



**Audit Report
Western
Catchment Management Authority**

December 2008



AUDIT REPORT

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Enquiries

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List of acronyms

CAP	Catchment Action Plan
CMA	Catchment Management Authority
DECC	Department of Environment and Climate Change
MER	Monitoring, Evaluation and Reporting
NAP	National Action Plan for Salinity
NHT	Natural Heritage Trust
NRC	Natural Resources Commission
NRM	Natural Resource Management
NSW	New South Wales

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1 Introduction

The Natural Resources Commission (NRC) has a statutory role to audit whether the state's 13 Catchment Action Plans (CAP) are being implemented effectively – that is, in a way that complies with the *Standard for Quality Natural Resource Management* (the Standard) and helps achieve the state-wide targets.

The NRC has completed audits of seven of these CAPs, one of which was the Western CAP. Preparing for and conducting the audits involved significant research, development and innovation, as natural resource management auditing is a new and challenging field. We greatly appreciate the patience and cooperation of all the CMAs involved. We made many refinements to our audit process along the way, and are confident that future audits will be more efficient and provide a more comprehensive picture of CMAs' performance in implementing CAPs.

The conclusions of our audit of the implementation of the Western CAP, the actions we suggest Western CMA take to improve this implementation and a summary of the CMA's response to our draft report are provided in full in Attachment 1. The purpose of this report is to promote greater understanding of Western CMA performance and to guide the CMA Board in continued improvement. The report explains:

- the audit conclusions and their significance
- how the NRC used the Standard in reaching the conclusions.

The NRC has used these conclusions, along with those of other audits and additional information, to prepare a consolidated report to the NSW Government on progress in implementing CAPs to date.¹

1.1 Focus of the audit

Although a range of government agencies have a role in implementing CAPs, the NRC focused its first seven audits on the actions of the CMAs. This is because CMAs are the lead agencies responsible for implementing CAPs.

In addition, while state-wide and CMA-level monitoring and evaluation programs are being implemented, data from these programs are not yet available. As a result, our initial audits were not able to test the contribution of CMA actions against accurate measurements of landscape-scale changes in natural resource condition that help achieve the state-wide targets. Instead, the audits focused on whether the CMA's planning, project implementation and other CAP-related activities, and the business systems that guide and support these activities, are reaching the quality benchmarks set by the Standard.

Our analysis of the audit results focused on four lines of inquiry:

1. Is the CMA effectively prioritising its investments to promote resilient landscapes that support the values of its communities?
2. Are the CMA's vegetation projects contributing to improved landscape function?

¹ Natural Resources Commission (2008) *Progress report on effective implementation of Catchment Action Plans* – November 2008. NRC, Sydney. Available at www.nrc.nsw.gov.au.

3. Is the CMA actively engaging its communities?
4. Is the CMA effectively using adaptive management?

For each of these lines of inquiry, we assessed not only whether the CMA is doing the activity, but whether it is doing it effectively – that is, by applying the most relevant elements of the Standard and achieving the required outcomes of the Standard. The NRC believes a CMA that is doing each of these four activities in a way that reaches the quality benchmarks set by the Standard has the greatest chance of achieving multiple NRM outcomes and making the highest possible contribution towards the state-wide targets.

Finally, in considering each of the lines of inquiry, we focused on CMA projects that use vegetation to improve landscape function. It was not practical to look at all CMA programs and projects given the timeframe for the audits. The NRC considers that focusing on vegetation projects was the best option, as in general these have most potential to contribute to multiple NRM targets across more than one biophysical theme (for example, improvements in river health, soil function and native species habitat).

1.2 Summary of audit findings

To conduct the audit, the NRC identified what we would expect to find if the CMA was doing each of the four activities listed above effectively. For each line of inquiry, we identified three or four criteria we would expect the CMA to be meeting. We also identified the elements of the Standard that are most relevant and important to that line of inquiry, and the CMA behaviours and other outcomes we would expect to find if the CMA is properly applying those elements of the Standard.

We then assessed the CMA's performance against these expectations using information gained by interviewing a sample of CMA Board and staff members, landholders and other stakeholders; reviewing a range of CMA and public documents; and visiting projects.

Finally, we identified the actions the CMA should take to improve its performance in implementing the CAP in compliance with the Standard.

The sections below summarise the audit findings for the Western CAP, including our expectations, our assessment of Western CMA's performance against these expectations, and the actions we suggest the CMA take to improve its performance. As noted above, the full audit conclusions and suggested actions for Western CMA are provided in Attachment 1.

1.2.1 Prioritising investments to promote resilient landscapes

If a CMA is effectively prioritising its investments to promote resilient landscapes that support the values of its communities, we would expect to find that it has a commonly understood definition of what constitutes resilient landscapes in its catchment. For example, its Board members and staff would be able to consistently explain the main natural resource assets in the catchment, and the interactions that characterise healthy landscape function. They would know the main threats to the assets and landscape function, and the environmental, economic, social and cultural value the community places on those assets and they would also agree on the options for action and how they promote resilient landscapes.

We would also expect to find that the CMA has a system for ranking investment options that uses a wide range of information about the assets and threats, and can identify the projects that

will contribute to multiple NRM targets across more than one biophysical theme. This system would be transparent, consistent and repeatable. In addition, we would expect to find that the CMA has a system to ensure its short- and long-term investments are consistent with each other and with the catchment-level targets in the CAP.

Our audit of Western CMA's implementation of the CAP found that:

- The CMA had prioritised investments to promote resilient landscapes within its region.
- The CMA had a clear definition of resilient landscapes that included community values. This definition was largely shared by the Board, staff and stakeholders, and was reflected in its project management systems and delivery programs.
- However, while the CMA had a system to rank its investment options, this system was not robust or effectively documented and this limited the consistency and transparency of its decision making.
- The CMA aimed to ensure that its short and long-term investments were consistent with each other and had largely managed to resist external pressures to distort its priorities. However, its capacity to do this was somewhat restricted by the weaknesses of its reporting systems.

The NRC suggests the Western CMA Board take a range of actions to address these issues and so improve the extent to which its implementation of the CAP complies with the Standard. These actions include:

- using the CAP review process to review and refine its definition of resilient landscapes in the Western region
- assembling and documenting all elements of its investment prioritisation processes into a system that is transparent, consistent and repeatable, and readily accessible to staff
- establishing an effective system to monitor and report on the implementation of projects.

1.2.2 Delivering projects that contributed to improved landscape function

If a CMA is effectively delivering vegetation projects that contribute to improved landscape function, we would expect its Board and staff to have a common understanding of how the short-term outcomes of its projects are expected to lead to long-term improvements in natural resource condition, and that the expected long-term outcomes are documented. We would also expect to find that its projects are achieving the expected short-term outcomes, and that the CMA has a system for identifying opportunities to further leverage the experience of its project partners to add value to the initial projects.

In addition, we would expect to find that the CMA is attracting additional funding, in-kind contributions to match government investments in projects and that it has systems in place to monitor and evaluate project outcomes over time.

Our audit of Western CMA's implementation of the CAP found that:

- The CMA had implemented projects that, in the absence of hard data, seem likely to be promoting improvement in landscape function.
- Staff and stakeholders understood the long-term goals that projects were designed to achieve and the relationships between projects' short-term outputs and expected long-

term outcomes. However, this understanding was not consistently documented, creating a risk that it will not be transferred as staff changes occur.

- Successful delivery of project outputs had resulted in significant areas of native vegetation being fenced off or subject to reduced grazing pressure, and had improved the community's appreciation of natural resource values. It seems likely that this will contribute to the achievement of state-wide targets and improve resilience within the region over time, but the extent of this contribution is difficult to quantify.
- The CMA had attracted significant 'in kind' resources to match its investments and this focus had been maintained despite external pressure to expend all available funding.
- The CMA had a system to monitor ongoing achievements of projects but this had proved inadequate and a new monitoring, evaluation and reporting plan (MER Plan) was being implemented.

The NRC suggests the CMA Board take a range of actions to address these issues. Key actions include:

- develop and document strong program logic linkages and actively monitor project outcomes to identify successful achievement
- develop and document a strategy for attracting additional investment towards the CMA's priorities that fully considers collaboration and engagement with all natural resource managers
- continue to develop and implement the MER Plan, including natural resource condition monitoring at the project scale.

1.2.3 Effectively engaging its communities

If a CMA is effectively engaging its communities, we would expect it to have identified the key community groups and stakeholders it should consider in planning and undertaking its work. We'd expect its Board and staff to have a shared understanding of these groups, including their knowledge, capacity and values, and the socio-economic and cultural opportunities and threats they pose to the successful implementation of the CAP.

In addition, we would expect the CMA to be implementing an appropriate engagement strategy for each key group in its community, which is designed to build trust in the CMA, promote two-way knowledge sharing, and ultimately achieve outcomes. The CMA would also be implementing a communication strategy that promotes collaboration, sustainable behavioural change and feedback. These strategies would be based on its knowledge of the interests, capacities and values of each group, and their communication preferences.

