



Revising the Standard and  
state-wide targets for natural  
resource management in NSW

Recommendations  
May 2012





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## List of acronyms

CMA	Catchment Management Authority
MER	Monitoring, evaluation and reporting
NRC	Natural Resources Commission
NSW	New South Wales
SOG	Natural Resource Management Senior Officers Group

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# 1 Introduction

NSW's regional communities and economies depend on the health and resilience of our landscapes. Effective natural resource management across both public and private land is essential for ensuring sustainable regional growth and community well-being. How NSW's natural resources are managed today will ultimately determine the options available for current and future generations.

NSW has a strong model and supporting framework for natural resource management that is well accepted by communities and other stakeholders, and is delivering positive outcomes across the state<sup>1</sup>.

NSW's regional model enables local communities to have a direct say in how their landscapes are managed, and empowers landholders to voluntarily manage land for private and public benefit. It does this by devolving significant planning and investment responsibilities to 13 regional Catchment Management Authorities (CMAs). CMAs engage and partner with their local communities, industry and governments to develop and implement strategic catchment action plans for improving the health, productivity and resilience of their landscapes.

Based on what has been learned through implementing this model and framework for almost a decade, the Natural Resources Commission (NRC) believes some critical elements of the governance framework can be improved.

Specifically, this report outlines our recommendations for:

- adopting a new state-wide goal and five new state-wide targets that focus on what is most important, including recognising the critical role of people in the landscape
- including governance within the *Standard for Quality Natural Resource Management* (the Standard)
- refocusing state-wide monitoring, evaluation and reporting (MER) on informing sound policy and evidence-based decision making, and driving continuous improvements in efficiency and effectiveness.

This report also describes the next stages of the NRC's assessment and audit strategy, which will focus on assuring governments, industry and the community that their investments are delivering the desired social, cultural, economic and environmental outcomes.

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<sup>1</sup> Natural Resources Commission (December 2010), *Progress towards healthy resilient landscapes: Implementing the Standard, targets and catchment action plans*.

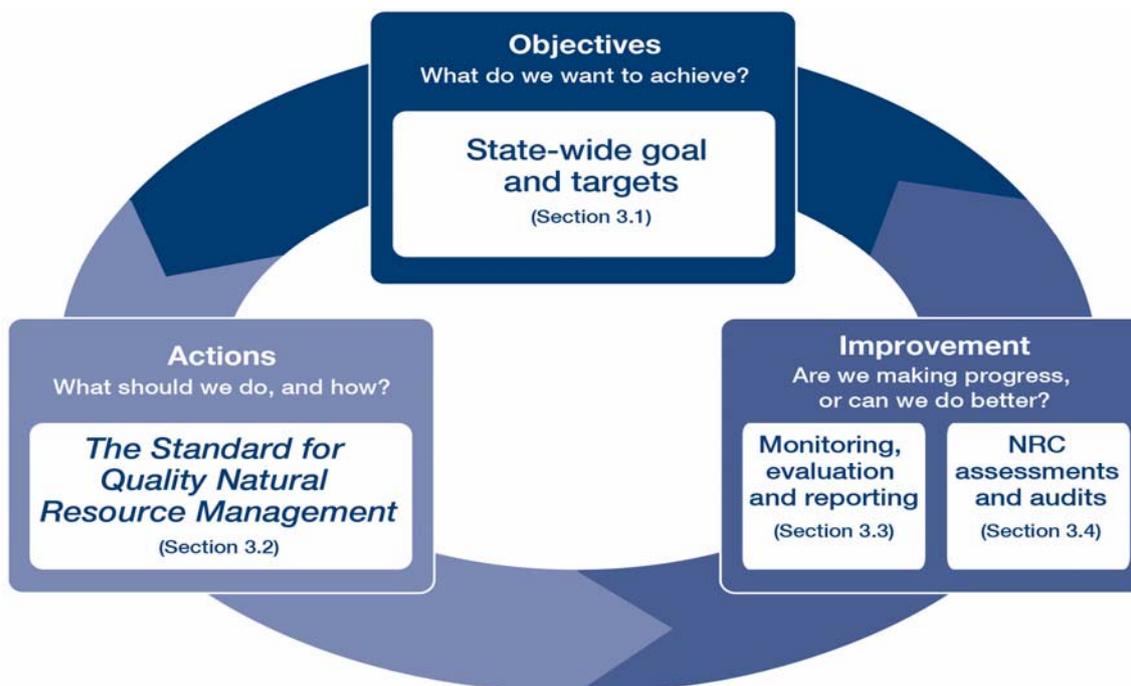
## 2 A strong framework for natural resource management

Natural resource management is a complex field, in which many stakeholders are acting at different scales to tackle challenging issues with finite resources. With so many people involved, it is important that natural resource management directs investment to where it is most needed, aims for the highest quality results, and stands up to public scrutiny. NSW's regional model for natural resource management provides an effective means of addressing the inherent complexities of managing our landscapes in a co-ordinated and rigorous way.

At the state scale, the regional model is supported by a framework that provides important guidance and accountability for Catchment Management Authorities (CMAs) and government. This framework includes:

- **state-wide goal and targets** – to ensure efforts at local, regional and state scales align with state-wide priorities, and provide a means of tracking progress
- **the *Standard for Quality Natural Resource Management*** – to help CMAs and other stakeholders work more effectively towards the state-wide goal and targets, by promoting consistent, high-quality natural resource management practices across NSW
- **monitoring, evaluation and reporting (MER)** – to support ongoing improvement, inform sound policy and evidence-based decision making, and assess progress against the state-wide targets
- **assessments and audits of regional catchment action plans** – to determine the quality of the plans, how effectively they are being implemented and, most importantly, what results are being achieved on the ground.

The existing framework has helped build a robust foundation for the regional model. However, there are some improvements that will increase the efficiency and effectiveness of the regional model, and help natural resource managers better cope with current and emerging challenges. These recommended improvements are outlined in **Chapter 3**.



**Figure 1: Overview of the supporting framework for natural resource management**

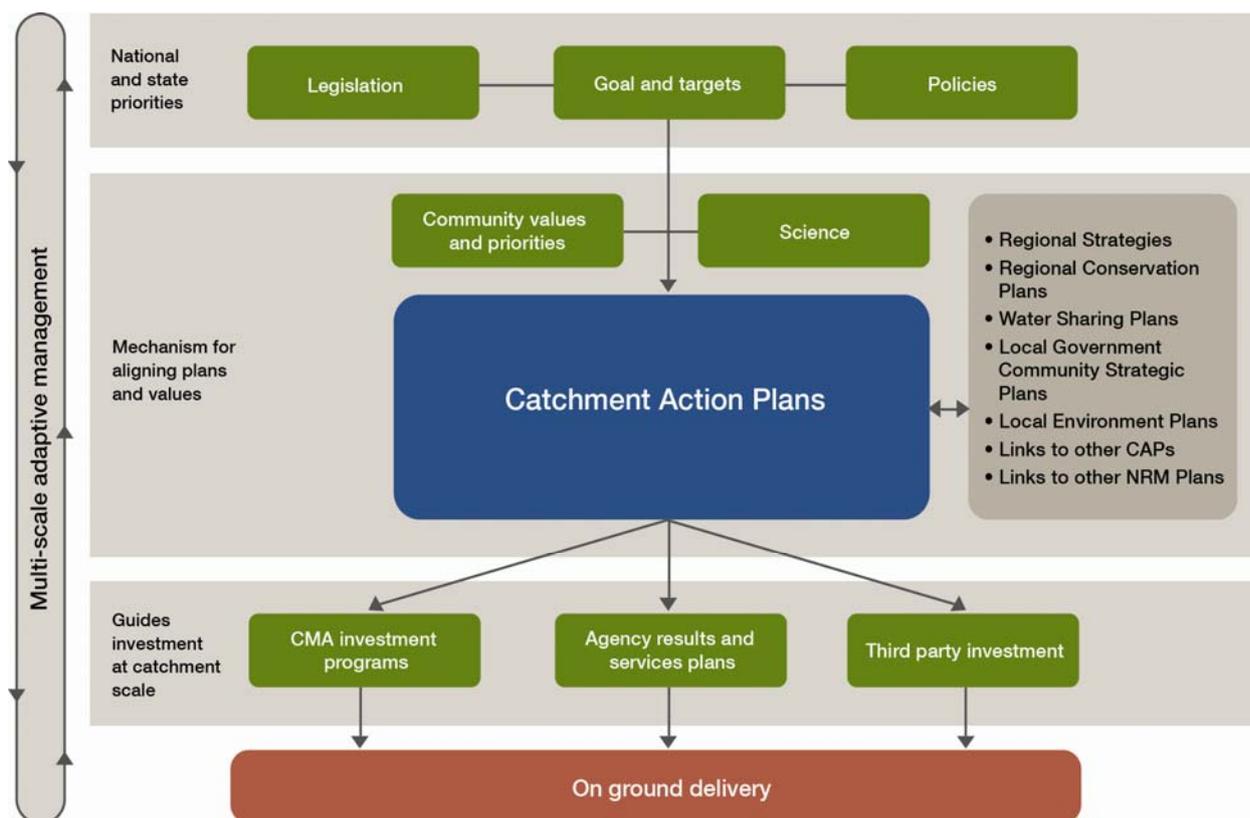
## 2.1 Supporting regional decision making and delivery

NSW’s regional model for natural resource management empowers communities to identify their region’s priorities and implement strategies for managing their landscapes. The NSW Government, in its *NSW 2021* plan, is committed to increasing devolved decision making at the regional scale by developing upgraded catchment action plans across the state by March 2013<sup>2</sup>.

These upgraded plans will help make progress towards a long-term vision for catchment action plans as a mechanism for aligning and delivering a range of state and national plans, policies and programs at the regional scale<sup>3</sup> (this vision is illustrated in **Figure 2**).

The upgraded plans will reflect the clear shift towards greater collaboration between agencies and CMAs, and commitment to a whole-of-government approach to regional resource planning and management in NSW. These plans will also capitalise on the emergence of systems thinking and resilience concepts as useful new frameworks for understanding and managing a region’s natural resources.

The Central West and Namoi catchment action plans have already been upgraded through a pilot process in which the CMAs, agencies and NRC trialled new ways of achieving better regional planning in NSW. The remaining 11 CMAs are currently upgrading their regions’ catchment action plans, in line with the NSW Government’s March 2013 deadline.



**Figure 2: Catchment action plans as integrated strategies for managing natural resources in a catchment region**

<sup>2</sup> NSW Government (September 2011), *NSW 2021 – A Plan to Make NSW Number One*. At <http://2021.nsw.gov.au>.

<sup>3</sup> Natural Resources Commission (December 2010), *Progress towards healthy resilient landscapes: Implementing the Standard, targets and catchment action plans*.

## 3 Improving the framework for natural resource management

The NRC considers there is scope to improve NSW's framework for natural resource management to better support government and community investment in maintaining and improving NSW's landscapes. Capturing our previous learning and experience within the current framework will help move natural resource management in NSW to the next level.

This chapter of the report outlines a series of recommendations that, if implemented, should result in a stronger, more integrated and results-focused framework to better support NSW's successful regional model over the next 10 years.

This chapter also explains how the NRC proposes to undertake future evaluations, and how these will capitalise on and benefit from the proposed improvements to the state-wide goal, targets, the Standard and monitoring, evaluation and reporting (MER) arrangements.

### 3.1 Sharpening the state-wide goals and targets

In 2005, the NRC developed one overarching goal and 13 state-wide targets for natural resource management in NSW. Some targets focused on fundamental elements of the state's natural resource base, while others focused on more specific priorities to support these elements.

This goal and targets provided a common focus for CMAs and agencies, and clarified natural resource management priorities across the state. However, as land managers at all scales shift their focus towards systems thinking and resilience-based decision making, it has become increasingly difficult to align with and report efficiently on all 13 targets at the state scale.

After nearly a decade of natural resource management under the existing targets, the goal and targets need revising to:

- sharpen their focus on key long-term issues of government and community concern
- focus on understanding and managing the landscape as a system supporting both production and conservation values
- improve their ability to guide regional decision making and measure progress
- support land managers to work together across tenures to build resilient landscapes
- encourage stronger integration of social and economic information into catchment planning and decision making.

#### **A new goal for natural resource management**

The state-wide goal captures the 'big-picture' view of what the state is hoping to achieve by investing in natural resource management. The NRC is proposing a new goal:

*'People working together to achieve healthy, productive, culturally vibrant and resilient landscapes'*

The new goal continues to express the important outcomes that natural resource management aims to deliver, while also placing greater emphasis on the importance of people working together to achieve these outcomes, as shown in **Figure 3**.

This goal also supports a move towards a more systems-based approach to understanding and managing natural resources. Understanding the landscape as a system, with both conservation and productive land use outcomes, encourages more effective and novel approaches to resource management and use, helping stimulate rural economies and preserve environmental, social and cultural values.

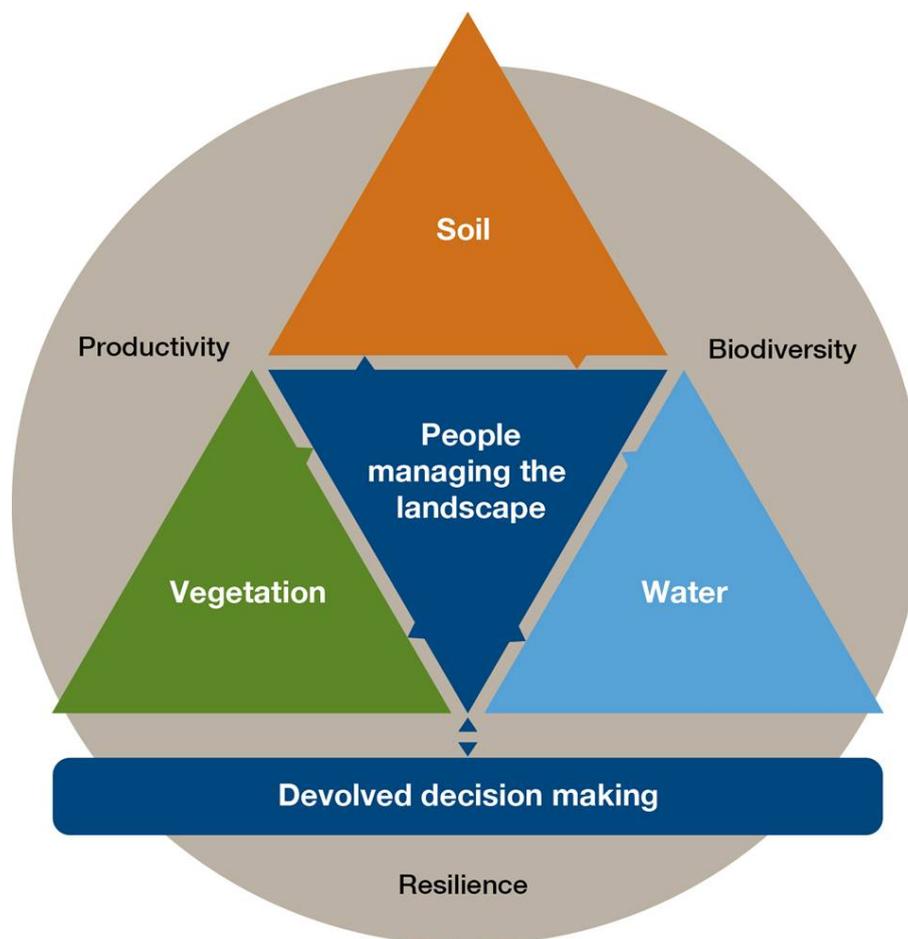


Figure 3: Model for managing landscapes

### New state-wide targets to help achieve the new goal

The state-wide targets identify the most important outcomes for natural resource management at the state scale; the outcomes that should contribute most to achieving the state-wide goal. CMAs interpret these state-scale targets at the regional scale by applying the Standard to develop catchment action plans.

