39] This target recognises the widely accepted management practice of reducing the level of groundwater with deep-rooted perennial vegetation in recharge zones and thereby (depending on hydrological system) reducing salinity discharge in other areas.
By 2010 information systems and training programs are in place that meet CMAs' identified needs to deliver better NRM outcomes	Community participation in NRM programs is critical to achieving widespread improvements in natural resource condition. Access to information and training is essential for developing additional capacity to deliver better NRM outcomes.
By 2010 communication networks and other strategies are established that lead to strong community commitment to better NRM outcomes	Effective communication networks and strategies at state, regional and local levels are essential for fostering cooperative endeavour and aligning effort to achieve coordinated outcomes.

36 See note 25.

37 National Land and Water Resources Audit, *Australian Agriculture Assessment 2001, Volume 1*, 2001. National Land and Water Resources Audit, Canberra.

38 See note 25.

39 New South Wales Government, *NSW Salinity Strategy, Premiers Annual Report 2002/03*, 2003. NSW Government. Available at <http://pandora.nla.gov.au/tep/45531>.