Our audit of Western CMA's implementation of the CAP found that:

- The CMA had used strategies to engage its community which had led to, in particular, strong one-on-one relationships with rural landholders.
- However, the CMA had largely relied on the knowledge and understanding of its Board members and staff rather than using a systematic approach to community analysis. This means that sections of the community that are not currently linked to the existing personal networks of CMA personnel could remain disconnected and not participate in the CMA's programs.

- The CMA was also communicating with the community in a way that promoted collaboration, sustainable behavioural change and feedback.

The NRC suggests the CMA Board take a range of actions address these issues. Key actions include:

- develop and document a shared understanding of the catchment's socio-economic profile
- review, monitor and continuously improve its Communication Strategy (and its component plans)

1.2.4 Effectively using adaptive management

If a CMA is effectively using adaptive management, we would expect it to have documented how it will apply the principles of adaptive management in its planning and business systems. We would expect its Board and staff to be able to explain how the CMA uses adaptive management to promote continuous learning at both an individual and institutional level. They would also be able to explain the key knowledge gaps and uncertainties related to the assets and threats in the catchment, and how the CMA manages these.

In addition, we would expect the CMA to use monitoring and evaluation systems that test the assumptions underlying its investments in improving landscape function and resilience, and use appropriate experts to assess the planned and actual outcomes of these investments. There would also be an organisational focus on applying new knowledge (gained from monitoring and evaluation or other sources) to increase the effectiveness of investments. Finally, we would expect the CMA to have and maintain information management systems that support its adaptive management processes.

Our audit of Western CMA's implementation of the CAP found that:

- The CMA demonstrated a culture of adaptive management but its application was reactive, rather than a clear proactive approach.
- The CMA had not been effectively monitoring and evaluation its natural resource outcomes but was implementing a new MER Plan which has the potential to improve its collection, management and integration of data at various scales.
- The CMA's information management systems were not integrated and could not provide the information the CMA needed to effectively plan, implement, audit and respond.

The NRC suggests the CMA Board take a range of actions to address these issues. Key actions include:

- continue to assemble and document all elements of its business systems into a clear, concise and readily accessible format for use by CMA staff
- review the CMA's risk management strategy to incorporate an effective approach to identifying and managing risks
- develop and implement a plan for improving information management.

1.3 Structure of the report

The rest of this report explains the audit conclusions and how we used the Standard in reaching those conclusions in more detail. It is structured around each of the four lines of inquiry as follows:

- Chapter 2 describes our assessment of whether the CMA is effectively prioritising its investments to promote resilient landscapes that support the values of its communities
- Chapter 3 focuses on whether the CMA's vegetation projects are contributing to improved landscape function
- Chapter 4 discusses our assessment of whether the CMA is effectively engaging its communities
- Chapter 5 looks at whether the CMA is effectively using adaptive management.

The attachments provide the full audit conclusions and suggested actions, the CMA's response, more detailed information about the audit, and an overview of the context for the audit conclusions including a summary of the key features of the Western region and CMA.

2 Prioritising investments to promote resilient landscapes

In analysing the audit findings, our first line of inquiry was to assess whether the CMA is effectively prioritising its investments to promote resilient landscapes that support the values of its communities. This line of inquiry focused on planning – the first step in the adaptive management cycle. Its aim was to assess whether the CMA has established the knowledge, understanding, systems and procedures required to undertake this step effectively, in line with the Standard.

Although the CAP itself documents the priorities in the region, the NRC recommended approval of each CAP on the basis that the CMA would continue to improve the plan's quality and potential to contribute to the state-wide targets. Therefore, the CMA cannot simply spend its funds in line with the CAP. Rather, it needs to continue to apply the Standard in implementing the CAP. This will enable it to continually refine its investment priorities as its knowledge of the landscapes and communities in its catchment improves, and its understanding of best-practice NRM evolves.

The NRC identified three criteria that we would expect a CMA to meet in order to effectively prioritise its investments in compliance with the Standard. These criteria include that the CMA has:

- a commonly understood definition of what constitutes resilient landscapes in its catchment
- a system for ranking investment options that takes account of factors such as scientific and local knowledge; socio-economic information; community and investor preferences; potential for partners to contribute matching funds or in-kind support, and potential to achieve maximum outcomes, for example, by contributing to multiple NRM targets across more than one biophysical theme
- a system that ensures that its short- and long-term investment priorities are consistent with each other, and with the catchment-level targets in the CAP.

We identified the elements of the Standard that are most relevant and important for meeting these criteria. We also identified the behaviours and other outcomes we would expect the CMA to demonstrate if it is properly using these elements of the Standard, and thus meeting the criteria to a level of quality consistent with the Standard.

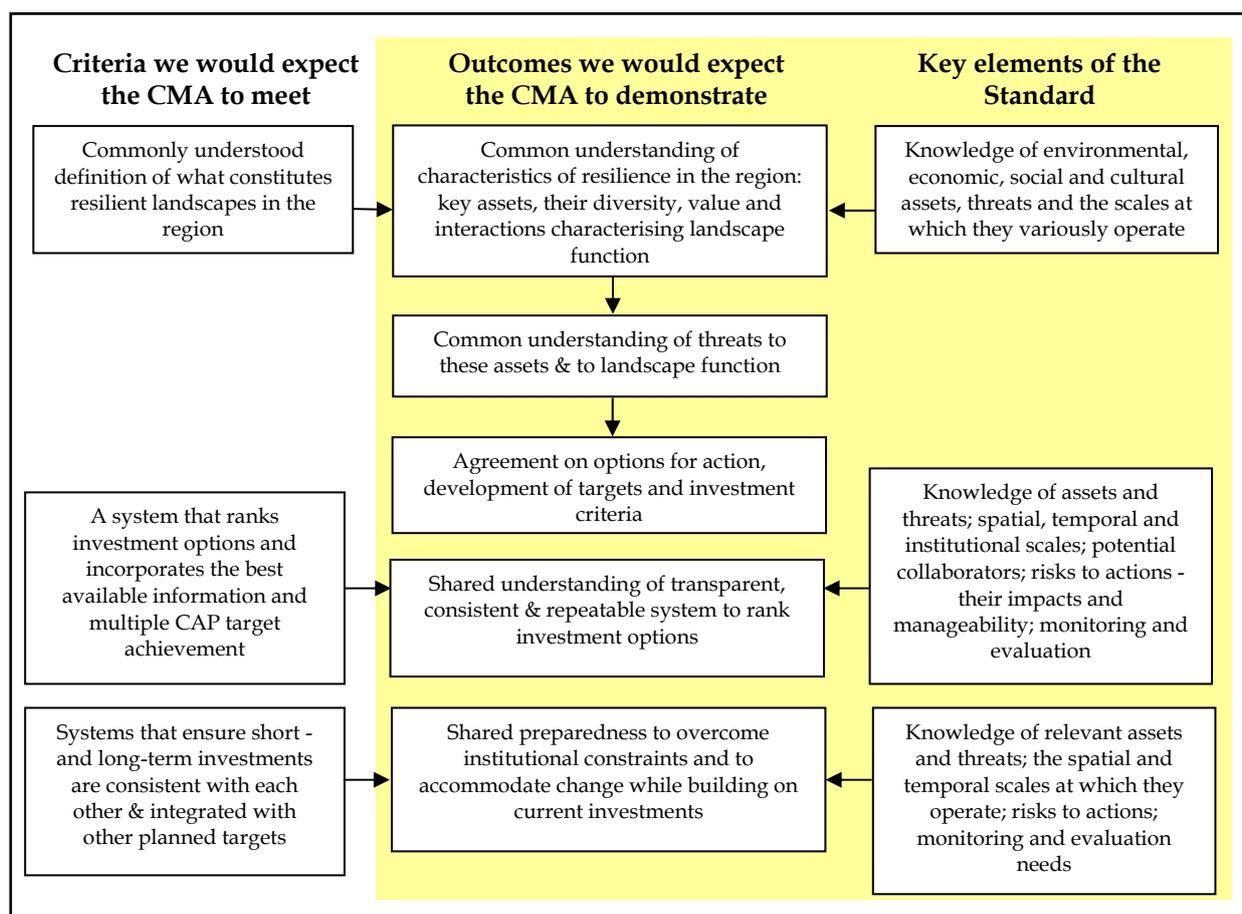
For example, if the CMA is meeting the first criterion (having a commonly understood definition of what constitutes resilient landscapes in its catchment) in a way that complies with the Standard, we would expect it to be collecting and using the best available knowledge on the natural resource assets and threats in its catchment, and on the economic, social and cultural values its community places on those assets. We would also expect it to be considering the scales at which the assets and threats operate, and determining the optimal scale at which to manage them to achieve multiple NRM benefits and integrated outcomes.

As a result, we would expect to find that its Board members and staff can consistently explain the main natural resource assets in the catchment, and the interactions that characterise healthy landscape function. We would also expect them to understand the main threats to the assets and landscape function, and the environmental, economic, social and cultural value the community places on the assets. In addition, they would agree on the options for action to

address the threats and maintain or improve the quality of the assets, and the criteria for deciding the actions in which the CMA should invest.

Figure 2.1 provides an overview of this assessment framework. The criteria we would expect the CMA to meet are shown in the left hand column, the most relevant and important elements of the Standard for meeting these criteria are in the right hand column, and the behaviours and other outcomes we would expect the CMA to demonstrate if it is using these elements of the Standard are shown in the centre column.