In consultation with agencies and CMAs, the NRC has developed five new state-wide targets to better support the proposed new goal (see **Table 1**):

- **one community target** focused on improving the capacity and engagement of natural resource managers, recognising the central role of people in managing the landscape
- **three natural resource targets** focused on improving the condition of the core biophysical components of the resource base – soil, water and native vegetation – recognising that biodiversity is critical for achieving all these targets
- **one governance target** focused on increasing devolution of decision making to the most capable scale, in line with the intent of the regional model and the *NSW 2021* state plan.

Priority plant and animal species are important for all three of the natural resource targets. However, they are particularly emphasised in the vegetation target to reflect state-scale commitments to threatened species recovery and invasive species management across the landscape.

**Table 1: Proposed state-wide goal and targets**

Goal	
<b>People working together to achieve healthy, productive, culturally vibrant and resilient landscapes</b>	
State-wide targets for 2021	
Community	<i>Improve the capacity and engagement of natural resource managers</i>
Land	<i>Improve soil condition</i>
Water	<i>Improve the condition of aquatic ecosystems</i>
Vegetation	<i>Improve the extent and connectivity of native vegetation, and the condition of priority plant and animal species</i>
Devolution	<i>Improve the devolution of decision making to the most capable local level</i>

The new targets are:

- **more focused on what is most important** – moving away from siloed, restrictive targets to five simpler, higher level targets means we can target resources more effectively to focus on the big drivers of landscape health and key long-term issues of government and community concern
- **more useful for guiding regional decision making** – the targets are broad and inclusive, allowing greater scope for the most appropriate prioritisation of issues at the regional scale
- **more practical for monitoring progress** – focusing on trajectories, instead of on hitting numbers, allows for flexible MER approaches depending on timeframes, available datasets, changing stakeholder needs and improved knowledge and methods
- **simpler to report against** – the broader targets will simplify agency and CMA reporting processes.

The NRC is conscious of the importance of maintaining the continuity and momentum achieved in the natural resource management sector. In particular, we recognise the need for clear links between the revised and existing state-wide targets to ensure this continuity. As such, the new targets continue to focus on the fundamental elements of the natural resource base, and can be readily mapped to the previous 13 targets and many of the *NSW 2021* targets.

In addition to the benefits outlined above, adopting new targets provides an opportunity to review and realign the state-wide policy framework. The NRC’s analysis has identified a great deal of complexity within the plans and policies guiding natural resource management. Experience from the catchment action plan upgrades indicates that aligning with this complex framework is an onerous task. The regional model would benefit from a more coherent policy framework that aligns with the new targets.

The community target emphasises the importance of integrating social and economic information into natural resource management and decision making. However, analysing social and economic systems, and their linkages with biophysical processes, is a complex task. Improving our understanding of linked social, economic and ecological systems will require a collaborative effort by CMAs and agencies through their MER programs and the ongoing adaptive management of catchment action plans.

Including a devolution target also highlights that managing the landscape at the most appropriate scale requires sustained investment and support at the scales where decisions and actions are occurring. For example, to achieve co-ordinated, whole-of-government and community natural resource management, the NSW Government needs to continue to prioritise and maintain funding for implementing the upgraded catchment action plans.

The NRC has developed intent tables that describe the rationale and intent of each target, linkages between the targets, alignment with state and national policies, and current and likely future trends in MER activities associated with each target. The intent tables are provided as **Attachment 1**.

The NRC also believes a core set of policy and evaluation questions for each target is necessary to inform effective MER arrangements and priority datasets; refer to **Attachment 2** for example questions and **Section 3.3** for our recommendations for improving MER.

**Table 2** sets out the NRC’s recommendations for the state-wide goal and targets.

**Table 2: NRC’s recommendations for the state-wide goal and targets**

Recommendation	Next steps
<b>Sharpen our goals and objectives</b>	
<p><b>1</b>      <b>That the NSW Government adopt the state-wide goal and five targets for natural resource management.</b></p>	<ul style="list-style-type: none"> <li>▪ Replace the current 13 state-wide targets for 2015 with the recommended state-wide goal and five targets for 2021 (DPC)</li> <li>▪ Include the new state-wide goal and five targets for natural resource management in the next review of the NSW Government’s <i>NSW 2021 plan</i> (DPC)</li> <li>▪ Realign investment planning and financial management systems with the new targets (agencies and CMAs)</li> <li>▪ Ensure targets in upgraded catchment action plans align with the state-wide goal and targets for natural resource management (CMAs)</li> <li>▪ Improve the integration of social and economic information within catchment planning and decision making (CMAs and agencies)</li> <li>▪ Seek greater coherence among state-wide and regional plans and policies, using the state-wide goal and targets as a framework to align effort across government (Natural Resource Management Senior Officers Group (SOG))</li> <li>▪ Maintain regional investment to implement catchment action plans (NSW Government).</li> </ul>

## 3.2 Recognising good governance in the Standard

The *Standard for Quality Natural Resource Management* (the Standard) aims to promote consistent good practice in natural resource management across the state. It supports flexible and innovative planning, decision making and investment, and also acts as a performance benchmark for providing accountability within the regional model.

The Standard identifies inter-related components necessary to build and implement quality, systematic approaches to natural resource management. For each of these components it outlines required outcomes, provides guidance for achieving these outcomes and indicates the type of evidence that could demonstrate the required outcomes are being achieved.

The NRC's audits and reviews show that the Standard is working well in promoting consistent, high-quality natural resource management practices across NSW. It effectively clarifies the outcomes CMAs must achieve in performing their functions, and provides guidance on achieving these outcomes. In addition, it establishes transparent benchmarks against which catchment action plans and their implementation are audited and assessed.

### Including a governance component in the Standard

To further enhance its value, the NRC considers the Standard can be made more effective by including good governance as one of the key components of high-quality natural resource management (see **Figure 4**). Good governance is critical to the success of the regional model: it is fundamental for establishing and maintaining communities' trust in CMAs and willingness to work in partnership with them to plan and deliver on-ground results.

When the Standard was first developed, good governance was treated as an essential but implicit requirement for achieving the other core components of the Standard. However, it has become clear that CMAs and other natural resource managers would benefit from more explicit guidance on the governance outcomes they are expected to achieve. Highlighting the importance of good governance also responds to NRC audit findings, which identified that performance concerns at some CMAs often stem from governance issues.

This change to the Standard aims to codify existing good practice. Good governance should already underpin CMA business systems, so the new outcomes should not require additional CMA resources. It also allows the NRC's audits to target governance, providing the opportunity to formally recognise CMAs that are performing well in this area and prompt improvement in those that need it.

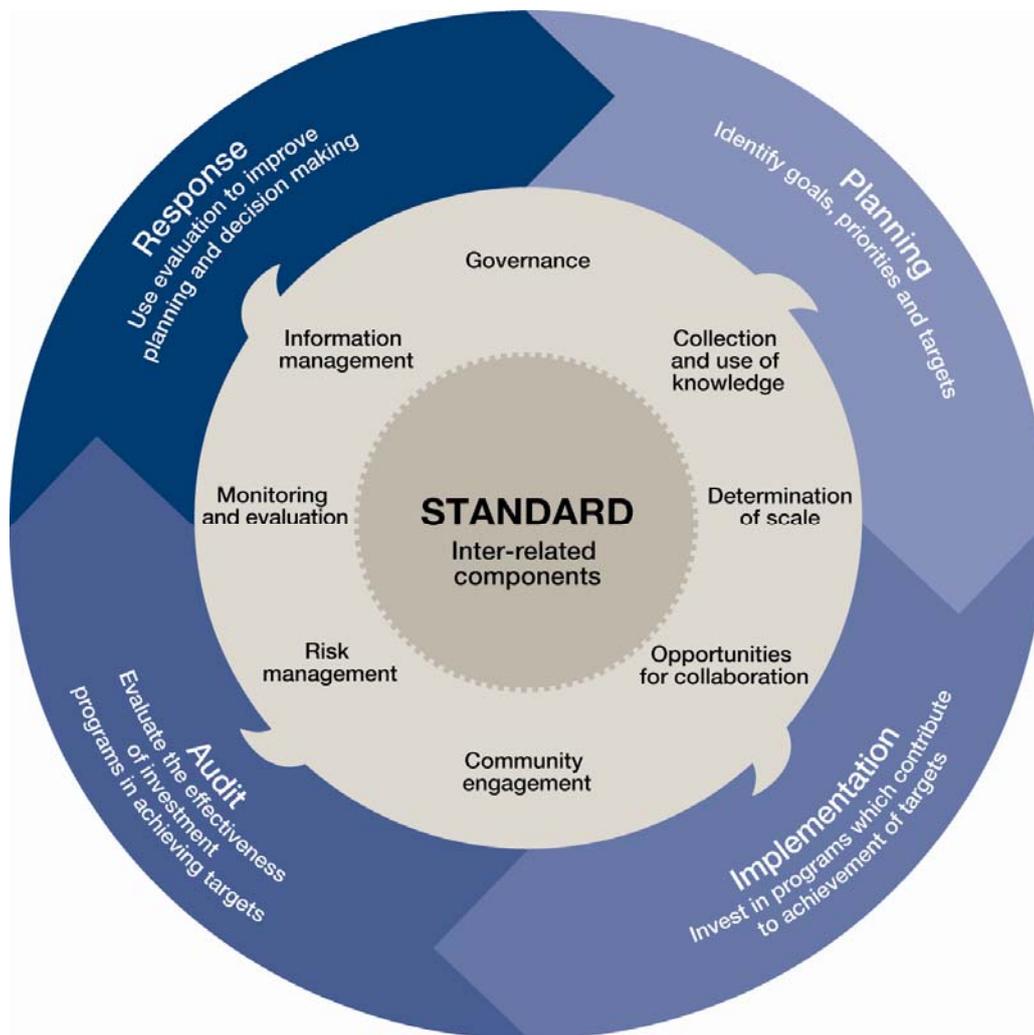
The NRC, in consultation with CMAs and agencies, has drafted a new governance section for the Standard; please refer to **Attachment 3** for the full version. The new governance component is consistent with best practice from both private and public sector organisations<sup>4</sup>, and with the Australian Government's performance excellence process.

While the Standard is mandatory for CMAs, it also provides valuable guidance for everyone involved in natural resource management. CMAs have demonstrated the value of the Standard in helping to improve their practices, and there is consistent feedback that other natural resource managers would similarly benefit from applying the Standard. Given the integrated nature of natural resource management and the number of parties involved, it would be

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<sup>4</sup> Audit Office of NSW (2011), *Corporate Governance – Strategic Early Warning System*, Sydney.

desirable for all partners, including agencies, to adopt the Standard as a tool for driving improvement.



**Figure 4: Dynamic interaction of the Standard and adaptive management (including the new governance component)**

Table 3 below sets out the NRC’s recommendations for improving the Standard.

**Table 3: NRC recommendations for improving the Standard**

Recommendation	Next steps
<b>Strengthen governance and accountability</b>	
<p><b>2 That the NSW Government adopt the revised <i>Standard for Quality Natural Resource Management</i>, which includes a new component on governance.</b></p>	<ul style="list-style-type: none"> <li>▪ Ensure regional planning, investment and decision making complies with the amended Standard (CMAs)</li> <li>▪ Use the updated Standard and targets for catchment action plan assessments and implementation audits (NRC)</li> <li>▪ Encourage all natural resource managers to use the Standard (NSW Government).</li> </ul>

### 3.3 Monitoring, evaluation and reporting for more effective natural resource management

Effective monitoring, evaluation and reporting (MER) is essential for informing policy and decision making at every stage of the adaptive management cycle, assessing and reporting on outcomes achieved and driving continuous improvement.

The *NSW Natural Resources Monitoring, Evaluation and Reporting Strategy 2010-15* (adopted in 2010) has been a significant development in the state's MER arrangements, and aspects of it are comparable to the best national and international MER initiatives<sup>5</sup>.

Nevertheless, important improvements to the current strategy and programs are required to support the strategic changes reflected in the revised state-wide goal and targets.

The revised state-wide targets provide the right framework for reviewing the state-wide MER strategy to better focus available resources and improve the value of state-wide MER for decision makers. There are three priority areas for change:

- 1 focusing data collection towards answering important policy and evaluation questions
- 2 clarifying roles at different scales and improving collaboration
- 3 reviewing reporting requirements.

#### Focusing data collection towards key policy and evaluation questions

The NRC recommends that state-wide data collection programs be informed by a set of policy and evaluation questions supporting each state-wide target. These policy and evaluation questions should drive monitoring needs and evaluation of progress at the state scale.

These questions will broadly cover issues such as:

- what outcomes are being achieved?
- what do communities value in their landscapes (socially, economically, environmentally and culturally)?
- what is the condition of those landscapes (i.e. are they supporting the values)?
- how effective have state policies and subsequent landholder management actions been?
- are policies and management actions making a difference?

More specific examples of evaluation questions are provided in **Attachment 2**.