Figure 2.1: The framework the NRC used to assess whether the CMA was effectively prioritising investments to promote resilient landscapes



The sections below discuss each criterion, including why it is important and what our audit of the implementation of the Western CAP found in relation to it.

2.1 Commonly understood definition of resilient landscapes

NSW's aspirational goal for natural resource management is resilient landscapes – that is, “landscapes that are ecologically sustainable, function effectively and support the environmental, economic, social and cultural values of our communities”.² At its simplest, a CMA's role is to coordinate investment to improve NRM across its region and deliver outcomes that make the greatest possible contribution to the achievement of this goal. To do this, the

² NRC (2008) *Healthy landscapes and communities*. NRC, Sydney. Available at www.nrc.nsw.gov.au.

CMA must have a commonly understood definition of what constitutes resilient landscapes in its catchment – its Board and staff members need a consistent understanding of what the goal means for the particular landscapes and communities in its region.

The NRC's audit found that the Western CMA's 'vision statement' was a definition of what constitutes resilient landscapes in the Western region, and this vision demonstrated knowledge of the region's environmental, economic, social and cultural assets and the scales at which its various landscapes function.

The CMA's vision is "dynamic, viable communities and enterprises which support and sustain diverse natural environments and cultural values", and it states that its primary objectives are to "provide a statement of the community's values about the desired state and functioning of the area's natural resources".³ The original Catchment Blueprint for the Western region was developed through extensive research and consultation, which included both expert opinion and community input. This Blueprint formed the basis of the CMA's vision and the region's CAP.

The unique size and nature of Western region and its landscapes strongly influenced the CMA's delivery strategy. While over 90% of the region retains its native vegetation, much of the landscape is degraded. The CMA recognised that landholders manage the land within the catchment and defines its role as influencing these landholders to adopt changed management practices that will promote improvement in the condition of the landscape over time. The CMA accepted that, in this environment, real measurable outcomes may not be observable for many years. The CAP focused the CMA's activities on influencing four natural resource management issues in the region: managing stock grazing; controlling stock access; managing pests; and managing fire.

The NRC found that the CMA's definition of resilient landscapes (as reflected in its vision) was largely shared by its Board, staff and stakeholders, and was reflected in its project management systems and delivery programs. The CMA had organised its operations around the themes of Land and Vegetation, Rivers and Groundwater, and Biodiversity, had explicitly described the spatial priorities for each of these themes, and had listed the priority areas for each management target. However, the CMA should refine and clearly document the definition – and the way the Standard was used in developing it – as part of the CAP review process.

In respect to the Standard, the CMA:

- demonstrated it had a good understanding of the concept of resilience for their region, in particular threats to its key assets (*Collection and use of knowledge*)
- demonstrated it used its understanding of landscape function and resilience in a consistent manner to effectively develop investment criteria, targets and options for action (*Collection and use of knowledge* and *Determination of scale*).

³ WCMA (2008). *Western Catchment Action Plan 2006-2016*. WCMA, Dubbo. Available at www.western.cma.nsw.gov.au.

Box 2.1: Western CMA's use of a landscape approach to prioritise investments

Western CMA attracts funding from a range of grants and Australian, state and local government programs. These programs differ in terms of the specific natural resource issues they target, the timeframes of their funding cycles and their reporting requirements.

The CMA developed a prioritisation approach to effectively manage this complex funding environment while seeking to address multiple NRM issues across the landscape.

This approach started with the CMA determining how the landscapes in its region function, then identifying the priority spatial areas within the region for investment related to specific issues. For example, as shown on the map below, it identified the Darling River between Brewarrina and Bourke as a priority river reach for aquatic habitats.

In advance of each funding round (usually an annual cycle) the CMA sought proposals from landholders and community groups for projects that would contribute to the achievement of the Western CAP's management targets. Guidelines for applicants document the assessment criteria and scoring system that will be used to determine eligibility.

The CMA then established an assessment panel, with external representation, to review, cost and assess the project proposals, and lists them in order of priority. Once funding was announced, the CMA worked down this list, applying the available funding to the highest ranked projects until the allocated funding was exhausted.

This approach enabled the CMA to match 'targeted' funding, or funding provided for a specific purpose that reflects a particular investor priority (such as funds provided under the National Action Plan for Salinity) to projects that were consistent with that purpose. Where available targeted funding from investors was in excess of that required to achieve CAP management targets, the CMA negotiated with investors to redirect funds to other high priority areas.

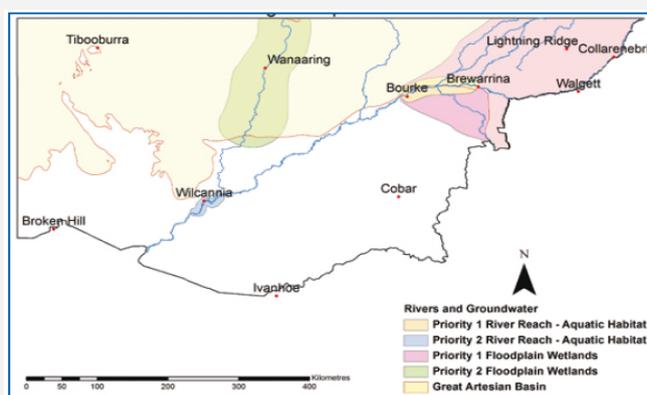
Where there were insufficient project proposals to expend the available funds, the CMA called for additional proposals which were then assessed, prioritised and undertaken over the financial year.

Having a prioritised list of projects gave Western CMA the flexibility to quickly and easily respond when it received additional funds from investors, or when it needed to reallocate funding amongst its projects. Where prolonged dry periods increased the risk of failure of particular projects, such as saltbush planting or reseeding, funds were able to be transferred to prioritised projects that involved other activities.

Western CMA's approach to investment prioritisation illustrates that the CMA has:

- considered natural resource issues and investment options at the appropriate spatial and temporal scales to maximise the contribution of its investments to CAP targets
- managed risks to maximise the effectiveness of its investments and avoid or minimise adverse outcomes.

Going forward, the CMA will need to incorporate new knowledge generated from its MER Plan into future prioritisation.



Western CMA has identified the Barwon-Darling and its floodplains for habitat maintenance, restoration and threatened species enhancement. Other priority areas include the Northern and Paroo River floodplains.

2.2 A system for ranking investment options

Our knowledge of biophysical and natural systems is incomplete and evolving. People's interactions with natural systems are also dynamic, and community values evolve over time. Because of this, CMAs need to continually seek out improvements in knowledge and adjust their focus accordingly. Their systems for ranking their investment options need to use a wide range of information – such as scientific and local information on the assets and threats in the catchment, as well as information on the values the community places on the assets, and on potential collaborators and their capacity.

In addition, CMAs have received limited government investment and have an enormous amount to achieve if we are to realise the goal of resilient landscapes. This means they need to invest these funds in ways that will make the greatest possible contribution towards as many catchment-level and state-wide targets as possible. To do this, they need a system for ranking investment options that takes account of the options' potential to contribute to multiple targets.

The NRC's audit found that Western CMA had a system that ranked investment options and incorporated the best available information and the achievement of multiple CAP targets. However, the system was not clearly documented or easily accessible, and as a consequence, was not always followed. This limited the CMA's ability to make transparent, consistent and repeatable decisions on investment prioritisation.

The CMA noted that external influences continue to challenge its ability to effectively prioritise its investment options. These influences included short-term funding allocations (that conflict with requirements to maintain a balanced budget) and continual changes to investor priorities.

Box 2.1 describes how Western CMA prioritises its investments and, in particular, how it uses a landscape approach to identify priority areas.

In respect to the Standard, the CMA:

- described how it incorporated the best available knowledge, determined the most appropriate scale for investment and considered risk at the sub-catchment planning scale (*Collection and use of knowledge, Risk management and Determination of scale*)
- could not demonstrate that the approach was transparent and consistently applied (*Collection and use of knowledge*).

2.3 Systems that ensure consistent short- and long-term investments

The time lapse between changes to the management of natural resources and the improvement in the function of natural systems can be significant. In the interim much can change, and CMAs need to accommodate this change without losing focus on the long-term objectives of their region's CAP. To do this, CMAs need systems to help them adaptively manage towards long-term targets as they learn what works and what doesn't, and as the environmental, economic, social and cultural landscapes around them change.

The NRC's audit found that Western CMA's investments were being driven by the long-term catchment-level targets for its region, and its own shorter term management targets. The CMA's Annual Implementation Plan and Investment Strategy demonstrated good alignment with the catchment-level targets. The CMA's project documentation was designed to capture

information to assess the alignment between short-term project outputs and long-term catchment-level targets. In addition, the CMA staff was able to identify the management targets to which particular projects were contributing.

The CMA aimed to ensure that its short- and long-term investments were consistent with each other, but its ability to do this was somewhat limited by the quality of its reporting systems. In addition, the audit found that the complexity of the CMA's financial management targets and funding arrangements was consuming significant resources in managing and reporting, weakening the CMA's ability to focus on long-term outcomes and impacting the CMA's planning processes.

The CMA indicated that it had relied on the expertise of key staff to advise on progress towards catchment-level targets until the implementation of improved information management systems enhanced its analysis and reporting capacity. The impact of these constraints could be reduced by strengthening the CMA's business systems.

In respect to the Standard, the CMA:

- demonstrated that current investments were aligned with the CAP's long-term goals (*Determination of scale and Collection and use of knowledge*)
- however, could not demonstrate that robust systems were in place to monitor and track alignment in a consistent manner (*Risk management and Monitoring and evaluation*).

3 Delivering projects that contribute to improved landscape function

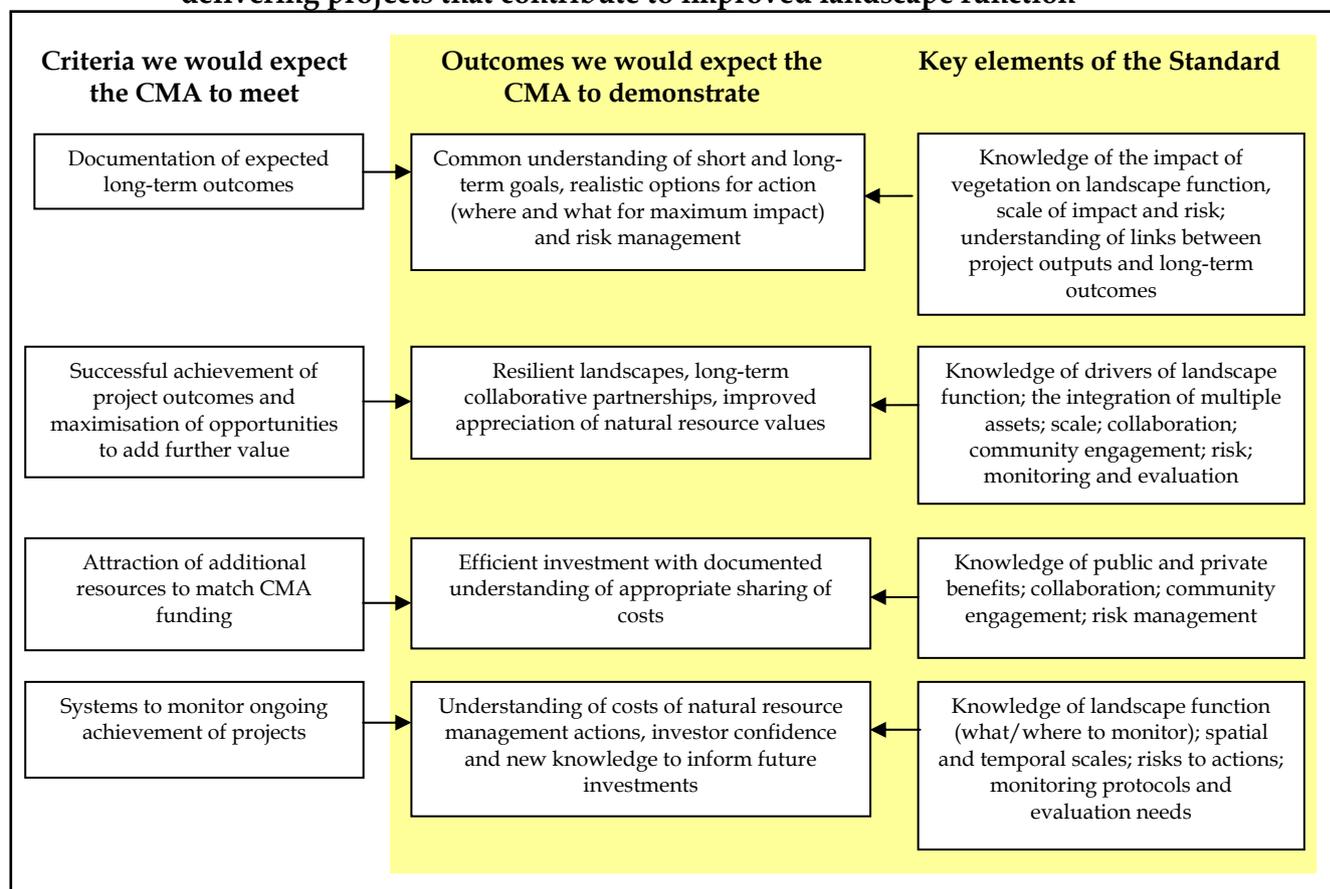
The audit's second line of inquiry assessed whether the CMA's vegetation projects are contributing to improved landscape function. CMAs should promote short-term improvements in the management of natural resources in their catchments that will contribute to long-term improvements in natural resource condition. To understand whether they are pursuing this aim in a way that meets the quality benchmarks set by the Standard, we assessed whether they were meeting four criteria. These were that the CMA:

- documents the expected long-term outcomes of projects it invests in
- is successfully achieving short-term project outcomes, and maximising further opportunities to add value
- is attracting additional resources to match its funding in projects
- has a system to monitor achievement of ongoing project outcomes.

As for all lines of inquiry, we also identified the elements of the Standard that are most relevant to meeting these criteria effectively, and the behaviours and other outcomes we would expect to see if the CMA is using those elements of the Standard. These are shown in Figure 3.1.

The sections below discuss each criterion, including why it is important and what our audit of the implementation of the Western CAP found in relation to it.

Figure 3.1: The framework the NRC used to assess whether the CMA was effectively delivering projects that contribute to improved landscape function



3.1 Documentation of expected long-term outcomes

Natural resource management is a long-term process, and it can take many years to achieve intended improvements in landscape function. In addition, our knowledge of natural systems and best practice in managing them continues to evolve, so natural resource managers need to continually adapt their actions to take account of new knowledge. The documentation of projects' expected long-term outcomes is important to help ensure projects stay on track over time. For example, it can help landholders and CMA field staff in continually managing towards those outcomes in the longer term as circumstances change.

The NRC's audit found that Western CMA staff and stakeholders demonstrated an understanding of projects' long-term expected outcomes and the relationships between projects' outputs and those outcomes. The CMA had not consistently documented this understanding, which creates a risk that this understanding may not be transferred when staff changes occur.

The CMA had documented the expected long-term outcomes in the CAP as catchment-level targets. It had also documented the shorter term management targets required to achieve these long-term outcomes in the CAP. However, there were weaknesses in how long-term expected outcomes were documented. It had not consistently documented the expected long-term outcomes of individual projects in its project files. In addition, the application forms for funding under its incentives programs only sometimes indicated the link between the project and the CMA's management targets. Further, the process used to assess projects examined the proposed long-term management methodology but did not consider the linkages between the project and its expected long-term outcomes.

In respect to the Standard, the CMA:

- demonstrated a good understanding in the logic relationships between the long-term expected outcomes and project outputs (*Determination of scale*)
- could not demonstrate that it had documentation in place to ensure the CMAs long-term vision facilitated selection of the best possible management actions with investors at the project scale (*Risk management and Community engagement*).

3.2 Successful achievement of project outcomes

CMAs' projects need to successfully achieve short-term changes in the way natural resources are managed in their region to maintain credibility with their communities and create confidence in their investors. However, as CMAs often engage with their communities on the community's terms (at least initially), they also need to seek opportunities to add greater value to the projects proposed by landholders or other stakeholders.

The NRC's audit found that Western CMA had been successful in achieving contracted project outputs. Based on visits to project sites, the auditors formed the view the CMA's projects were likely to lead to improved natural resources because there was a sound, logical relationship between the design of the projects and their expected long-term outcomes, and the work was of a good standard. For example, of the ten projects inspected:

- all were supported by strong logic assumptions, linking inputs, outputs and expected resource condition change
- all had achieved project outputs, such as fencing riparian zones.

There was also some evidence of improved natural resources condition change at the project scale but adverse climatic conditions in the recent past had impacted heavily on the rate of change.

The CMA's success in delivering projects was helping it engage landholders and establish credibility with some institutional partners. Box 3.1 describes how the CMA is working with key natural resource managers, including landholders to tackle a key threat to its natural resource assets in the region.

However, at the individual property scale, there was little evidence that CMA staff had been successful in using their relationships with individual landholders to identify opportunities to scale up single management actions, such as goat trapping, to actions that might lead to multiple outcomes on a whole-of-property scale,

Successful delivery of project outputs had resulted in significant areas of native vegetation now being fenced off or subject to reduced grazing pressure, and had improved the appreciation of natural resource values in some elements of the community. Over time, this should contribute to the achievement of state-wide targets and improve resilience within the region.

In respect to the Standard, the CMA:

- demonstrated it had built meaningful 'on-ground' relationships with project partners, including drawing on local knowledge (*Community engagement* and *Collection and use of knowledge*)
- demonstrated it had increased the communities' appreciation of natural resource values through its investment (*Community engagement*)
- could not demonstrate it had mechanisms in place to identify new opportunities to add further to existing investments (*Opportunities for collaboration*).