Just as the revised goal and targets focus on the fundamental elements of the natural resource base at the state level, the NSW MER strategy needs to provide evidence to support decision making on these elements at the state scale. Therefore, for each of the revised targets, there is a core set of monitoring programs and datasets that need to be prioritised and maintained for the long term to detect change and trends that can take a long time to observe.

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<sup>5</sup> Thomas, M., Parsons, M., Southwell, M. and Flett, D. (2011), *Benchmarking NRM and MER initiatives against the NSW Natural Resources MER Strategy: A Report to the NSW Natural Resources Commission*, University of New England.

The state MER program should also continue the move towards predictive modelling and forecasting frameworks, so that monitoring efforts can focus on collecting essential data for supporting these tools, rather than the current emphasis in routine data collection for resource condition assessments.

### **Clarifying roles at different scales and improving collaboration**

There are 13 teams within agencies working on MER for the current 13 targets. These teams should be integrated into four programs supporting the new state-wide targets for community, land, water and vegetation. This will focus state-scale MER efforts on key state issues and deepen understanding of social-ecological systems in the landscape. The NRC will report on the devolution target through its ongoing program of independent evaluation and reporting.

Further, just as catchment action plans are becoming whole-of-government, so should MER programs. This will allow state-scale MER to better support catchment action plan implementation and agency modelling. There is also scope to improve sharing and alignment of natural resource management data, information and knowledge between NSW, other state governments and the Australian government, and make better use of information generated from community, industry and local government monitoring and evaluation programs.

### **Review natural resource management and environmental reporting**

The NRC recommends that the NSW Government reconsiders the purpose, content, frequency and delivery of environmental and natural resource management reporting.

We believe this is an important opportunity to reduce the overall reporting burden in natural resource management, and establish streamlined and efficient evaluation and reporting processes that are relevant to regional decision makers and investors.

NSW and local government State of the Environment reporting should be better aligned (in terms of timing and content) and potentially streamlined with whole-of-government reporting on catchment action plan implementation, and Australian Government State of the Environment reporting. For example, all these functions could be rolled into a five-yearly reporting cycle.

**Table 4** (on the following page) sets out the NRC's recommendations for a new MER approach.

**Table 4: NRC recommendations for a new MER approach**

Recommendation	Next steps
<b>Improve knowledge base to inform decision making</b>	
<p><b>3 That the NSW Government revise its natural resource management MER strategy 2010-15 to support the implementation of the new state-wide targets.</b></p>	<ul style="list-style-type: none"> <li>▪ Streamline the 13 theme teams into four integrated programs (SOG, agencies)</li> <li>▪ Re-focus monitoring programs towards key policy and evaluation questions, collecting essential data and supporting modelling and forecasting tools (SOG, agencies)</li> <li>▪ Implement collaborative processes to support planning and implementation for whole-of-government and community catchment action plans (SOG, agencies, CMAs)</li> <li>▪ Improve sharing and alignment of natural resource management data, information and knowledge between NSW, other state governments and the Australian government (DPC)</li> <li>▪ Make better use of information generated from community, industry and local government monitoring and evaluation programs (agencies, CMAs, local government)</li> <li>▪ Review the value and frequency of existing natural resource management and environment reporting arrangements (NSW Government).</li> </ul>

The proposed recommendations will result in changes to roles and responsibilities and some reallocation of funding within agencies. The NRC has been working with agencies and CMAs to review the NSW MER strategy and program, so as to recommend changes to the Natural Resource Management Senior Officers Group (SOG). Further detail around the monitoring programs, including prioritisation of individual datasets, will be worked through with the Natural Resource Management Senior Officers Group.

### 3.4 Focusing the NRC's assessments and audits on outcomes

The NRC assesses catchment action plans and audits their implementation in line with legislative requirements<sup>6</sup>. The NRC's assessments and audits are a key assurance mechanism supporting devolved regional natural resource management and decision making, and form part of the NRC's wider program of independent evaluation and reporting which aims to:

- inform the NSW Government and other stakeholders about what is working in natural resource management, what needs fixing and how the regional model is progressing towards its stated policies and targets
- promote excellence and drive continual improvement in CMAs' strategic planning and resource stewardship actions.

To date, the NRC has completed one full round of catchment action plan assessments and implementation audits. When the NRC first established its overall strategies for these assessments and audits in 2005, it recognised that its approach would need to change and evolve over time. This section sets out our proposed approach to future evaluations, including how future assessments and audits will benefit from the proposed recommendations for improving NSW's goal, targets, Standard and MER approach.

#### Assessing and recommending upgraded catchment action plans

The NRC has a statutory role in advising the NSW Government on whether to approve catchment action plans. This advice is based on an assessment of whether each plan meets the required outcomes of the Standard, and whether, with effective implementation, the plan will lead to progress towards the state-wide targets for natural resource management.

CMAs are currently upgrading their regions' catchment action plans in line with the March 2013 deadline for upgraded plans set by the NSW Government in its *NSW 2021* plan.

The NRC collaborated with CMAs and government representatives to develop an assessment framework setting out our expectations for the upgraded plans, and explaining how we would develop our advice to the NSW Government<sup>7</sup>. The framework supports the use of systems thinking and resilience concepts, understanding landscapes as dynamic systems made of linked social, economic and ecological components. It also promotes whole-of-government and community planning. We have tested this framework against the Standard and calibrated it through the pilot process.

Under this framework, we will assess whether each plan:

- was developed using a structured, collaborative and adaptable planning process
- uses best available information to develop regional targets and actions for building resilient landscapes
- enables collaborative action and investment between government, community and industry partners.

For each criterion, we will refer to three attributes to assess whether the plan meets the criterion; see **Attachment 4** for the full set of criteria and attributes.

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<sup>6</sup> These functions are specified in Section 13 of the *Natural Resources Commission Act 2003*, and Sections 22, 23 and 26 of the *Catchment Management Authorities Act 2003*.

<sup>7</sup> For more information: NRC (2011), *Framework for assessing and recommending upgraded catchment action plans*.

### **Auditing catchment action plan implementation**

The NRC's audits aim to provide assurance to investors that catchment action plans are being effectively implemented, and are delivering social, economic, cultural and environmental outcomes in line with the state-wide targets. These audits also hold catchment management authorities accountable in their role as regional natural resource managers, thus engendering community and investor confidence in the CMAs' business practices and driving improved performance.

For the next round of audits, the NRC will maintain a rolling program of comparable audits of catchment action plan implementation that are common across all regions. This program will be complemented by additional audits addressing region-specific risks (if any) as they arise. This approach will focus resources on measuring progress against the most important aspects of implementation, while also being flexible enough to respond to emerging risks and regional issues.

The proposed priorities for the next round of audits are:

- delivering outcomes
- demonstrating good governance
- enabling whole-of-government alignment
- demonstrating collaboration and community engagement.

A major driver behind these new priorities is to shift towards auditing outcomes in response to growth in the CMAs' maturity and capabilities since 2005. At the time of the first audits, CMAs were new organisations, rightly focused on building their systems and processes in line with the requirements of the Standard. As such, the NRC's initial audits focused on CMA processes and opportunities for improvement. Over time, the CMAs' capabilities have grown and their business systems are now well established. It is therefore reasonable for the NRC's audits to start focusing on whether implementation of the catchment action plans has begun to deliver the social, economic and environmental outcomes that investors expect.

In addition, these audit priorities take into account our recommended changes to the state-wide targets and the Standard, particularly the new governance component of the Standard and the new outcomes captured by the revised state-wide targets (refer to the previous sections of this report for more discussion of these changes).

The NRC's current audits of Border Rivers-Gwydir and Sydney Metropolitan CMAs will complete the suite of audits conducted along the previous 2005 lines of audit inquiry. All subsequent audits will then focus on the new audit priorities set out above. The NRC will start the next round of audits once CMAs have had sufficient time to start implementing their upgraded catchment action plans.

### **Reporting on progress against the state-wide targets**

The NRC will continue to provide regular, evidence-based reports to the NSW Government on progress towards healthy, productive and resilient landscapes. These progress reports will draw on the findings of the NRC's assessments and audits, as well as outcomes from the state-wide MER program, to drive the next cycle of improvements to natural resource management in NSW.

## 4 Summary of recommendations

Recommendation	Next steps
<b>Sharpen our goals and objectives</b>	
<p><b>1 That the NSW Government adopt the state-wide goal and five targets for natural resource management.</b></p>	<ul style="list-style-type: none"> <li>▪ Replace the current 13 state-wide targets for 2015 with the recommended state-wide goal and five targets for 2021 (DPC)</li> <li>▪ Include the new state-wide goal and five targets for natural resource management in next review of the NSW Government's <i>NSW 2021</i> plan (DPC)</li> <li>▪ Realign investment planning and financial management systems with the new targets (agencies and CMAs)</li> <li>▪ Ensure targets in upgraded catchment action plans align with the state-wide goal and targets for natural resource management (CMAs)</li> <li>▪ Improve the integration of social and economic information within catchment planning and decision making (CMAs and agencies)</li> <li>▪ Seek greater coherence among state-wide and regional plans and policies, using the state-wide goal and targets as a framework to align effort across government (SOG)</li> <li>▪ Maintain regional investment to implement catchment action plans (NSW Government).</li> </ul>
<b>Strengthen governance and accountability</b>	
<p><b>2 That the NSW Government adopt the revised <i>Standard for Quality Natural Resource Management</i>, which includes a new component on governance.</b></p>	<ul style="list-style-type: none"> <li>▪ Ensure regional planning, investment and decision making complies with the amended Standard (CMAs)</li> <li>▪ Use the updated Standard and targets for catchment action plan assessments and implementation audits (NRC)</li> <li>▪ Encourage all natural resource managers to use the Standard (NSW Government).</li> </ul>
<b>Improve knowledge base to inform decision making</b>	
<p><b>3 That the NSW Government revise its natural resource management MER strategy 2010-15 to support the implementation of the new state-wide targets.</b></p>	<ul style="list-style-type: none"> <li>▪ Streamline the 13 theme teams into four integrated programs (SOG, agencies)</li> <li>▪ Re-focus monitoring programs towards key policy and evaluation questions, collecting essential data and supporting modelling and forecasting tools (SOG, agencies)</li> <li>▪ Implement collaborative processes to support planning and implementation for whole-of-government and community catchment action plans (SOG, agencies, CMAs)</li> <li>▪ Improve sharing and alignment of natural resource management data, information and knowledge between NSW, other state governments and the Australian government (DPC)</li> <li>▪ Make better use of information generated from community, industry and local government monitoring and evaluation programs (agencies, CMAs, local government)</li> <li>▪ Review the value and frequency of existing natural resource management and environment reporting arrangements (NSW Government).</li> </ul>

## **Attachment 1**

# **Intent tables for the revised state-wide goal and targets**

### Intent

This goal is intended to:

- recognise the important role of people in influencing the function of our landscapes and the ecosystem services they deliver
- promote a balance between production and conservation
- recognise that healthy ecosystems and biodiversity are necessary to support productivity
- recognise that our social and ecological domains need to be managed as systems that are connected across scales, and that are subject to ongoing shocks, changes and disturbances (for example, invasive species, climate variability and fluctuations in international commodity prices)
- recognise that a small number of important variables influence the way landscape systems function, and that crossing thresholds (or ‘tipping points’) associated with these variables can transform the system into alternative (and potentially undesirable) states
- promote resilient, functioning landscapes that can support a wide range of community values, including economic, social, environmental and cultural (Aboriginal and non-Aboriginal) values
- recognise that landscape-scale approaches are required to address many natural resource management issues.

### Targets

The goal is underpinned by five targets, all of which are to be achieved by 2021, consistent with the NSW Government’s *NSW 2021* plan:

- **a community target** – *Improve the capacity and engagement of natural resource managers*
- **three linked biophysical targets:**
  - Land – *Improve soil condition*
  - Water – *Improve the condition of aquatic ecosystems*
  - Vegetation – *Improve the extent and connectivity of native vegetation, and the condition of priority plant and animal species*
- **a devolution target** – *Improve the devolution of decision making to the most capable local level.*

The community and biophysical targets are designed to focus state-wide effort on the fundamental elements that influence the function of a landscape, and its ability to support the productive, social, environmental and cultural values of communities. These are soils, water (surface and groundwater) and vegetation, and the capacity of the communities that use and manage them. These targets are interrelated, apply to both private and public land, and recognise that actions towards achieving them will differ across landscapes. For example, how native vegetation issues are managed will differ between rangeland, agricultural and coastal landscapes.

The relationships between the biophysical elements lead to regional variation in the landscape’s ability to deliver essential ecosystem services across the state. In turn, this has led to differences in current land use and management practices. For example, the alluvial soils and perennial river systems of the wheat and sheep belt Catchment Management Authority (CMA) regions have driven land use for dry-land and irrigated cropping, whereas the fragile soils of the vegetated rangeland CMA regions mainly support grazing. However, even with these different land uses, the current demands on the landscape are outpacing the supply of ecosystem services. For example, degradation processes including erosion and acidification are reducing the quality of soils and water and thus their ability to support the social, economic and environmental values we place in them.

The targets for these fundamental elements aim to increase landscape resilience and maintain the flows of ecosystem services, to balance supply and demand and ensure the ongoing health and productivity of the landscape.

The devolution target is designed to support the intent of the regional model and the NSW Government policy to devolve decision making and control wherever possible to regional and local groups, because they are best placed to understand and make locally appropriate decisions. The target recognises that landscape systems are most often best understood and managed at the regional and local scale. It is important that this principle continues to underpin natural resource management policy in NSW.

### Intent

The intent of this target is to ensure that natural resource managers continue to develop their adaptive capacity and willingness to improve landscape health, and also improve their ability to remain viable and productive land managers. Natural resource managers include individual land and water managers (such as farmers, fishers, Aboriginal landowners and national parks and forestry staff), agencies, universities, industry, Aboriginal groups and community groups.

This target underpins the achievement of all the others. As approximately 90 per cent of land in NSW is privately managed, it is critical that individual land managers and private landowners have the knowledge, capacity, motivation and necessary support to voluntarily improve the condition of the land or water resource they manage.

The capacity of natural resource managers encompasses human, social, financial, built and natural elements (commonly referred to as the 'five capitals')<sup>1</sup>. Human capacity includes skills, knowledge, economic viability and community networks. Improving an individual's capacity to contribute to natural resource management can also increase the economic viability of landholders over time, delivering both private and public benefits. Engaging natural resource managers from a range of scales through collaborative processes, such as catchment action plan (CAP) upgrades can also promote two-way knowledge sharing between government and local communities.