Box 3.1: Using collaboration to achieve project outcomes

In 2005, the Hudson Pear (*Cylindropuntia rosea*) was dubbed “the weed that’s eating the west”, as it spread across areas around Coonamble, Walgett and Lightning Ridge. Growing up to two metres tall and two metres wide, this invasive cactus species of Mexican origin has naturalised in a variety of habitats in north-western NSW. It invades and degrades land and ecosystems and, if left unchecked, continues to spread via vehicles, wildlife, livestock and water flows, with each segment growing into a new plant. It has the potential to reduce the viability of agricultural enterprises and subsequent land values, and adversely impact native flora and fauna.

Western CMA is a member of the Hudson Pear Taskforce, which is delivering projects to spray Hudson Pear infestations over 60,000 hectares around Lightning Ridge in Western NSW and increase awareness of the Hudson Pear problem among targeted sections of the community. Other taskforce members include the NSW Department of Primary Industries, Walgett Shire Council, Castlereagh-Macquarie County Council, Grawin-Glengarry Sheeppark Miners’ Association, Lightning Ridge Miners’ Association, NSW Farmers Association and local landholders.

The benefits of the Taskforce’s work include:

- stopping the spread of Hudson Pear to other areas
- protecting the floodplain from infestation following flooding
- reducing injuries from Hudson Pear spines to stock and wildlife
- promoting regeneration of native vegetation and habitat.

Western CMA contributed funding to the Taskforce’s projects through its incentive program related to the CAP management target of reducing the impact of invasive species.

The NRC audit team inspected a project site where the Glengarry Grawin Sheeppark Miners’ Association (the Association) was treating areas of Hudson Pear infestations. The Association’s representative described how, in the past, the Glengarry area was used for sheep grazing but with the spread of Hudson Pear, sheep grazing had to be abandoned.

With support of the Taskforce, the Association had identified areas of weed growth and started spraying and re-spraying to kill the weed. Photo records of the project area before and after treatment demonstrated the success of the project to date.

Western CMA’s application of incentive funding through a collaborative taskforce has helped control the spread of Hudson Pear and ongoing treatment is expected to further reduce the infestation.

The Taskforce is continuing to work with the NSW Department of Primary Industries to develop a bio-control agent to eradicate Hudson Pear from the area.



An established outbreak of Hudson Pear before it has been treated (left) and after treatment (right). The plant spreads by segments, usually carried by water, animals, people and rubber tyres.

3.3 Attraction of additional resources

To make the most of the small amount of funding CMAs have to invest in their regions, they need to look for opportunities to attract matching funding. They also need to encourage private landholders to make ongoing in-kind contributions, as this promotes resource stewardship and can increase the likelihood of landholders remaining committed to the success of the project over time.

The NRC's audit found that Western CMA had attracted significant additional 'in kind' resources to match CMA funding and considered the contribution of additional resources within its project ranking process. The funding ratios within the incentive program were typically 1:1 or 2:1 (CMA funding to landholder contribution), depending on the type of incentive.

However, the CMA did not have a clearly documented strategy to attract additional investment or processes to collect and evaluate the efficiency (through leverage) of its investment performance.

In respect to the Standard, the CMA:

- demonstrated it attracted additional resources to its investments (*Opportunities for collaboration*)
- could not demonstrate that it had mechanisms in place to systematically identify additional resources to ensure a comprehensive understanding of the appropriate sharing of costs (*Risk Management and Opportunities for collaboration*).

3.4 A system to track ongoing achievement of projects

Long-term projects to encourage resource stewardship need monitoring – particularly given the significant time lapses between investments and resulting improvements in resource condition, the gaps in our understanding of how to manage dynamic natural systems, and the unavoidable flux in social, economic and climatic conditions. Investors require reliable information that short-term targets have been met, and progress towards longer term objectives is being made.

The NRC's audit found that while Western CMA had initially included a requirement that landholders monitor ongoing achievements of projects in its incentives contracts, this had not proved to be sufficient. The CMA undertook an internal evaluation of its 2007 incentive program, which identified that changes were needed to ensure landholders fulfilled their ongoing management and monitoring responsibilities beyond the completion of on-ground works. Since the initial work, the CMA advised the NRC that it was developing a random sampling strategy to better monitor contract compliance and promote ongoing maintenance of management practices.

The CMA had also developed a comprehensive MER Plan and had begun to implement this plan (even though it was still in draft form). The early stage of implementation meant that monitoring ongoing achievements of projects tended to be inconsistent. Staff understanding of monitoring processes varied widely, project documentation did not demonstrate a consistent approach, and landholders did not demonstrate a clear and consistent understanding of monitoring requirements and their role and responsibilities.

Our audit found that the absence of a fully functioning MER system significantly limited the CMA's ability to track the ongoing achievements of its projects, and so understand the costs of natural resource management actions, promote investor confidence and acquire new knowledge to inform future investments. This reduced the likelihood that the CMA's projects will achieve their expected long-term outcomes and limited the CMA's effectiveness in promoting the state-wide targets.

The CMA strongly expressed the opinion that state agencies were responsible for monitoring at the catchment scale but no external constraints were identified that limited the CMA's capacity to monitor achievements at the project scale.

In respect to the Standard, the CMA:

- demonstrated that it was implementing review mechanisms to identify gaps and weaknesses in business systems (*Monitoring and evaluation* and *Risk management*)
- could not demonstrate, to date, a consistent approach to monitor and evaluate the effectiveness of its investments (*Monitoring and evaluation* and *Risk management*).

4 Community engagement

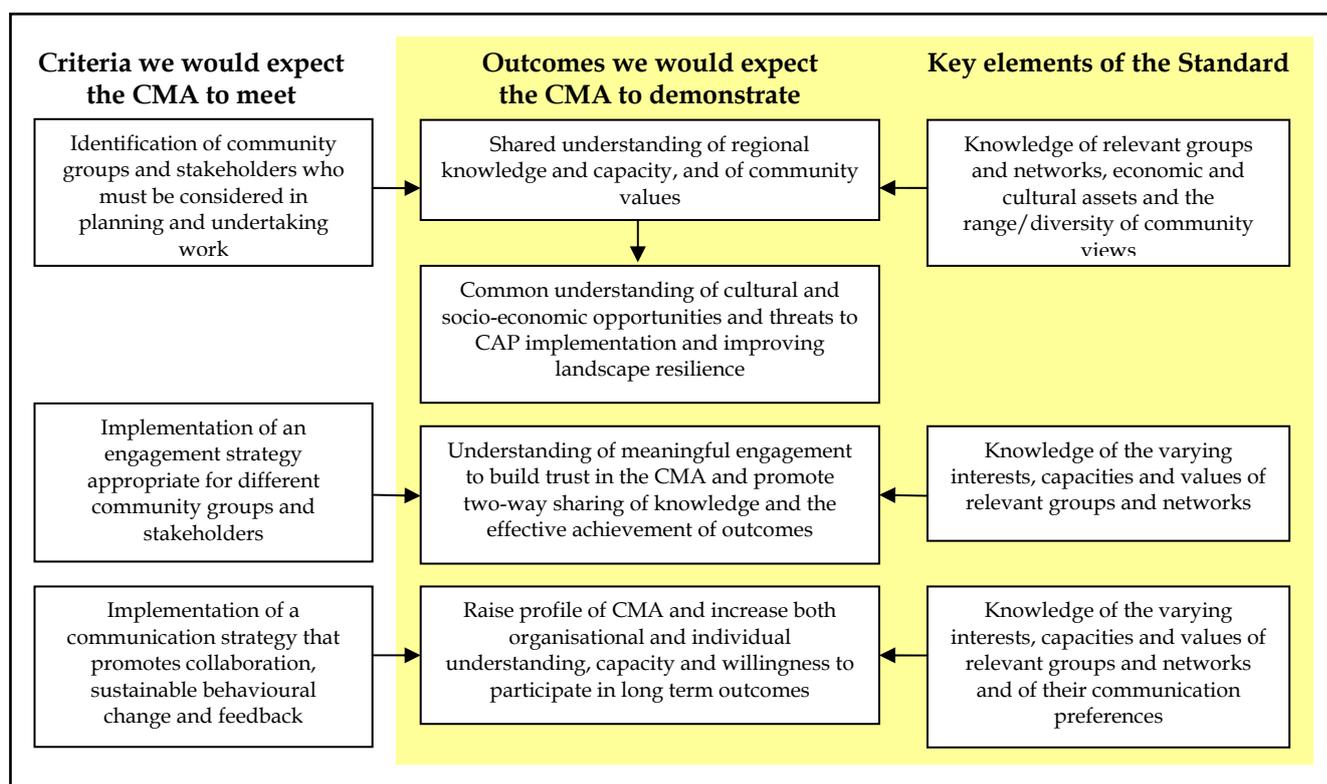
The NRC's third line of inquiry was whether the CMA is effectively engaging its communities. Given that 89 per cent of land in NSW is in private management, it is critical for CMAs to engage private landholders and other stakeholders who manage the natural resources on this land. This allows CMAs to access the local knowledge of their communities, and understand the values placed on the natural resource assets in their region. It also enables them to influence how natural resources on private land are managed, and to maximise the effectiveness of government investment in NRM by establishing collaborative partnerships with landholders and other stakeholders, and strengthening the capacity of their communities.

To assess this line of inquiry, we looked for evidence that the CMA:

- has identified the community groups and stakeholders it must consider in planning and undertaking its work
- is implementing engagement strategies appropriate for different community groups and stakeholders
- is implementing a communications strategy that promotes collaboration, sustainable behaviour change and feedback.

Each of these criteria is shown in Figure 4.1, along with the key elements of the Standard for meeting it effectively, and the CMA behaviour and other outcomes we would expect to see if the CMA was using those elements of the Standard.

Figure 4.1: The framework the NRC used to assess whether the CMA was effectively engaging its communities



The sections below discuss each criterion in more detail, including why it is important and what our audit found in relation to it.

4.1 Identification and analysis of community groups and stakeholders

A CMA's logical first step in engaging the community is to identify the key community groups and other stakeholders it must consider in planning and undertaking its work. To be effective, it also needs to understand these groups – for example, what they know about the natural resource assets and threats in the region, what is important to them, and to what extent they have the capacity to participate in NRM designed to improve landscape function. In addition, it needs to understand how these groups might present opportunities or pose threats to its ability to effectively implement the CAP and meet the catchment-level targets in the CAP. Developing and maintaining this kind of understanding requires systematic research and analysis.

The NRC's audit found that Western CMA had identified a wide range of different community groups and stakeholders it must consider in planning and undertaking work. This understanding of the region's community had been built up since the inception of the CMA from the knowledge and understanding of Board members and senior management.

The population of the region is quite small and the personal knowledge and networks of Board and staff played a key role in identifying and engaging community groups. However:

- concerns were raised during the audit that urban groups, the aboriginal community and key leaders of change had not been adequately identified or engaged
- the reliance only on individual staff and Board members for retention of knowledge and understanding of the community makes it more difficult for the CMA to build a shared understanding of regional knowledge, capacity and community values as the social fabric of the region changes.

In respect to the Standard, the CMA:

- could demonstrate a fundamental understanding of its community (*Collection and use of knowledge*)
- could not demonstrate that it used systematic analysis and research (for example stakeholder analysis) to identify the capacity of community groups to deliver NRM outcomes and the potential costs and benefits of any such collaboration (*Collection and use of knowledge*).

4.2 Appropriate engagement strategies for different community groups and stakeholders

Most regions of NSW include a variety of communities, community groups and other stakeholders which the CMA should consider in planning and undertaking its work. These groups have different knowledge and capacity for NRM, and value the region's natural resources in different ways. For example, they might include rural communities, farmers and

graziers, urban communities, Landcare groups, mining companies, tourism operators, local councils, relevant government agencies and other government institutions.

To effectively engage these diverse groups, a CMA needs to use its understanding of each group to develop an appropriate strategy for productive engagement. This requires strategic thinking, risk management and processes to identify and fill knowledge gaps.

The NRC's audit found that the Western CMA Board, management and staff could clearly describe engagement strategies that were appropriate for different community groups and stakeholders. The audit also found that feedback from these landholders who had engaged with the CMA was strongly positive.

However, while the CMA had developed and documented a Community Education and Support Strategy in 2005, the linkages between this strategy and current practices were unclear. This made it difficult for the CMA to demonstrate it was effectively engaging all community groups within its very large region.

Because of the slow rate of observable change, the CMA's ability to influence landholders depends on the level of trust between the parties. As the Western region largely comprises traditional rural communities, developing this trust requires the CMA to build and maintain strong, long-term relationships with community leaders and their networks. The CMA's approach to developing these relationships has been to establish local staff in offices spread across the catchment where they can integrate into local communities and be readily accessed by local landholders.

The audit also found that although there was evidence from landholders that the CMA's role in administering the *Native Vegetation Act 2003* constrains its ability to meaningfully engage all community groups within its region, avenues for addressing this issue were not explored in the documented Community Education and Support Strategy. In addition, a component of the Communication Strategy that specifically focused on this issue was well out of date. However, the NRC notes that a protocol to address tensions between the CMA's regulatory obligations under the Act and the requirement to provide incentives to landholders for sustainable farming is being developed by DECC on behalf of all CMAs.

Box 4.1 outlines how Western CMA effectively engaged members of its community to develop an innovative solution to tackle local threats to biodiversity and agricultural production.

In respect to the Standard, the CMA:

- demonstrated it had developed and maintained engagement networks with a range of relevant and interested community groups and individuals (*Collection and use of knowledge and Community engagement*)
- could not demonstrate that it had a meaningful strategy in place to build on its current success and promote two-way sharing of knowledge (*Community engagement and Opportunities for collaboration*).

4.3 Communication promoting collaboration, behavioural change and feedback

CMAs are also required to lead their diverse communities in understanding natural resource management. To do this, they need sophisticated approaches to communicating their messages, and for hearing and responding to the messages sent by communities. To capture the attention of diverse stakeholders such as Aboriginal communities, landholders, industry sectors, and urban and environmental organisations, their communication strategies need to reflect the varied values of their communities. This broad focus also helps to attract the widest possible funding and support across the region.

The NRC's audit found that Western CMA was communicating with the community in a way that promoted collaboration, sustainable behavioural change and feedback. The CMA used a wide range of techniques for communicating with the community, including:

- holding its bi-monthly Board meetings in different population centres and encouraging public input at its meetings
- establishing staff in geographically dispersed service delivery centres so they were able to build long-term relationships with stakeholders which in turn build stakeholders' trust and confidence in the CMA
- maintaining Aboriginal and Landcare Reference Groups
- making use of a large range of print, radio and television media outlets to get messages across.

Stakeholder feedback was strongly supportive of Western CMA and its role within the community, and indicated that reaction to the constraints imposed by the *Native Vegetation Act 2003* was lessening over time.

The audit found that soon after it was established, the CMA began developing communication and engagement strategies, policies and plans as the need for each emerged. These included:

- *Corporate Communication* – to ensure a coordinated approach to communication of corporate issues
- *Internal Communication Strategy* – to ensure consistent and accurate internal communication
- *Community Education and Support Strategy* – identifying capacity building opportunities for stakeholders
- *Western Catchment Plan Community Consultation Model* – managing stakeholder input into the development of the Catchment Action Plan
- *2005 Incentives Program Communication Strategy* – to promote awareness and understanding of the incentives program
- *Native Vegetation Act 2003 Commencement Communications Plan* – to inform stakeholders about the commencement of the Act and to encourage participation in Property Vegetation Plans (PVPs).

In late 2005, the CMA developed an overarching Communication Strategy and included the above plans and strategies as appendices. This Communication Strategy was comprehensive

and aimed to raise the profile of the CMA and increase both organisational and individual understanding, capacity and willingness to participate in achieving long-term outcomes. However, the audit found that the strategy now needs refining and updating, to ensure it is in step with actual practice.

In respect to the Standard, the CMA demonstrated it had developed communication networks and tools with community groups to increase both individual and organisational understanding and capacity and likelihood of the communities' willingness to participate in long-term outcomes (*Collection and use of knowledge* and *Community engagement*).

Box 4.1: Engaging communities to develop innovative solutions

The Buckwaroon Weedseekers project provides an example how effective community engagement by Western CMA has led to innovate solutions to one of the natural resource threats in the Western region. The CMA has used its incentive program to engage groups of landholders in tackling the threat posed by invasive native scrub (INS) to landscapes in the region.

Invasive Native Species (INS - formerly known as 'woody weeds') are native plants, but if they are not controlled they out-compete native grasses and this results in bare and easily eroded soil. However, controlling INS can be a time consuming and expensive task for individual landholders managing large areas of low-value land.

Western CMA worked with a Landcare group involving nine landholders to create a new tool to manage INS. The CMA applied \$46,000 funding to purchase a computerised spray system that could be mounted on a trailer to selectively spray targeted weed species. The Landcare group members contributed an additional \$13,000, including an estimated \$5,000 in labour time, to research and build the trailer and spray rig.

Each nozzle of the spray rig has a sensor which is calibrated to recognise INS plants based on the amount of light they reflect. In the drier months when grasses brown off, the sensors recognise the green of INS, and trigger the spray nozzles. This minimises wastage and greatly reduces the amount of pesticide required per hectare. The cost savings encourage farmers to maintain the appropriate concentrations and treat larger areas, which increases the effectiveness of the program. The Buckwaroon Weedseekers continue to add value to the CMA's investment by maintaining the equipment and managing the hiring of the rig to members.

This project demonstrates how regional bodies can successfully collaborate with natural resource managers in the region to achieve joint goals, encourage innovation, share expertise and motivate land holders to change management practices. These behavioural changes are more likely to yield durable results over the long time frames needed to produce improvement in natural resource condition in the Western region.