This target focuses on elements of capacity that can be directly influenced by investments (for example, engaging farmers through best practice demonstration field days and extension support). This in turn leads to behavioural and practice changes and, ultimately, improved natural resource outcomes<sup>2</sup>.

There is already a strong understanding in industry and rural communities about the value of good natural resource management for long-term financial viability<sup>3</sup>. However, ongoing capacity building is required because landscape processes and land management systems are complex and dynamic, while scientific understanding and knowledge is always developing. Additional challenges are emerging, such as aging agricultural demographics<sup>4</sup>, declining skills shortages in agricultural sciences<sup>5</sup>, and the need for improved knowledge to respond to pressures such as climate change<sup>6</sup>.

### Status and trends (at 2010)

At the state scale:

- natural resource managers' capacity is fair, and there is a predicted stable trend in condition<sup>7</sup>.

At the regional scale:

- most CMAs are effectively engaging landholders and communities at a high to very high level (as audited by the NRC in 2008-09)<sup>8</sup>
- natural resource managers' capacity is fair in most CMA regions, with uncertain future trends in condition in around half the CMA regions<sup>9</sup>.

### Examples of activities that contribute to this target

- Education and training in best management production practices
- Leadership, mentoring and peer group support programs
- Aboriginal partnerships, including employment opportunities, land management and supporting connections to Country
- Access to online information and knowledge.

## Improve the capacity and engagement of natural resource managers

### Links with key legislation and policies

- Draft NSW Soils Policy (NSW)
- Two Ways Together (NSW)
- Carbon Farming Skills (Australian Government)
- Caring for our Coasts Policy (Australian Government)
- Climate Change Adaptation Program (Australian Government)
- Indigenous Carbon Farming Fund (Australian Government)
- Regional NRM Planning and Climate Change Fund (Australian Government)
- Strengthening Basin Communities Program (Australian Government)
- Sustainable Rural Water Use and Infrastructure (Australian Government)
- Caring for our Country (Australian Government)
- National Partnership Agreement on Indigenous Economic Participation (Australian, State and Territory Governments).

### Monitoring, evaluation and reporting

#### **Monitoring, evaluation and reporting programs for this target at the state scale would focus on:**

- evaluating the **performance of NRM management actions** at state and regional scales in securing improvements in the condition of natural resources and evaluating return on investment
- maintaining an adequate **core set of long-term datasets** to detect and evaluate change over time, for example in the human, social, financial, built and natural elements of natural resources managers' capacity (the 'five capitals')
- supporting CMAs and other groups in **integrating socioeconomic information** (including information on Aboriginal and non-Aboriginal heritage, cultural and production values) in catchment planning and decision making
- applying **capacity assessments** of natural resource managers at the catchment scale (for example, the Rural Livelihoods Analysis framework)
- using multiple lines of evidence to help **evaluate progress** towards this target, such as Australian Bureau of Agricultural and Resource Economics and Sciences and the Australian Bureau of Statistics longitudinal NRM surveys
- **integrating socioeconomic parameters** with biophysical frameworks, decision-support platforms and natural resource management plans (to help support decision making and prioritisation)
- developing **methodological standards and protocols** (such as those for the Rural Livelihoods Analysis framework)
- implementing **collaborative monitoring, evaluation and reporting initiatives with CMAs** (such as capacity assessments of natural resource managers) to support implementation of whole-of-government and community catchment action plans.

### Intent

The intent of this target is to maintain and improve the ecosystem functions of soils, including to improve the profitability of industries supported by soils, and limit offsite impacts of soil degradation.

Healthy soils are considered a non-renewable resource, given the length of time it takes for soils to form through natural processes<sup>10</sup>. As global demand for food increases in the future<sup>11</sup>, healthy soils (and available farmland) in NSW will play an important role in meeting the world's global food production requirements.

Soils in good condition are a fundamental element of healthy, productive, functioning landscapes as they provide ecosystem services that include nutrient storage and cycling; moisture-holding capability; support for diverse populations of flora and fauna both above and below the ground; an effective sink for carbon in our landscapes; and resilience and resistance to erosion and other degradation pressures<sup>12</sup>.

Appropriate land-use and management practices are two of the key factors for achieving this target<sup>13</sup>. Inappropriate management affects soil condition through processes such as wind, sheet and gully erosion; loss of carbon and soil structure; acidification; or salinisation<sup>14</sup>. In turn, diminished soil capacity affects other elements of the landscape (for example, water by acid runoff from exposed acid sulfate soils in coastal floodplains<sup>15</sup>), and so also has implications for achieving the other biophysical targets.

In some landscapes, feral plant and animal species have impacted, and continue to impact, the condition and function of soils. For example, soil erosion can be caused by rabbit burrows, and native plants behaving in an invasive manner can inhibit the growth of groundcover to bind soil particles<sup>16</sup>.

### Status and trends (at 2010)

At the state scale:

- on average soil condition is fair, and showing a predicted stable trend in condition<sup>17</sup>
- land managed within capability is fair, and showing a stable future trend in condition<sup>18</sup>.

At the CMA regional scale:

- nearly all CMA regions have fair to good soil condition, with stable or improving condition for some soil types across CMA regions<sup>19</sup>; however, there is a deteriorating trend at many individual sites<sup>20</sup>
- land managed within capability is fair across nearly all CMA regions, and has improved by 30 per cent across a range of soil types within different CMA regions<sup>21</sup>.

### Examples of activities that contribute to this target

- Excluding, eradicating or managing invasive species (including biosecurity and disease threats) on both private and public lands
- Adopting best management agricultural practices
- Erosion control works
- Total grazing pressure management
- Increase deep-rooted perennials in pastures
- Groundcover management across private and public lands.

### Links with key legislation and policies

- *Soil Conservation Act 1938* (NSW)
- Draft Soils Policy (NSW)
- Growing Agriculture 2020 (NSW)
- Agri-Food: NSW Business Sector Growth Plan (NSW)
- Policy for Sustainable Agriculture in NSW (NSW)
- Invasive Species Plan 2008–2015 (NSW)
- Carbon Farming Skills (Australian Government)
- Indigenous Carbon Farming Fund (Australian Government)
- Australian Weeds Strategy (Australian Government)
- Carbon Farming Initiative (Australian Government)
- Caring for our Country (Australian Government).

### Monitoring, evaluation and reporting

#### Monitoring, evaluation and reporting programs for this target at the state scale would focus on:

- measuring the **performance of NRM management actions** at state and regional scales with regard to securing improvements in the condition of natural resources and evaluating return on investment
- maintaining an adequate **core set of long-term datasets** to detect and evaluate the condition of and change over time in soil, for example organic carbon and soil structure (which are existing datasets under the current program)
- appropriately securing those datasets and **making them available** to natural resource managers and the community on demand
- developing and improving **models and forecasting frameworks** (for example models for wind and sheet erosion) to support decision making, and targeting data collection programs to verify modelling predictions
- using ancillary **datasets from other programs** – such as those established to meet agency statutory functions, for example the *Soil Conservation Act 1938* (NSW) – to help evaluate progress developing and implementing information management and methodological **standards and protocols**
- implementing **collaborative monitoring, evaluation and reporting programs initiatives with CMAs** to support the implementation of whole-of-government and community catchment action plans.

## Improve the condition of aquatic ecosystems

### Intent

The intent of this target is to maintain and improve functioning riverine, estuarine, wetland, groundwater and marine ecosystems. This target recognises the interconnected (and interdependent) nature of riverine and near-shore marine systems, and the importance of considering these system as a whole – including river headwaters; groundwater recharge and discharge sites; and wetlands and floodplains; and estuaries and marine waters. Water processes (for example, flows and storage) are also strongly connected with other landscape elements such as vegetation and soils<sup>22</sup>.

Improving the condition of aquatic ecosystems will support and maintain natural biological and geochemical processes; industries such as aquaculture and fishing; high-value habitats; and viable populations of native plants and animals (including threatened species).

Healthy aquatic ecosystems provide:

- important ecosystem services such as good-quality drinking water; flood and storm mitigation; and places for plants and animals to live and breed
- reliable and good-quality surface and groundwater for households and industries, to support economic sustainability
- sustainable supplies of seafood such as fish, oysters and seaweed
- social, cultural and spiritual benefits to Aboriginal and non-Aboriginal communities<sup>23</sup>.

Some aquatic ecosystems have international and national significance, such as wetlands listed under the international Ramsar Convention On Wetlands of International Importance (which are also identified as matters of national environmental significance under Australian Government environmental legislation)<sup>24</sup>. Aquatic ecosystems also support culturally significant salt and freshwater assets.

Many aquatic ecosystems are extensively degraded and remain under threat from pressures such as water extraction and flow regulation, poor water quality, salinity, algal blooms, invasive species, unsustainable fisheries management, changes in land use, population pressures, historical vegetation clearing, and habitat destruction<sup>25</sup>.

Improvements in aquatic ecosystem conditions will largely depend on managing and protecting areas currently in good condition; planning and allocating water for ecological purposes; appropriate land-use planning and sustainable land management practices; improving geomorphic processes; restoring terrestrial landscapes (including riparian zones); restoring in-stream and floodplain connectivity; managing invasive species; managing marine reserves; and managing fisheries<sup>26</sup>.

## Improve the condition of aquatic ecosystems

### Status and trends (at 2010)

At the state scale:

- river and wetland condition is poor, and is following a predicted stable trend in condition<sup>27</sup>
- estuarine and marine water condition is fair, and is showing a predicted stable trend in condition (with the exception of declining future trend in condition for groundwater)<sup>28</sup>
- groundwater condition is fair, and showing a declining future trend in condition<sup>29</sup>.

At the CMA regional scale:

- river, groundwater and wetland conditions are generally in poor to very poor health across most CMA regions; however, the condition of groundwater systems varies widely, with some in very good condition<sup>30</sup>
- estuaries and marine waters are generally in good to very good condition in most CMA regions, but pressure on estuary and marine water condition is increasing in many areas<sup>31</sup>.

Since 2010, many regions in NSW have received above average rainfall<sup>32</sup> increasing water storages<sup>33</sup> and river flows<sup>34</sup>, and triggering positive ecological responses such as an increase in bird breeding events across the state<sup>35</sup>.

### Examples of activities that contribute to this target

- |                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>▪ Excluding, eradicating or managing invasive species (including biosecurity and disease threats) on both private and public lands</li><li>▪ Water sharing planning</li><li>▪ Water efficiency initiatives</li><li>▪ Maintaining and protecting river reaches and estuaries that are in good condition and/or of high ecological value</li></ul> | <ul style="list-style-type: none"><li>▪ Identifying and maintaining priority groundwater-dependent ecosystems</li><li>▪ Establishing, protecting and enhancing in-stream, estuarine and marine habitats</li><li>▪ Managing diffuse and point-source pollution</li><li>▪ Improving the marine reserve system based on threats and risks</li></ul> | <ul style="list-style-type: none"><li>▪ Improving coastal and riparian vegetation zones</li><li>▪ Improving the understanding of connections between surface and groundwater systems</li><li>▪ Managing floodplain harvesting</li><li>▪ Improving passages for fish populations</li><li>▪ Improving spatial monitoring of native fish populations.</li></ul> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Improve the condition of aquatic ecosystems

### Links with key legislation and policies

- *Water Management Act 2000* (NSW)
- *Fisheries Management Act 1994* (NSW)
- *Marine Park Act 1997* (NSW)
- *Threatened Species Conservation Act 1995* (NSW)
- State environmental planning policies, for example Coastal Wetlands 14 (NSW)
- NSW Coastal Policy (NSW)
- Water Sharing Plans (NSW)
- Environmental Water Management Plans (NSW)
- NSW Wetlands Policy (NSW)
- NSW Diffuse Source Water Pollution Strategy (NSW)
- NSW Sea Level Rise Policy Statement (NSW)
- NSW Salinity Strategy (NSW)
- NSW Indigenous Fisheries Strategy
- Policy and Guidelines for Aquatic Habitat Management and Fish Conservation (NSW)
- Groundwater Framework Policy (NSW)
- NSW Groundwater Quality Protection Policy
- NSW Groundwater Dependent Ecosystem Policy
- State Weirs Policy (NSW)
- Priorities Action Statement and recovery plans (NSW)
- Invasive Species Plan 2008–2015 (NSW)
- Carp and Caulerpa Control Plans (NSW)
- Habitat Protection Plans (NSW)
- Coastal Zone Management Plans (NSW local governments)
- Delivering the Ramsar Convention in NSW (NSW)
- NSW Biosecurity Strategy (NSW)
- Policy and Guidelines for Fish-Friendly Road Crossings (NSW)
- *Environmental Protection & Biodiversity Conservation Act 1999* (Cth)
- Australia's Biodiversity strategy 2010–2030 (Australian Government)
- Draft Murray Darling Basin Plan (Australian Government)
- Murray Darling Basin Native Fish Strategy (Australian Government)
- National Water Initiative (Australian Government)
- National Water Quality Management Strategy (Australian Government)
- Water for the Future (Australian Government)
- Caring for our Country (Australian Government).

### Monitoring, evaluation and reporting

#### **Monitoring, evaluation and reporting programs for this target at the state scale would focus on:**

- measuring the **performance of NRM actions** at state and regional scales in securing improvements in the condition of natural resources and evaluating return on investment
- maintaining an adequate **set of core, long-term datasets** to detect and evaluate the condition of and change over time in aquatic ecosystems, for example the extent of seagrass and saltmarsh in estuaries, and native fish population and abundance (which are existing datasets under the current program)
- appropriately securing those datasets and **making them available** on demand to natural resource managers and the community
- developing and improving **models and forecasting frameworks** (for example the aquatic Biodiversity Forecaster Tool) to support decision making, and targeting data collection programs to verify modelling predictions
- using ancillary **datasets from other programs** to help evaluate progress, such as those established to meet agency statutory functions, for example the *Water Management Act 2000* (NSW), *Marine Parks Act 1997* (NSW) and the *Fisheries Management Act 1994* (NSW)
- developing and implementing **technical standards and protocols**
- implementing **collaborative monitoring, evaluation and reporting initiatives** between agencies and CMAs to support the implementation of whole-of-government and community catchment action plans.

## Improve the extent and connectivity of native vegetation, and the condition of priority plant and animal species

### V E G E T A T I O N

#### Intent

The intent of this target is to maintain and improve the ecosystem services supported by native vegetation, and promote the continued long-term viability of plants and animals under threat of extinction. The target recognises that healthy native vegetation is a fundamental element in functioning landscapes across both private and public lands<sup>36</sup>.