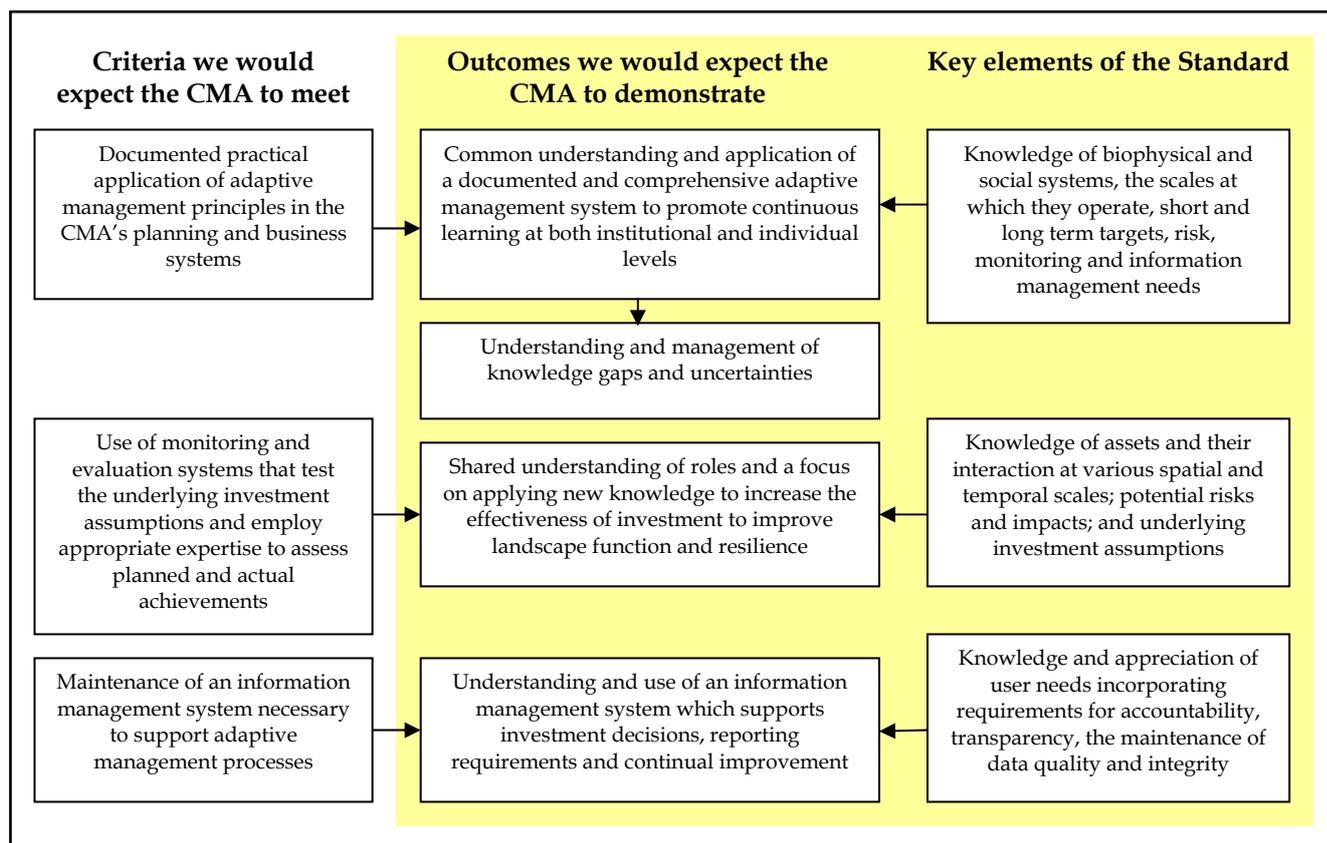
5 Effectively using adaptive management

In the fourth line of inquiry, the NRC assessed whether the CMA was effectively using adaptive management. It looked at whether the CMA:

- had documented the practical application of adaptive management principles to its planning and business systems
- had monitoring and evaluation systems that test its underlying investment assumptions and use appropriate experts to assess planned and actual achievements
- maintained information management systems necessary to support the adaptive management process.

Each criterion is shown in Figure 5.1, together with the elements of the Standard that are most relevant to meeting it effectively, and the CMA behaviour and other outcomes we would expect to see if the CMA is using these elements of the Standard.

Figure 5.1: The framework the NRC used to assess whether the CMA was effectively using adaptive management



The sections below discuss each criterion in more detail, including why it is important and what our audit found in relation to it.

5.1 Adaptive management principles in planning and business systems

Adaptive management is 'learning by doing'. It is a structured, iterative process of decision-making that is intended to gradually reduce uncertainty and improve performance through monitoring, evaluation and response. It adds transparency and accountability to decision-making and the allocation of resources, while providing a framework for learning and ongoing improvement.

At a practical level, it is important that CMAs document, within their planning and business systems, how staff can apply adaptive management principles. This will help ensure their staff and collaborators can readily apply those principles in the many, diverse circumstances in which they work.

The NRC's audit found that Western CMA had undertaken periodic reviews of some aspects of its operations including its annual investment program, incentive rounds, and broadscale projects. It had also strengthened its monitoring and evaluation system to better manage knowledge gaps and uncertainties.

The CMA considers that adaptive management is part of their business and operating culture. They had undertaken some systematic reviews (including performance reviews of Board members, the General Manager and Board functions), largely relying on the experience and competence of individuals to retain knowledge, identify risks and inform the need for adaptation.

However, the CMA's planning and business systems did not clearly document how staff could apply adaptive management principles in their work. While adaptive management practices were evident, they tended to be undertaken on a reactive basis, rather than on a planned proactive basis. This limited the ability of its Board and staff to build a common understanding of adaptive management and how it can be applied to promote continuous learning at both institutional and individual levels.

Examples of applying a proactive adaptive management approach might include:

- building in regular evaluation mechanisms at all scales across the organisation
- building program and project design to test hypotheses around landscape function
- monitoring program and project performance to test hypotheses and design future actions.

The Board expressed concern about the capacity of the CMA's current systems, in particular its monitoring and evaluation and risk management systems. The CMA had undertaken a full corporate risk assessment 18 months previously but there was no formal risk management system in place to identify risks as they emerged, implement risk management strategies and monitor their effectiveness.

In respect to the Standard, the CMA could not demonstrate a clear and consistent vision in how adaptive management will drive continual improvement in the organisation to meet internal and external needs (all components of the Standard).

5.2 Monitoring and evaluation system

To effectively apply adaptive management principles, CMAs' programs need to be designed and delivered in ways that facilitate structured learning. For example, investment programs need to record what changes to defined indicators are expected to result from the management actions within the program. Only then can CMAs undertake quantitative monitoring of these actions, and evaluate how successful they were in producing the expected changes.

It is not enough for a CMA to monitor and evaluate whether its projects have delivered the expected outputs (eg, that the expected quantity of native grasses were planted, or that the expected kilometres of fencing was installed). It also needs to test whether or not the assumptions about how each management action would lead to changes in landscape function were correct and so resulted in these changes (for example whether fencing and revegetation of a riparian zone resulted in improved water quality and riverine ecosystem health). In addition, the CMA needs to use experts with appropriate skills and knowledge in assessing its planned and actual results. This will allow it to apply new knowledge – gained from the monitoring and evaluation process and other sources – to increase the effectiveness of ongoing and future projects in improving landscape function and resilience.

The NRC's audit found that Western CMA had recognised that its existing processes for monitoring and evaluating the outcomes of its investments were not sufficiently effective. To address this, it was developing and implementing a new MER Plan with the potential to improve its collection, management and integration of data at various scales. The CMA was also negotiating agreements with several agencies to establish baselines.

At the time of the audit, the CMA had incorporated monitoring and evaluation into its incentives program by requiring applicants to specify how they would monitor and evaluate their project. Data relating to outputs was collected and stored by project officers. This included 'before and after' photos, transect and step point data, and vegetation assessments. For some projects, it also included management action and rainfall data.

However, the data collected by landholders over the previous three years had not been entered into the CMA's new Land Management Database (LMD) and Western Information Management System (WIMS). Therefore, it could not be used evaluating projects and reporting on outcomes.

The audit found that the lack of an effective monitoring and evaluation system undermined the CMA's ability to improve its understanding of landscape function and the risks that underlie investment decisions. It also reduced the CMA's ability to evaluate on-ground investments and adaptively manage its projects to promote more effective progress towards the state-wide targets over time.

Box 5.1 describes some of the challenges and issues the CMA has faced in developing its MER Plan.

In respect to the Standard, the CMA could not demonstrate, to date, a consistent approach to monitor and evaluate the effectiveness of its investments (*Monitoring and evaluation and Risk management*).

Box 5.1: Meeting the challenges of monitoring and evaluation

When CMAs were established, they received Ministerial guidance that they should spend 80% of their funding on project delivery, 15% on administration, and 5% on monitoring, evaluation and reporting (MER). This spending ratio policy was intended to emphasise the importance of on-ground project delivery.

However, by limiting the investment CMAs can make in building effective systems and encouraging the maximum possible investment in on-ground projects, the policy has made it difficult for them to establish effective MER systems. For example, the 5% of the Western CMA's budget that can be allocated to MER has to be spread very thinly to monitor resource condition change across a geographic area equivalent to 30% of NSW.

To comply with the policy, Western CMA chose to develop its MER system incrementally. Rather than design a new system from scratch, it has built on processes that were well established in existing programs (such as the Rangelands Assessment Program maintained by former government agencies). The CMA also sought to share the responsibility for monitoring, by building into its contracts specific responsibilities for landholders. These included requirements to establish monitoring points, to undertake yearly assessments of ground cover and forward these records to the CMA for analysis and storage.