Native vegetation supports important social, economic, cultural and environmental values. It provides important ecosystem services that support primary industries, such as reducing rising saline water tables, providing native grasslands and wind shelter for stock grazing, minimising soil erosion, and providing habitat for pollinating insects and native birds that prey on insects that can damage crops. It supports industries such as forestry (both public and private) and provides for carbon sequestration in our landscapes. Aboriginal communities have particularly strong cultural connections with native vegetation<sup>37</sup>.

Native vegetation also provides habitat for plant and animals species to live and reproduce. Native plants and animals are a fundamental element in healthy functioning landscapes. For example, native fauna provide essential ecosystem services, such as pollination and nutrient cycling, which help prevent widespread system collapse<sup>38</sup>.

In NSW, over 1000 plant and animal species are at risk of extinction from a range of threatening processes<sup>39</sup>. NSW is revising a 'Priorities Action Statement' (PAS) that aims to help prioritise our efforts so they are managed in a cost-effective manner<sup>40</sup>. The PAS intends to allocate species to six different management streams based on ecology, distribution and level of knowledge of the species.

Native vegetation management remains a key tool for natural resource managers to achieve integrated natural resource management outcomes. This means natural resource managers need to take a strategic approach to native vegetation management to ensure future options for communities, considering landscape context, scale and ecosystem processes<sup>41</sup> (this concept is recognised, for example in the PAS). In some landscapes, the focus may be on increasing the extent and connectivity of native vegetation between private land and vegetated nodes in the landscapes such as national parks and state forests<sup>42</sup>. In other landscapes, the focus may be on thinning native vegetation to improve biodiversity and production outcomes if the vegetation is acting as an invasive species (as defined under the *Native Vegetation Regulation Act 2005*). Management decisions about vegetation extent and connectivity should also consider potential flow-on impacts to other parts of the landscape. For example, in some landscapes connectivity may aid the dispersal of invasive species and diseases, or revegetation may increase the capture of surface water flows, thus impacting in-stream salinity levels. Management objectives and actions will also vary depending on the tenure of the land (for example, a national park compared with private land).

In many cases, historical clearing of native vegetation, and the associated destruction of habitat, remains one of the key impacts on the extent and connectivity of native vegetation, and the continued viability of priority plant and animal species<sup>43</sup>. For example, a range of plant and animal species decline noticeably when native vegetation cover is reduced below 70 per cent of its original extent, and further still when vegetation is reduced below 30 per cent of the original coverage<sup>44</sup>.

Invasive species are a major pressure on the continued viability of priority plant and animal species on both private and public lands<sup>45</sup>. For example, foxes (*Vulpes vulpes*) have contributed to the decline of medium-sized ground-dwelling native animals, and Bitou Bush (*Chrysanthemoides monilifera*) has impacted native animals and plants in coastal NSW<sup>46</sup>. Predicted shifts in climate are also likely to place major pressures on native vegetation, potentially changing habitat needs for plants and animals and exacerbating existing threats such as changes to fire and flooding regimes<sup>47</sup>.

### Status and trends (at 2010)

At the state scale:

- vegetation extent and condition is fair, and is following a predicted stable trend in condition<sup>48</sup>
- the recovery of threatened species and sustainability of fauna populations is poor for fauna populations and is following a predicted declining trend in recovery and sustainability (respectively)<sup>49</sup>.

At the CMA regional scale:

- native vegetation is in good condition in coastal and western-division CMA regions, with fair condition in the sheep and wheat belt CMA regions<sup>50</sup>
- fauna and threatened species condition ranges from very poor through to fair<sup>51</sup>.

Vegetation density and condition has recently improved across most of NSW (as measured by the Normalised Difference Vegetation Index, and as a departure from the long-term average)<sup>52</sup>. This is likely to coincide with above average rainfall that has occurred across the state<sup>53</sup>. A recent study has shown native bird populations (including threatened species) have recovered on farms in southern NSW as a result of management actions that increase native vegetation extent (such as plantings and regrowth)<sup>54</sup>.

### Examples of activities that contribute to this target

- Excluding, eradicating or managing invasive plant and animal species (including biosecurity and disease threats) on both private and public lands
- Implementing threat abatement plans
- Restoring and rehabilitating vegetation and habitats with local native species
- Mapping strategic corridor areas for vegetation improvement and revegetation (see, for example, mapping in the draft NSW Biodiversity Strategy).
- Managing invasive native scrub (as defined under the NSW *Native Vegetation Regulations 2005*)
- Managing total grazing pressure
- Implementing a comprehensive, adequate and representative reserve system.
- Targeted recovery actions to protect threatened species, populations and communities.

## Improve the extent and connectivity of native vegetation, and the condition of priority plant and animal species

### Links with key legislation and policies

- *Native Vegetation Act 2003* (NSW)
- *National Parks and Wildlife Act 1974* (NSW)
- *Forestry Act 1916* (NSW)
- *Threatened Species Conservation Act 1995* (NSW)
- *Fisheries Management Act 1994* (NSW)
- State Environmental Planning Policies (NSW)
- NSW Biodiversity Strategy – current and draft (NSW)
- Priority Action Statements (NSW)
- Biodiversity Priorities for Widespread Weeds (NSW)
- Plan to Protect Environmental Assets from Lantana (NSW)
- NSW Threat Abatement Plan: Predation by the Red Fox 2010 (NSW)
- NSW Bitou Bush Threat Abatement Plan (NSW)
- National Parks Establishment Plan (NSW)
- Invasive Species Plan 2008–2015 (NSW)
- Ecologically sustainable forest management plans (NSW)
- Australia’s Biodiversity Conservation Strategy 2010–2030 (Australian Government)
- Draft National Wildlife Corridors Plan (Australian Government)
- Draft Australia’s Native Vegetation Framework (Australian Government)
- Australian Pest Animal Strategy (Australian Government)
- Australian Weeds Strategy (Australian Government)
- Clean Energy Future Plan (Australian Government)
- Caring for our Country (Australian Government).

### Monitoring, evaluation and reporting

#### **Monitoring, evaluation and reporting programs for this target at the state scale would focus on:**

- measuring the **performance of NRM management actions** at state and regional scales in securing improvements in the extent and condition of native vegetation
- maintaining an adequate **set of core long-term datasets** to detect and evaluate the condition of, and change in, native vegetation over time; for example, woody/non-woody vegetation (an existing dataset under the current program)
- appropriately securing those datasets and **making them available** to natural resource managers and the community on demand
- developing and improving **models and forecasting frameworks** (for example, the Biodiversity Forecaster Tool and Rapid Evaluation of Metapopulation Persistence [for fauna]) to support decision making, and targeting data collection programs to verify modelling predictions
- using ancillary **datasets from other programs** – such as those established to meet agency statutory functions, for example the *Native Vegetation Act 2003* (such as change in area approved for broad-scale clearing) and the *Threatened Species Conservation Act 1997* (such as change in threatened species that are secured in the wild) – to help evaluate progress
- developing and implementing information management and technical **standards and protocols**
- implementing **collaborative monitoring, evaluation and reporting initiatives** between agencies and CMAs to support implementation of whole-of-government and community catchment action plans.

## Improve the devolution of decision making to the most capable local level

### Intent

- N** The intent of this target is to ensure continuity in the devolution principle already underpinning NRM policy in NSW<sup>55</sup>. This will ensure communities continue to have a direct say in how their landscapes are managed, and will increase the likelihood that community, land, water and vegetation targets can be achieved.
- O** NRM has been described as a ‘wicked’ public policy problem because of the complexity in balancing the many – often competing – environmental, social and economic benefits derived from natural landscapes<sup>56</sup>. NRM issues are diffuse and require local decisions across a wide range of unique social and ecological circumstances (within a state and national policy framework).
- I**
- T** In response to these challenges, governments have put in place governance arrangements that transfer decision making to a scale where NRM issues are best understood by government and communities, and where both can work together to find the most efficient and effective solutions<sup>57</sup>. These arrangements can also help facilitate detection and response to changes by those who live closest to the environment that is changing<sup>58</sup>. It is important to note that decision making in this context includes the associated information, expertise, funding and resources required to support decision making. Mindful of this decision-making support, the devolution target also encourages diverse approaches to different issues and collaborative partnerships across scales.
- U**
- L** Given this flexibility, decision makers still need to be accountable for their decisions<sup>59</sup>. In a devolved model, governments (with their agencies) set the overall policy direction, quality assurance standards and guidelines (rather than prescriptive rules and standardisation), to ensure high-quality investment and decision making at regional and local scales.
- O**
- V** State and Australian Government agencies remain primarily responsible for the development of NRM policy and programs, which are often implemented with the assistance of CMAs and others groups such as local government and Landcare.
- E** Since 2003, NSW has devolved certain NRM decision-making responsibility to CMAs, to drive flexible and innovative regional planning, investment and decision making. The model includes:
- a standard for quality NRM decision making
  - assurance mechanisms, such as regular audit and reviews, to ensure rigour and accountability for government and investors.
- D** Other important institutions operating at the local scale also contribute to NRM outcomes. For example:
- Landcare groups help connect governments directly with individual landholders to deliver on-ground projects
  - local governments make significant investments in NRM and play a major role in minimising impacts on our biophysical systems, for example through land-use planning responsibilities and on-ground activities.

## Improve the devolution of decision making to the most capable local level

### Status and trends (at 2010)

At the state scale:

- NSW's regional model for NRM is an effective mechanism for encouraging land managers to voluntarily manage their land better
- a significant yet relatively small proportion of estimated government NRM-related investment in NSW is being co-ordinated through catchment action plans; CMA investment was around \$130 million in 2009–10<sup>60</sup>.

At the CMA regional scale:

- just over half of CMAs have effectively implemented catchment action plans to a high or very high level, with the remainder at fair to medium levels
- most CMAs are effectively engaging and delivering effective on-ground works to a high or very high level with landholders and their communities; however, many need to improve prioritisation and adaptive management approaches (as audited by the NRC in 2008–09)<sup>61</sup>.

### Links with key legislation and policies

- NSW 2021 – A plan to make NSW number one (NSW)
- *Catchment Management Authorities Act 2003* (NSW)
- *Natural Resources Commission Act 2003* (NSW)
- Regional Development Australia (Australian Government).

### Monitoring, evaluation and reporting

The NRC will be responsible for evaluating and reporting progress on this target, using multiple lines of evidence including NRC catchment action plan reviews and audits.

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## References for intent tables

- 1 Brown, P. R., Nelson, R., Jacobs, B., Kokic, P., Tracey, J. Mehnaz, A. and DeVoil, P. (2010) *Enabling natural resource managers to self-assess their adaptive capacity. Agricultural Systems*, 103 (8), 562–568.
- 2 This can be a complex process – for detailed discussion, see for example Pannell, D. and Vanclay, F. eds. (2011) *Changing Land Management – Adoption of New Practices by Rural Landholders*, CSIRO Publishing, Collingwood Australia.
- 3 For a discussion on the links within this relationship, see Walker, B.H., Able, N., Anderies, J.M and Ryan, P. (2009) Resilience, Adaptability, and Transformability in the Goulburn-Broken Catchment, Australia, *Ecology and Society* 14(1): 12.
- 4 Barr, N. (2004) *Australian Census Analytical Program: The Micro-Dynamics of Change in Australian Agriculture: 1976-2001*, Australian Bureau of Statistics, Canberra, Australia.
- 5 Pratley, J. and Copeland, L. (2008) Graduate Completions in Agriculture and Related Degrees from Australian Universities, 2001–2006 in *Farm Policy Journal*, Vol. 5 (3) August Quarter 2008.
- 6 Managing Climate Variability R&D Program (2008) *Managing Climate Variability Research and Development Strategy, 2008–2014. Program: Advancing Climate Research* – a collaborative program between Grains, Rural Industries and Sugar Research and Development Corporations; the Australian Government through the Department of Agriculture, Fisheries and Forestry; Dairy Australia; Meat & Livestock Australia; and Land & Water Australia.
- 7 NSW Government (2010) *NSW State Plan Performance Report November 2010*.
- 8 *Progress towards healthy resilient landscapes – implementing the standard, targets and catchment action plans – December 2010*. Natural Resources Commission, Sydney.
- 9 *Ibid.* This analysis is based on information from 2010 NSW Government State of the Catchment reports.
- 10 McKenzie, N., Jacquier, D., Isbell, R. and Brown, K (2004) *Australian Soils and Landscapes – and illustrated compendium*, CSIRO Publishing, Collingwood Australia.
- 11 Cribb, J. (2010) *The Coming Famine – the global food crisis and what we can do to avoid it*, CSIRO Publishing, Collingwood Australia
- 12 Adapted from State of the Environment Committee (2011). *Australia State of the Environment 2011. Independent report to the Australian Government Minister for Sustainability, Environment, Water Population and Communities*. Canberra, DSEWPaC, 2011. See also McKenzie, N., Jacquier, D., Isbell, R. and Brown, K (2004) *Australian Soils and Landscapes – an illustrated compendium*, CSIRO Publishing, Collingwood Australia.
- 13 DECCW (2009) *New South Wales State of the Environment 2009*. The State of NSW and the Department of Environment, Climate Change and Water, Sydney; *Policy 0-14 - Maintaining land for agricultural industries*. NSW Primary Industries, accessed at [http://www.dpi.nsw.gov.au/\\_data/assets/pdf\\_file/0008/396458/Policy-O-104-maintaining-land-agricultural-industries.pdf](http://www.dpi.nsw.gov.au/_data/assets/pdf_file/0008/396458/Policy-O-104-maintaining-land-agricultural-industries.pdf); Mason, J (2003) *Sustainable Agriculture*, Landlinks Press, Collingwood Australia.
- 14 DECCW (2009) *New South Wales State of the Environment 2009*, the State of NSW and the Department of Environment, Climate Change and Water, Sydney.
- 15 Stone, Y., Ahern, C.R. and Blunden, B. (1998) *Acid Sulfate Soils Manual 1998*, Acid Sulfate Soil Management Advisory Committee, Wollongbar, NSW, Australia.
- 16 Department of the Environment, Water, Heritage and the Arts (DEWHA) (2008) Threat abatement plan for competition and land degradation by rabbits. DEWHA, Canberra. See also Tighe, M. Reid, N., Briggs, S. and Wilson, B. (2009) *Invasive Native Scrub (INS) Management and Soil Function*, Ecosystem Management, School of Environmental and Rural Science, University of New England: Armidale, NSW.
- 17 NSW Government (2010) *NSW State Plan Performance Report November 2010*.
- 18 *Ibid.*

---

19 NRC (2010) *Progress towards healthy resilient landscapes – implementing the standard, targets and catchment action plans – December 2010*, Natural  
Resources Commission, Sydney. This analysis is based on information from 2010 NSW Government State of the Catchment reports.  
20 Pers. Com. Greg Chapman, Theme Leader Soil Condition & Land Management within Capability MER, NSW Office of Environment and Heritage.  
21 *Ibid.*  
22 Eamus, D., Hatton, T., Cook, P. and Colvin, C. (2006) *Ecohydrology – vegetation function, water and resource management*, CSIRO Publishing, Collingwood  
Australia.  
23 ATSE (2012) *Sustainable Water Management - securing Australia’s future in a green economy*. Australian Academy of Technological Sciences and  
Engineering, Melbourne; MDBC (2001) *Rivers as Ecological Systems: The Murray-Darling Basin*, Murray-Darling Basin Commission, Canberra ACT. See also  
Harvey, N. and Caton B. (2010) *Coastal Management in Australia*, University of Adelaide Press, Adelaide, Australia; DLWC (2002) *The NSW State Groundwater  
Dependent Ecosystems Policy – a component of the NSW State Groundwater Policy Framework Document*, NSW Department of Land & Water Conservation,  
Sydney; NSW Office of Water (2012) *Our Water Our Country: An information manual for Aboriginal people and communities about the water reform process, Edition  
2.0*, NSW Department of Primary Industries, Office of Water, Sydney NSW.  
24 *Environment Protection and Biodiversity Conservation Act 1999 (Cth)*.  
25 DECCW (2009) *New South Wales State of the Environment 2009*, the State of NSW and the Department of Environment, Climate Change and Water, Sydney.  
See also State of the Environment Committee (2011) *Australia State of the Environment 2011, Independent report to the Australian Government Minister for  
Sustainability, Environment, Water Population and Communities*, Canberra: DSEWPaC, 2011.  
26 See for example, Hussey, K. and Dovers, S. eds (2007) *Managing water for Australia: the social and institutional challenges*. CSIRO Publishing, Collingwood,  
Victoria; Crase, L.(2008) *Water Policy in Australia – the Impact of Change and Uncertainty*, Resources for the Future, Washington DC USA.  
27 NSW Government (2010) *NSW State Plan Performance Report November 2010*.  
28 *Ibid.*  
29 *Ibid.*  
30 NRC (2010) *Progress towards healthy resilient landscapes – implementing the standard, targets and catchment action plans – December 2010*. Natural  
Resources Commission, Sydney. This analysis is based on information from 2010 NSW Government State of the Catchment reports.  
31 *Ibid.*  
32 Australian Government Bureau of Meteorology: Annual Climate statements: *NSW in 2011: Wet, warm year as La Nina ends and another begins*, accessed at  
<http://www.bom.gov.au/climate/current/annual/nsw/summary.shtml>.  
33 Australian Government Bureau of Meteorology: Water storages accessed at  
<http://water.bom.gov.au/waterstorage/awris/#urn:bom.gov.au:awris:common:codelist:region.city:sydney>.  
34 See for example, NSW Office of Water – *Water availability and outlook for 2102 -13 – NSW Murray and Lower Darling Rivers: Issue 1- 1 May 2012* accessed at  
<http://www.water.nsw.gov.au/Water-management/Water-availability>.  
35 See for example “Wet conditions see birds breeding across the state” in *Water for the Environment News*, NSW Office of Environment & Heritage accessed  
at <http://www.environment.nsw.gov.au/resources/environmentalwater/OEH0169WaterEnviroNews.pdf>.  
36 Eamus, D., Hatton, T., Cook, P. and Colvin, C. (2006) *Ecohydrology – vegetation function, water and resource management*, CSIRO Publishing, Collingwood  
Australia.  
37 Schnierer, S., Faulkner, A. and Fisher, C. (2001) *Aboriginal Cultural Values of The Native Vegetation of New South Wales – a background paper of the Native  
Vegetation Advisory Council of New South Wales*. Department of Land of Land and Water Conservation on the behalf of the Native Vegetation Advisory  
Council of New South Wales.

38 CBD (2000) *Sustaining life on Earth – how the convention of Biological Diversity promotes nature and human well-being*. Secretariat of the Convention on  
Biological Diversity; Natural Resource Management Ministerial Council (2010) *Australia's Biodiversity Conservation Strategy 2010-2030*. Australian  
Government, Department of Sustainability, Environment, Water, Population and Communities, Canberra.

39 As listed in schedules under the *Threatened Species Conservation Act 1995* (NSW).

40 As required under s90A of the *Threatened Species Conservation Act 1995* (NSW). Elements of the program have been foreshadowed in the Office of  
Environment and Heritage's, Draft consultation paper *The Priorities Action Statement (PAS) Program – Framework Paper for the Redevelopment of PAS*. Internal,  
unpublished document.

41 McIntyre, S., McIvor, J.G. and Heard K.M. eds (2002) *Managing & Conserving Grassy Woodlands*, CSIRO Publishing, Collingwood Australia.

42 NWCPAG (2012) *Draft National Wildlife Corridors Plan – March 2012*. A report prepared by the National Wildlife Corridors Plan Advisory Group for the  
Australian Government.

43 DECCW (2009) *New South Wales State of the Environment 2009*, the State of NSW and the Department of Environment, Climate Change and Water, Sydney.  
See also State of the Environment Committee (2011) *Australia state of the environment 2011, Independent report to the Australian Government Minister for  
Sustainability, Environment, Water Population and Communities*, Canberra: DSEWPaC, 2011.

44 McIntyre, S., McIvor, J.G. and Heard K.M. eds (2002) *Managing & Conserving Grassy Woodlands*, CSIRO Publishing, Collingwood Australia. See also James  
C. D., and Saunders D. A. (2001) *A Framework for Terrestrial Biodiversity Targets in the Murray – Darling Basin*. Sustainable Ecosystems and Murray-Darling  
Basin Commission, Canberra.

45 DECCW (2009) *New South Wales State of the Environment 2009*, the State of NSW and Department of Environment, Climate Change and Water, Sydney.

46 NPWS (2001) *Threat Abatement Plan for the Predation by the Red Fox (Vulpes vulpes)*, NSW National Parks and Wildlife Service, Hurstville; DEC (2006) *NSW  
Threat Abatement Plan – Invasion of native plant communities by Chrysanthemoides monilifera (bitou bush and boneseed)*, Department of Environment and  
Conservation (NSW), Hurstville.

47 Steffen W., Burbidge A.A., Hughes, L., Kitching, R., Lindenmayer D., Musgrave, W., Stafford Smith, M. and Werner P.A. (2009) *Australia's biodiversity and  
climate change: a strategic assessment of the vulnerability of Australia's biodiversity to climate change*, a report to the Natural Resource Management  
Ministerial Council commissioned by the Australian Government, CSIRO Publishing, Collingwood Victoria.

48 NSW Government (2010) *NSW State Plan Performance Report November 2010*.

49 NSW Government (2010) *NSW State Plan Performance Report November 2010*.

50 NRC (2010) *Progress towards healthy resilient landscapes – implementing the standard, targets and catchment action plans – December 2010*, Natural  
Resources Commission, Sydney.

51 NRC (2010) *Progress towards healthy resilient landscapes – implementing the standard, targets and catchment action plans – December 2010*, Natural  
Resources Commission, Sydney.

52 Australian Government Bureau of Meteorology, *Six-monthly NDVI Standardised Anomaly for Australia*. For the period between 1 November 2011 and 30 April  
2012. 'Vegetation' refers to all native and non-native vegetation. 'Condition' refers to the physiological health of individual plants. Information accessed at  
<http://www.bom.gov.au/jsp/awap/ndvi/index.jsp?colour=colour&time=latest&step=0&map=ndvianomsd&period=6month&area=nat>; and Australian  
Government Bureau of Meteorology *Map information – Normalised Difference Vegetation Index*, accessed at  
<http://www.bom.gov.au/climate/austmaps/about-ndvi-maps.shtml>.

53 Australian Government Bureau of Meteorology: Annual Climate statements: *NSW in 2011: Wet, warm year as La Nina ends and another begins*, accessed at  
<http://www.bom.gov.au/climate/current/annual/nsw/summary.shtml>.

---

54 Lindenmayer, D.B., Northrop-Mackie, A.R., Montague-Drake, R. Crane, M., Michael, D., Okada, S. Gibbons (2012) Not all kinds of revegetation are created equal: revegetation type influences bird assemblages in threatened Australian woodland ecosystems. *PlusOne* 7(4) available at <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0034527>; see also *Revegetation to the rescue of woodland birds*, ECOS magazine, CSIRO available at <http://www.ecosmagazine.com/?paper=EC12273>.

55 NSW Government (2011) *NSW 2021 – A Plan to make NSW number one*. See also NRC (2005) *Recommendations: state-wide standard and targets September 2005*, Natural Resources Commission, Sydney.

56 Australian Public Service Commission (2007) *Tackling Wicked Problems: A Public Policy Perspective*, Commonwealth of Australia, Canberra. See also Balint, P.J., Stewart, R.E., Desai, A. and Walters, L.C. (2011) *Wicked Environmental Problems: Managing Uncertainty and Conflict*, Island Press, Washington DC.

57 Marshall, G (2008), 'Nesting, subsidiarity, and community-based environmental governance beyond the local level', *International Journal of the Commons*, 2, 75–97. See also Ryan, S., Broderick, K., Sneddon, Y., and Andrews, K. (2010) *Australia's NRM Governance System. Foundations and Principles for Meeting Future Challenges*. Australian Regional NRM Chairs, Canberra; Chapin III, F.S., Kofinas, G.P. and Folke, C. ed.(2009) *Principles of Ecosystem Stewardship – resilience-based natural resource management in a changing world*. Springer Science and Business Media, New York, NY USA. See also *Localism Act 2011 (UK)* – legislation enacted in the United Kingdom to devolve greater powers to councils and neighbourhoods and give local communities more control over housing and planning decisions.

58 Cork, S. ed. (2010) *Resilience and Transformation – Preparing Australia for Uncertain Futures*, CSIRO Publishing, Collingwood , Victoria Australia.

59 Ryan, S., Broderick, K., Sneddon, Y., and Andrews, K. (2010) *Australia's NRM Governance System*, Foundations and Principles for Meeting Future Challenges, Australian Regional NRM Chairs, Canberra.

60 NRC (2010) *Progress towards healthy resilient landscapes – implementing the standard, targets and catchment action plans – December 2010*, Natural Resources Commission, Sydney. These are based on the NRC's audits between 2008 and 2009.

61 *Ibid.*

## **Attachment 2**

# **Key policy and evaluation questions for the revised targets**

## Goal

People working together to achieve healthy, productive, culturally vibrant and resilient landscapes

### State-wide targets for 2021

### Overarching policy & evaluation questions at the state-scale

Community	<i>Improve the capacity and engagement of natural resource managers</i>	<p><u>What do we value?</u></p> <ul style="list-style-type: none"> <li>What <b>social, economic, cultural and environmental values</b> are supported by natural resource managers with good capacity and healthy land, water and vegetation?</li> </ul> <p><u>What is the condition of our landscapes?</u></p> <ul style="list-style-type: none"> <li>What is the <b>current level</b> of community capacity, and <b>condition</b> of our land, water and vegetation? Are we <b>progressing</b> towards our targets? If not, why are our targets not being met?</li> </ul>
Land	<i>Improve soil condition</i>	<ul style="list-style-type: none"> <li>What are the <b>drivers of change, threats</b> and <b>risks</b> to achieving our targets?</li> </ul> <p><u>How effective is our management?</u></p> <ul style="list-style-type: none"> <li>How <b>effective</b> are our <b>efforts</b> in engaging natural resource managers, and improving the condition of our land, water and vegetation?</li> </ul>
Water	<i>Improve the condition of aquatic ecosystems</i>	<ul style="list-style-type: none"> <li>To <b>what extent</b> have natural resource managers adopted land and water management practices that contribute to improvements in condition of our land, water and vegetation?</li> <li>What <b>products and services</b> have we produced with our investment to improve the capacity of natural resource managers and the condition of our land, water and vegetation?</li> <li>How <b>much</b> have we invested? What has been the <b>return on our investment</b>? How effectively are we <b>leveraging</b> third-party investment?</li> </ul>
Vegetation	<i>Improve the extent and connectivity of native vegetation, and the condition of priority plant and animal species</i>	<p><u>How effective is our decision making?</u></p> <ul style="list-style-type: none"> <li>To <b>what extent</b> have NRM decisions been devolved? How <b>effective</b> has devolved NRM decision-making been? What are the <b>barriers and constraints</b>?</li> <li>To what <b>extent</b> are investments aligned with agreed NRM priorities? How can alignment with agreed NRM priorities be improved?</li> <li>Are we generating the <b>knowledge</b> we need to properly inform our decisions and manage our landscapes?</li> </ul>
Devolution	<i>Improve the devolution of decision-making to the most capable local level</i>	<p><u>Are we making a difference?</u></p> <ul style="list-style-type: none"> <li>What is the <b>gap</b> between our current efforts and what is thought to be necessary to achieve our targets (and the values they support)?</li> <li>What is the <b>risk or cost</b> of not closing the gap?</li> </ul>

## **Attachment 3**

# *Standard for Quality Natural Resource Management*



## STANDARD FOR QUALITY

# NATURAL RESOURCE MANAGEMENT

## Foreword

This Standard was first prepared by the Natural Resources Commission (NRC) for the New South Wales Government in 2005. This responsibility was assigned to the NRC under the *Natural Resources Commission Act 2003*.

During the seven years the Standard has been in use, the NRC has commissioned independent assessments of its contribution to the regional model for natural resource management as well as auditing Catchment Management Authorities (CMAs) on its implementation. This work found the original seven, inter-related components of the Standard to be useful and relevant but that there would be benefit in including a component on governance. This version of the Standard (version 2.0) includes that component.

This Standard addresses quality practice in natural resource management. It is intended to be read in conjunction with the *Guide to Using the Standard for Quality Natural Resource Management*. While it will have general application, the *Guide* will specifically assist NSW CMAs to interpret and apply the Standard.

The Standard is designed to apply to natural resource management at all scales including at the state, regional or catchment, local and property levels and importantly, to assist in identifying and delivering economic, social and environmental outcomes. Specifically, the development and implementation of Catchment Action Plans (CAPs) by CMAs must comply with this Standard under s. 13(c) and (d) of the *Natural Resources Commission Act 2003* and s. 20(2)(c) of the *Catchment Management Authorities Act 2003*. The NRC will conduct formal audits of CAPs to assess their compliance with this Standard.

In the development of this Standard, the NRC consulted widely with NSW Catchment Management Authorities, state and Australian Government natural resource management agencies, stakeholders in natural resource management including land managers and environmental interest groups, research organisations and consultants working in natural resource management.

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# **1 Introduction**

## **1.1 Title of this Standard**

This is the Standard for Quality Natural Resource Management (the Standard).

References to state-wide standards for natural resource management in NSW in the *Natural Resources Commission Act 2003* and the *Catchment Management Authorities Act 2003* are references to this Standard.

## **1.2 Scope**

The Standard addresses quality practice in natural resource management.

Additional guidance to assist Catchment Management Authorities in applying the Standard is provided in the *Guide to Using the Standard for Quality Natural Resource Management*.

## **1.3 Purpose of the Standard**

The purpose of the Standard is to give confidence to the public, government, other interested parties and to natural resource managers themselves that investment in natural resource management is cost effective, protects and improves high value natural resource assets and maximises benefits through actions which contribute to integrated outcomes at all scales. The standard does this by establishing quality processes to deliver best practice natural resource management.

Its aim is to support flexible and innovative regional planning, investment and decision-making while ensuring consistency, rigor and accountability in natural resource management.

Under the *Natural Resources Commission Act 2003*, the NRC will assess the consistency of CMA Catchment Action Plans (CAPs) with this Standard and with state-wide targets through a formal audit process. It will also audit the effectiveness of the implementation of those plans in achieving compliance with this Standard and with state-wide targets.

### **1.3.1 Prioritisation**

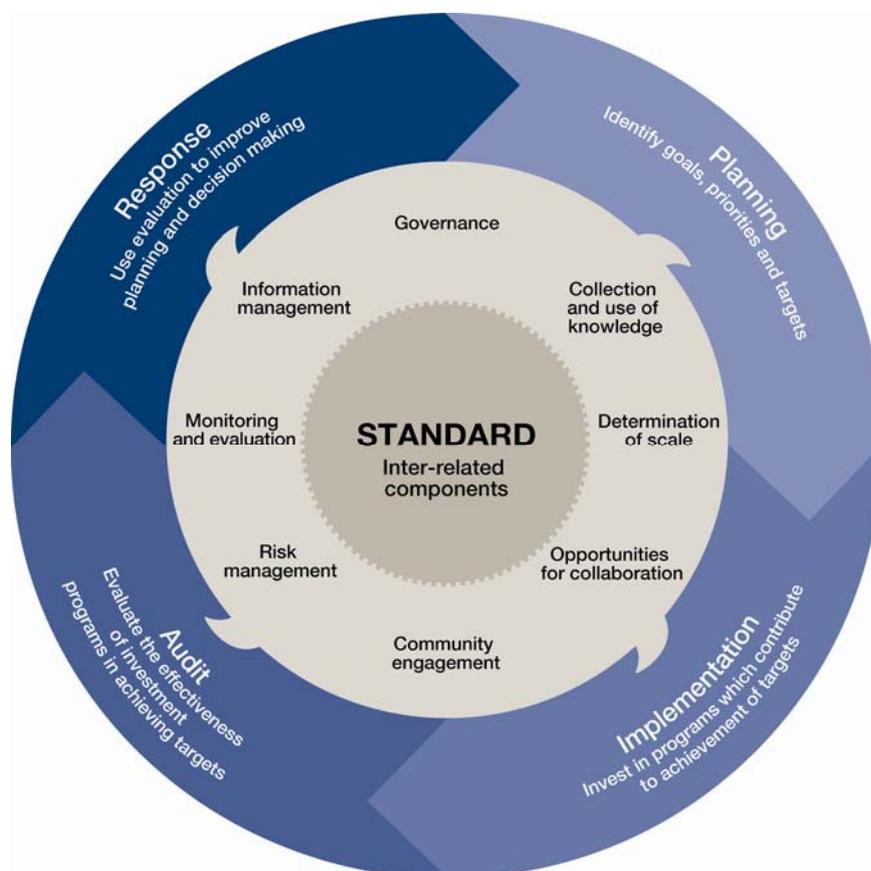
The Standard comprises a number of inter-dependent components which, when applied successfully and together, will support natural resource managers in identifying specific investment priorities and in developing methods for addressing these in the context of state-wide targets. It will promote quality and balanced social, economic and environmental outcomes at local, catchment, state and national scales through transparent decision-making and trade-offs.

### **1.3.2 Continual improvement**

Importantly, the Standard, the NRC audit process and the state-wide targets together constitute an integrated approach to achievement of natural resource management goals.

They all inform and drive the application of an adaptive management process (illustrated in Figure A1.1) by enabling natural resource managers to identify opportunities for improvement and to implement strategies for their achievement

In a similar manner and in consultation with stakeholders, the Standard itself will be the subject of a continual improvement process.



**Figure A1.1: Dynamic interaction of the Standard and adaptive management. This can apply at national, state, catchment and site scales.**

## 1.4 Who should apply the Standard?

In addition to the legal obligation that applies to CMAs, the Standard is applicable to any organisation that wishes to:

- Develop and implement natural resource management strategies in an efficient, effective and transparent manner
- Address consistency and comparability with others
- Assure itself that it is using quality processes
- Demonstrate such conformance to others, or
- Make a self-declaration of conformance with the Standard.

Such organisations may include:

- State agencies
- Local government
- Regional and community natural resource management groups
- Industry groups concerned with natural resource management, and
- Landholders.

## 1.5 Compatibility with other standards

The Standard is compatible with other national and international quality, environmental and other related standards and complements existing legislation on natural resource management. Natural resource managers are encouraged to integrate the Standard with other business management and compliance systems that they may have in place.

## 1.6 Definitions

**Continuous improvement:** a systematic approach to increasing the efficiency, effectiveness and appropriateness of any natural resource management process to achieve desired outcomes, including the revision of the desired outcomes themselves.

**Multiple benefits:** outcomes that occur when management actions deliver benefits across institutions, spatial areas, resource assets, time scales and interest groups within the community.

**Natural resource management:** for the purpose of auditing CMAs, the management of water, native vegetation, salinity, soil, biodiversity, coastal protection, marine environment (except for a matter arising under the *Fisheries Management Act 1994* or the *Marine Parks Act 1997*) forestry and any other matter concerning natural resources prescribed by the regulations, as per s. 5 of the *Natural Resources Commission Act 2003*.

**Natural resource manager:** any individual or organisation with responsibility for natural resource management.

**Resource assets:** natural resources that are valued within a community for environment, economic, social or cultural purposes.

**Scale:** the spatial, temporal or institutional dimension of any biophysical, social, economic or cultural aspect of a natural resource management issue.

**Self-declaration:** a declaration made by a natural resource manager that is not formally accredited compliance with the Standard.

**State-wide targets:** targets recommended by the Natural Resources Commission under the *Natural Resources Commission Act 2003* and adopted by the NSW Government for natural resource management in NSW.

## 2 How to use the Standard

The Standard should be used as a tool to improve natural resource management and is designed to be outcome focused. It is not prescriptive in how managers will achieve the required outcomes except when an outcome depends on the common use of an agreed protocol – for example in information management. It encourages innovation and flexibility at all scales. Importantly, it is not intended to be used as a checklist but different components should be used variably in all aspects and stages of natural resource management.

The Standard comprises eight components. These are: Governance; Collection and use of knowledge; Determination of scale; Opportunities for collaboration; Community engagement; Risk management; Monitoring and evaluation; and Information management.

Each component of the Standard specifies a mandatory *Required outcome* which defines the quality of a natural resource management practice that must be achieved.

*Guidance* is provided on how each outcome may be achieved; but it is not mandatory that the guidance be followed. Where there are other means of achieving the required outcome, natural resource managers are free to adopt strategies of their own choice, provided they can demonstrate equivalence of outcome and that the intent of the Guidance has been met.

The Standard describes *Evidence requirements* which indicate the type of objective evidence that an auditor would expect to find to demonstrate that a required outcome is being achieved, that it has been achieved in the past, and is capable of being achieved in the future. The extent of evidence provided should be commensurate with the issue being managed and the strategy being used.

The Standard should be read as a whole and not as a series of independent requirements. Each of the requirements is inter-related with the others, and compliance depends on their being used in an on-going and integrated manner.

Additional assistance, such as technical guidelines on socio-economic analysis, is provided in the *Guide to the Application of the Standard for Quality Natural Resource Management*.

## 3 The Standard

### 3.1 Governance

#### 3.1.1 Required outcome:

**Processes and behaviours establish governance excellence and ensure achievement of intended purposes, compliance with all relevant laws, codes and directions and satisfaction of community expectations of accountability, transparency and integrity.**

#### 3.1.2 Guidance:

The principles of good governance underlie all the components of the Standard and provide a clear context and rationale for the Standard as a whole.

Governance refers to the processes, systems, rules and relationships by which organisations are directed, controlled and held to account in achieving their intended outcomes and is a responsibility of leadership. Good leaders are focussed on the vision, values and goals of their organisation and to that end ensure accountability, transparency, integrity, and high standards of performance in the pursuit of those goals.

Good governance promotes confidence and support from investors and stakeholders and creates a culture of innovation while identifying and addressing emerging risks. Governance occurs at multiple linked scales and must be adaptable to respond to the requirements of a dynamic environment.

Possible steps to achieve this outcome include:

- Establish and communicate clear strategic direction and performance expectations
- Ensure accountability and leadership by developing solid foundations for all roles and responsibilities
- Promote integrity through ethical and responsible decision-making
- Promote transparency through accurate, timely and balanced internal and external reporting.

### 3.1.3 Evidence requirements:

- Strategic and business plans guide the organisation's priorities and are regularly reported against to the Board
- Board members<sup>1</sup> are confident in the organisation's leadership to set strategic directions and priorities
- Alignment of Board process with corporate plans and monitoring of organisational performance against these plans
- Clear accountabilities and delegations are established across all areas of operations
- Regular review of the effectiveness of leadership and alignment of knowledge, skills and performance with organisational needs together with a sound succession plan
- Board committees have clear terms of reference, report to the Board and support the Board's decisions
- Policies and codes of conduct are maintained and monitored to ensure ethical behaviour and control fraud and corruption
- A positive organisational culture supports organisational values and works collaboratively towards agreed goals
- The organisation's compliance with key legislation, policies, procedures and directives is routinely tested
- Setting oversight of budget and expenditure consistent with corporate plans
- Internal audit functions contribute to continual improvement and effective risk management
- Stakeholders are provided with details of the organisation's plans and priorities and the results of reviews of effectiveness
- Roles and responsibilities are devolved to the lowest capable level.

THIS IS AN INDICATIVE LIST.

Documented evidence of additional or alternative strategies may be used to achieve the required outcome.

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<sup>1</sup> Where reference is made to boards throughout this Governance component, the same processes and behaviours apply to all leadership structures.

## 3.2 Collection and use of knowledge

### 3.2.1 Required outcome:

**Use of the best available knowledge to inform decisions in a structured and transparent manner.**

### 3.2.2 Guidance:

The types of information important to quality natural resource management decisions are diverse. They frequently include: biophysical characteristics; community social and economic profiles and impact assessments; regionally relevant and scientifically supported technical guidelines; local experience and expertise; Aboriginal traditional and contemporary knowledge; community and stakeholder values; legislation, policies and strategies, cultural heritage assessments; and evaluation results.

The best available knowledge is the most current information that has wide acceptance. Knowledge will continue to develop and should be reviewed and updated as appropriate. Uncertainty should not prevent action, although any uncertainty should be made transparent and addressed through risk management and an adaptive approach.

Possible steps to achieve this outcome include:

- Ensure the broad diversity of relevant knowledge has been considered
- Identify the information applicable to each decision; including datasets, tools, references, regionally relevant technical guidance and other knowledge sources; proportionate to the potential significance of the decision
- Identify all priorities, policies, strategies and legal, social and other obligations that are already in place at a national, state or local level
- Establish mechanisms to access relevant knowledge and expertise, which may include:
  - technical or scientific working groups
  - links with research organisations
  - subscriptions to appropriate publications and circulation lists
  - attendance at appropriate conferences/seminars/field days, and
  - participation in community forums
- Keep records or minutes of consultations
- Assess and document the credibility, validity, reliability, relevance and accessibility of available information
- Research and consider the socio-economic profile of the geographical area and its key constituents
- Incorporate lessons learned from previous experiences and evaluation processes
- Keep a copy of all documented information that was used as the basis for decisions
- Record how the information was applied, including any data analysis and manipulation/interpretation tools
- Record any adaptations or assumptions made and their impact on decisions
- Identify and resolve any inconsistencies or contradictions in information
- Document any gaps in the knowledge required and identify opportunities for the proposed investment to supplement existing data.

### 3.2.3 Evidence requirements:

- Staff members are able to identify appropriate information sources
- Mechanisms to maintain technical knowledge and expertise and awareness of community issues
- Records of the identities, sources and locations of all information used and reasons for decisions on their acquisition and use
- Sample records indicate a depth and breadth of literature search and consultation commensurate with the potential level of investment and significance of the project
- Demonstrated understanding of the socio-economic profile of the area
- Sample records reflect the analysis and application of current scientific, social, economic and cultural knowledge
- Records or minutes of consultations
- Evidence of how inconsistencies or contradictions were addressed
- Evidence to demonstrate that the application of this component has informed and been informed by the application of other components

THIS IS AN INDICATIVE LIST.

Documented evidence of additional or alternative strategies may be used to achieve the required outcome.

### 3.3 Determination of scale

#### 3.3.1 Required outcome:

**Management of natural resource issues at the optimal spatial, temporal and institutional scale to maximise effective contribution to broader goals, deliver integrated outcomes and prevent or minimise adverse consequences.**

#### 3.3.2 Guidance:

Correct identification of the scale of an issue is fundamental to the effective integrated management of natural resources to maintain resilience and to make appropriate trade-offs between social, economic, environmental and cultural outcomes.

The optimal scale for management will depend on the spatial and temporal scales of natural systems and the factors influencing them, the scale that communities engage with natural resources and the scales at which individuals and organisations manage natural resources. These scales do not always align. As a result, managers may need to operate across a variety of scales to address different natural resource issues. This will have implications for the type of knowledge required, the nature of collaborative arrangements and the community engagement necessary to achieve outcomes.

Possible steps to achieve this outcome include:

- Assess the scale – spatial, institutional, temporal – relevant to each issue
- Evaluate the potential for delivery of multiple benefits – environmental, social and economic
- Consider socio-economic impacts and their implications for making trade-offs
- Assess the potential positive and negative impacts on resources and stakeholders at different scales
- Assess the potential contribution to regional or state-wide targets
- Maximise benefits by incorporating assessments of scale into project planning, implementation and review
- Learn from and/or build on previous projects and experiences
- Have regard to risk management strategies when considering impacts on stakeholders.

#### 3.3.3 Evidence requirements:

- Evidence of research and analysis of information relevant to determining appropriate scale
- Evidence of a good understanding of relevant regional, state and national issues and social and economic factors associated with scale
- Documented evidence showing that analysis of scale has meaningfully informed planning, implementation, review and making trade-offs
- Documented evidence of risk identification, evaluation and management arising from the identified scale for management
- Evidence to demonstrate that the application of this component has informed and been informed by the application of other components

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Documented evidence of additional or alternative strategies may be used to achieve the required outcome.

## 3.4 Opportunities for collaboration

### 3.4.1 Required outcome:

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

### 3.4.2 Guidance:

Collaboration with other parties is a key component of effective natural resource management. It promotes strategic alignment and the achievement of integrated outcomes at the optimal scale and can enable managers to access additional resources, properly address the needs of diverse stakeholders, minimise risks and share information.

Parties that may be involved in collaborative action include: state agencies; regional and industry organisations; local and community groups; Aboriginal communities; individual land managers; and local government. Contributions to collaborative action may include the delivery of on-ground works, access to communication networks, resources or equipment and expertise or experience in delivering particular projects.

Possible steps to achieve this outcome include:

- Apply an understanding of the physical scale of each issue and the roles, responsibilities and activities of other parties to identify those that may have a common interest
- Involve potential partners in investigating opportunities for collaboration and in planning action to optimise the management of natural resource issues at the appropriate scale
- Analyse the costs and benefits of possible collaborations
- Define and allocate roles and responsibilities appropriate to each partner's interest and capacity
- Maintain meaningful communication and coordination of collaborative arrangements appropriate to the nature of the partnership
- Define a process for the early identification and timely resolution of conflicts.

### 3.4.3 Evidence requirements:

- Evidence that collaborative arrangements are sufficient and appropriate to managing issues and maximising benefits at the appropriate scale
- Records of communication and meetings with other parties appropriate to the nature of collaborative arrangements
- Evidence that sufficient responsibility is assigned for the effective management of partnerships
- Formal or informal arrangements with other parties including MoUs or other agreements
- Evidence that the risk of insufficient or ineffective collaboration is identified early and managed or resolved in a timely manner (where necessary with the assistance of third parties)
- Evidence to demonstrate that the application of this component has informed and been informed by the application of other components

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Documented evidence of additional or alternative strategies may be used to achieve the required outcome.

## 3.5 Community engagement

### 3.5.1 Required outcome:

**Implementation of strategies sufficient to meaningfully engage the participation of the community in the planning, implementation and review of natural resource management strategies and the achievement of identified goals and targets.**

### 3.5.2 Guidance:

Community engagement is critical to the achievement of natural resource goals. Landholders, Aboriginal communities, environmental and other interest groups, government and the general community are all important stakeholders in natural resource management. Between them these groups own or manage natural resources, have experience or knowledge of natural systems, are traditional owners and maintain diverse environmental, economic, social, cultural or spiritual values.

Successful engagement strategies will build a broader understanding of community values, educate, raise awareness, enable participation, anticipate and resolve conflict and increase knowledge of the social and economic impacts of natural resource management actions. Their extent will be proportionate to the potential level of the investment and the possible socio-economic impact.

Possible steps to achieve this outcome include:

- Develop and maintain effective communication networks with all relevant and interested community groups
- Incorporate the range and diversity of community views and values in the development of goals and targets, implementation and review
- Determine the purpose and nature of engagement required to achieve the desired natural resource management outcomes for each project
- Develop and employ engagement strategies at an organisational and project level that recognise diversity within the community, are culturally appropriate, voluntary, and are appropriate to building community capacity and willingness to contribute
- Develop and implement a procedure for handling complaints in a positive and timely manner, commensurate to the extent of operation
- Monitor and evaluate the effectiveness of community engagement strategies.

### 3.5.3 Evidence requirements:

- Evidence of networks that can accommodate diversity within the community and are sufficient to support effective two-way communication
- Evidence of analysis and response to community views and issues including environmental, social and economic, cultural and spiritual values, particularly where they may be diverse, competing, negative or obstructive
- Evidence of the assessment of the effectiveness of community engagement strategies and the application of lessons learned from previous experiences
- Documented complaint handling procedures or a demonstrated intent to respond positively to complaints
- Evidence that claims will be corroborated by community representatives
- Evidence to demonstrate that the application of this component has informed and been informed by the application of other components

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Documented evidence of alternative strategies may be used to achieve the required outcome.

## 3.6 Risk management

### 3.6.1 Required outcome:

**Consideration and management of all identifiable risks and impacts to maximise efficiency and effectiveness, ensure success and avoid, minimise or control adverse impacts.**

### 3.6.2 Guidance:

Risk is a measure of the likelihood that some external factor will reduce the ability to achieve a desired outcome. In natural resource management risk can be associated with, for example, biophysical, socio-economic, institutional, technical, financial, temporal and cultural factors.

Impacts are the positive and negative consequences of management actions and may be environmental, economic, social and/or cultural.

It is important to assess risk properly and manage it appropriately. High risk does not necessarily preclude an action but rather dictates the need for a management strategy and appropriately focused monitoring and evaluation.

Possible steps to achieve this outcome include:

- Determine key environmental, economic, social, cultural and institutional risk
- Assess all risks on the basis of potential scale, probability, severity and frequency of identified impacts
- Develop prevention and management strategies for risks of all types commensurate with the significance of investment
- Be aware of all potential impacts and manage or mitigate their effects
- Regularly review risk management strategies and update when necessary
- Incorporate the consideration of risks and impacts and any relevant management strategies into monitoring and evaluation activities.

### 3.6.3 Evidence requirements:

- Records of risk and impact identification and assessment of their scale, probability, severity and frequency
- Records of the development and implementation of strategies for the management of risks and impacts, including monitoring and control protocols
- Evidence of regular review and subsequent adjustment of risk ratings and management strategies
- Evidence to demonstrate that the application of this component has informed and been informed by the application of other components

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Documented evidence of alternative strategies may be used to achieve the required outcome.

## 3.7 Monitoring and evaluation

### 3.7.1 Required outcome:

**Quantification and demonstration of progress towards goals and targets by means of regular monitoring, measuring, evaluation and reporting of organisational and project performance and the use of the results to guide improved practice.**

### 3.7.2 Guidance:

Evaluation should assess the efficiency, effectiveness and appropriateness of strategies in progressing towards catchment and state-wide targets and compliance with the Standard. Evaluation should inform ongoing management, post-program review and an adaptive approach to promoting continuous improvement in natural resource strategies.

Commitment to monitoring and evaluation programs is essential to the effective assessment of progress and will require cooperation between CMAs, agencies and other natural resource managers at different spatial, temporal and institutional scales. Data collection, management and analysis at these different scales should meet the evaluation and monitoring needs of other parties relying on the use of the data.

Possible steps to achieve this outcome include:

- In association with relevant parties identify performance indicators and information necessary to measure program success and progress towards desired outcomes
- Identify and conform with pre-determined monitoring protocols to ensure quality, objectivity, quantum, confidence levels and credibility of data
- Allocate roles and responsibilities and negotiate any contractual arrangements with third parties sufficient to ensure adequate resourcing, continuity, maintenance and review of the monitoring approach
- Implement a program of internal audit and management review to ensure compliance with this standard
- Develop and employ a procedure for using evaluation in adaptively managing the achievement of goals and targets
- Actively administer the approach to meet the organisation's own needs and to contribute to the needs of external parties
- Ensure that the development of goals and targets include monitoring and evaluation requirements.

### 3.7.3 Evidence requirements:

- Evidence of a documented monitoring and evaluation approach which encompasses all strategies and projects and audit of compliance with the Standard
- Sample documentation that indicates appropriate monitoring and evaluation design, taking into account the specific outcomes and targets being measured, the relevant variables and the prioritisation of monitoring activities on the basis of risk management
- Sample monitoring records that indicate appropriate personnel, methodology, sample sizes, records, auditing and compliance with the predetermined approach
- Sample documentation that indicates appropriate analysis of data and justification of conclusions
- Evidence that monitoring and evaluation meets the needs of the organisation and identified external parties
- Evidence of monitoring and evaluation being used as a tool for corrective and preventative action and continual improvement
- Evidence to demonstrate that the application of this component has informed and been informed by the application of other components

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Documented evidence of alternative strategies may be used to achieve the required outcome.

## 3.8 Information management

### 3.8.1 Required outcome:

**Management of information in a manner that meets user needs and satisfies formal security, accountability and transparency requirements.**

### 3.8.2 Guidance:

Effective management of information - scientific, economic, social and cultural - is critical to its utility in increasing the quality of natural resource management decisions. Information management systems should accommodate the needs of users operating at different scales and with different capacities.

Such systems will require cooperation between different organisations and agencies to ensure that information capture, storage, description and affordability satisfy user needs, respect confidentiality and facilitate useful interpretation to deliver required products.

Possible steps to achieve this outcome include:

- Design and/or implement information management systems that meet the needs of all users and that all contributors can comply with
- Identify roles and responsibilities for information collection, capture, storage, custodianship, access, use, protection and archiving
- Ensure information management is consistent with any relevant existing protocols
- Document data in a way that allows users to easily determine the suitability of information for their purposes, using the ANZLIC metadata format
- Use information in a manner commensurate with its reliability, sensitivity, intellectual property arrangements (including ownership of Aboriginal information) and commercial confidentiality
- Make information available to potential users in an easily accessible form and at a cost appropriate for the extent and importance of its potential use.

### 3.8.3 Evidence requirements:

- An information management system which meets the needs of the organisation and relevant external parties and is objectively fit-for-purpose given the scale of investment and the nature of decisions
- Evidence that the quality and integrity of data and other information is maintained through safeguards to ensure its responsible management and use
- Documentation of responses to user feedback
- Evidence to demonstrate that the application of this component has informed and been informed by the application of other components

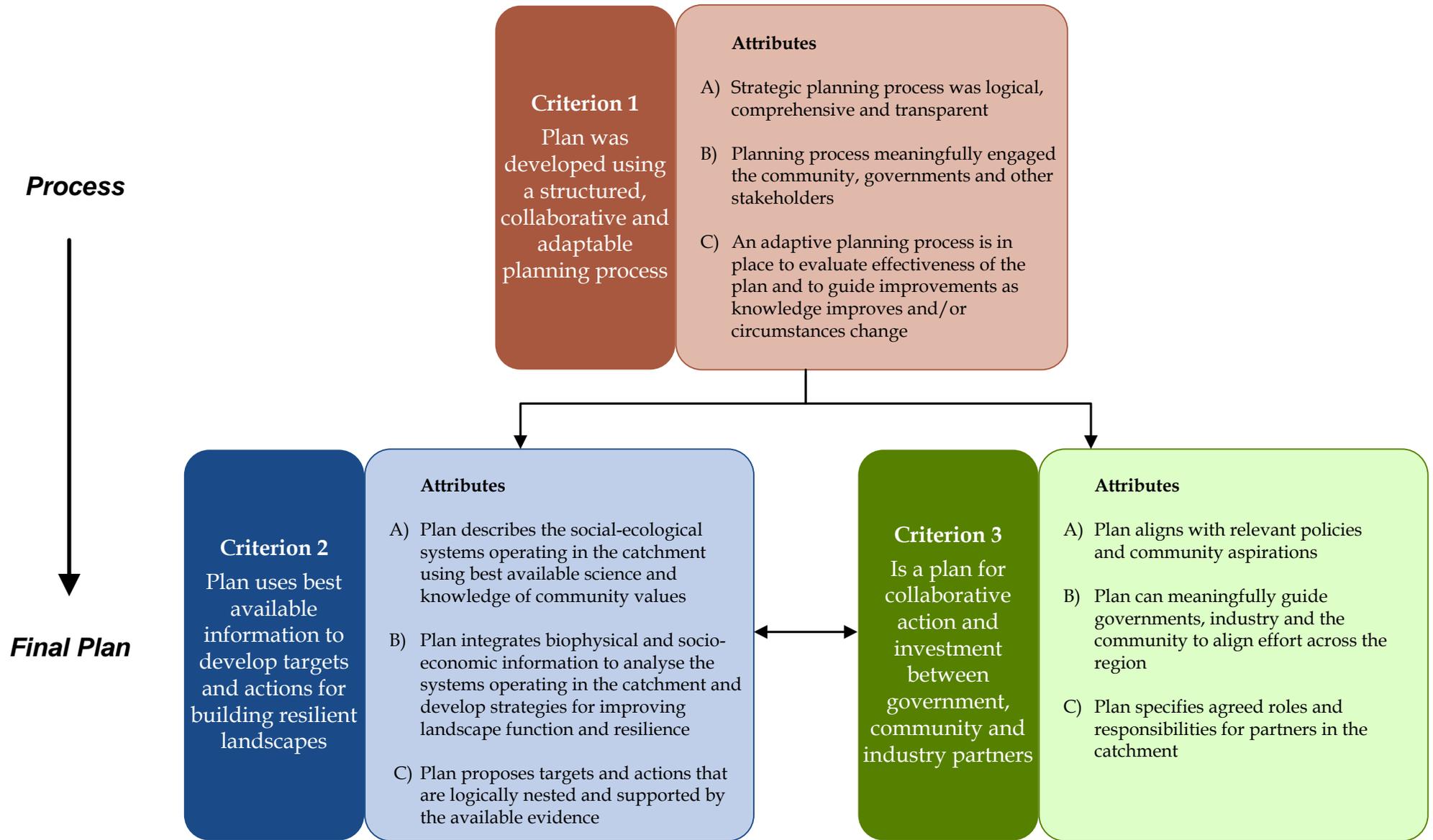
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Documented evidence of alternative strategies may be used to achieve the required outcome.



## **Attachment 4**

# **Framework for assessing upgraded catchment action plans**



**Criteria and attributes for assessing upgraded catchment action plans**