The CMA recognised that these were only parts of an effective MER strategy and so as resources became available it has continued to develop a comprehensive MER Plan that would eventually lead to effective monitoring across the region.

At the time of the audit, the CMA had:

- almost completed the development of its MER Plan
- commenced implementation of some components of the Plan, including the entering of project data into the newly established Land Management Database (LMD)
- reviewed the contracting process to strengthen landholders' monitoring responsibilities
- entered into a contract with DECC to establish vegetation baselines
- commenced negotiation of a contract to establish riparian health baselines.

While the decision to develop the system incrementally suited the resources allocated to MER, it has weakened the ability of the CMA to manage the risks of project failure, and to evaluate the success of on-ground investments. These impacts have also occurred more broadly, where delays in establishing an effective MER system for NSW have hampered efforts to report successfully natural resource condition improvement, and therefore secure greater investment in NRM.

Once baselines are established, the CMA hopes that its monitoring and evaluation system within the MER Plan will begin to provide the information necessary to monitor investment performance against the targets set out in the Western CAP, and the state-wide NRM targets.

5.3 Information management systems that support adaptive management

CMAs need relatively sophisticated information management systems to support adaptive management. For example, these systems need to keep track of the changes in landscape function expected as a result of the management actions within a project, and provide ready access to this and other necessary information when the project is being evaluated and decisions on improving its effectiveness are being made. These systems also need to keep track of new knowledge that is derived from the monitoring and evaluation process and other sources, so this can be used in making decisions.

The NRC's audit found that the CMA's primary information management systems were operated independently and therefore could not be used collectively to provide the CMA Board and staff with accurate and timely information for strategic and operational decision-making.

The CMA anticipated that this issue would be addressed to some extent when it fully implements its WIMS and LMD information systems. However, at the time of the audit, the data linkages were neither well documented nor integrated.

Furthermore, CMA access to data in the externally supported LMD and training of CMA staff in the use of the database were both limited. The inadequate provision of effective information management systems and training by external agencies had enhanced the difficulties faced by the CMA in establishing and maintaining the systems necessary to support adaptive management processes.

In respect to the Standard, the CMA:

- demonstrated it had implemented information management that met some of the needs of the CMA and external parties (*Information management*)
- could not demonstrate that it had safeguards in place to ensure the quality and integrity of data was maintained (*Information management*)
- could not demonstrate that it had strategies in place to minimise continued risks of poor performance in third party service level agreements (*Risk management*).

Attachment 1 Conclusions, suggested actions and CMA response

This Section provides a table summarising conclusions of our audit of the implementation of the Western CAP, the actions we suggested the CMA take to improve this implementation and a summary of Western CMA's response to these suggested actions. The NRC expects the CMA Board to monitor the completion of these actions and may review these activities in future audit work.

CONCLUSIONS	SUGGESTED ACTIONS	CMA RESPONSE
Line of inquiry #1 - Has CMA effectively prioritised its investments to promote resilient landscapes that support the values of its communities?		
<p>Criteria 1.1: <i>whether the CMA had a commonly understood definition of what constitutes resilient landscapes in their region.</i></p> <ul style="list-style-type: none"> ▪ The CMA had a commonly understood definition of what constitutes resilient landscapes in the Western region that demonstrated knowledge of environmental, economic, social and cultural assets and scales at which the region's various landscapes function. 	<p>The NRC suggests that the CMA take the following action:</p> <ol style="list-style-type: none"> 1. Use the CAP review process to review and refine their definition of resilient landscapes in the Western region. 	<p>Western CMA agrees with the NRC's suggested action. The CMA's CAP review will refine a definition of resilient landscapes.</p> <p>The CMA will complete this action by November 2009.</p> <p>The CMA has identified the Australian Government's new funding program, <i>Caring for our Country</i> may delay the CMA's CAP review.</p>
<p>Criteria 1.2 : <i>whether the CMA had a system that ranked investment options, which incorporated the best available information and multiple CAP target achievement</i></p> <ul style="list-style-type: none"> ▪ The CMA did have a system that ranks investment options and incorporates the best available information and multiple CAP target achievement. However, this system was disjointed and poorly documented and there was evidence it was not always followed. Consequently the CMA did not evidence a shared understanding of transparent, consistent and repeatable prioritisation. ▪ There was evidence that external influences such as short-term funding allocations that conflict with Net Cost of Service (NCOS) requirements and continual changes to investor priorities added to the difficulty the CMA faced in effectively prioritising its investment options. 	<p>The NRC suggests that the CMA take the following action:</p> <ol style="list-style-type: none"> 2. Assemble and document all elements of its prioritisation processes into a system that is transparent, consistent and repeatable and readily accessible to staff while ensuring that the Minister's conditions of CAP approval are addressed appropriately. 	<p>Western CMA agrees with the NRC's suggested actions. The CMA will assemble all elements into an electronic accessible system.</p> <p>The CMA will complete this action by April 2009.</p>

CONCLUSIONS	SUGGESTED ACTIONS	CMA RESPONSE
<p>Criteria 1.3 : <i>whether the CMA had a system that that ensures short and long term investment priorities are consistent with each other and integrated with other planned NRM targets</i></p> <ul style="list-style-type: none"> ▪ The CMA had endeavoured to ensure that short and long term investments were consistent with each other but this was limited by the quality of its reporting systems. ▪ External constraints such as short term funding priorities, financial administrative requirements (NCOS), and limited information management support have negatively impacted the CMA's planning processes. This impact could be reduced by strengthening the robustness of the CMA's business systems. 	<p>The NRC suggests that the CMA take the following action:</p> <ol style="list-style-type: none"> 3. Establish an effective system to monitor and report on the implementation of projects and inform the CMA's progress toward agreed long term goals. 	<p>Western CMA agrees with the NRC's suggested actions. The CMA will continue to develop LMD, WIMS, Objective and IMPS systems to properly reflect consistency of short and long term priorities.</p> <p>The CMA will complete this action by April 2009.</p> <p>Western CMA notes additional support from relevant NSW Government agencies may be required to integrate these systems.</p>
<p>Line of inquiry #2 – Have the CMA's vegetation projects contributed to improved landscape function?</p>		
<p>Criteria 2.1: <i>whether the CMA had documented expected long-term project outcomes</i></p> <ul style="list-style-type: none"> ▪ While CMA staff and stakeholders demonstrated an understanding of long term goals and an understanding of the relationship between expected outcomes and project outputs the CMA did not consistently document expected long term outcomes. This means there is a risk that as staff changes occur, understanding of the expected long term outcomes may not be transferred. 	<p>The NRC suggests that the CMA take the following actions:</p> <ol style="list-style-type: none"> 4. Follow-up program logic training by reviewing the logic used for CAP targets and then document expected long term outcomes in project documents. 5. Continue to improve planning and project documentation (e.g. CAP, project proposal and contract specification) to improve shared CMA-wide understanding of long term outcomes expected from projects and the relationship between expected outcomes and project outputs. 	<p>Western CMA agrees with the NRC's suggested actions. The CMA will update its MER Plan to contain program logic which will also underpin the CAP review.</p> <p>The CMA will complete this action by November 2009.</p> <p>Western CMA agrees with the NRC's suggested action. The CMA will improve planning and project documentation to improve shared CMA-wide understanding of long term outcomes expected from projects and the relationship between expected outcomes and project outputs.</p> <p>The CMA will implement this as an ongoing action.</p>

CONCLUSIONS	SUGGESTED ACTIONS	CMA RESPONSE
<p>Criteria 2.2 : <i>whether the CMA successfully achieved project outcomes, and maximised opportunities to add further value</i></p> <ul style="list-style-type: none"> ▪ The CMA had been achieving contracted outputs which were gradually improving the condition of natural resources at the project scale but the methodology for reviewing project outcomes and identifying and taking up new opportunities to add further value was not systematic. ▪ Successful delivery of project outputs had resulted in significant areas of native vegetation now being fenced off or under reduced grazing pressure and had improved appreciation of natural resource values within elements of the community. This should contribute toward achievement of state-wide targets and improve resilience within the region over time but the extent of this is difficult to determine. 	<p>The NRC suggests that the CMA take the following action:</p> <p>6. Develop and document strong program logic linkages and actively monitor project outcomes to identify successful achievement. This documented and active use of knowledge of drivers of landscape function can then be used to maximise opportunities to add further value.</p>	<p>Western CMA agrees with the NRC's suggested actions. The CMA will update its MER Plan based on program logic. MER output will inform the review of targets and continue to validate program logic.</p> <p>The CMA will implement this as an ongoing action</p>
<p>Criteria 2.3 <i>whether the CMA's projects were attracting additional resources to match CMA funding</i></p> <ul style="list-style-type: none"> ▪ The CMA had attracted significant additional 'in kind' resources to match CMA funding and considered the contribution of additional resources within its project ranking process. ▪ The CMA had used the strength of its prioritisation system to accommodate the need to meet externally imposed expenditure targets while maintaining its focus on long term priorities and continuing to attract additional resources. 	<p>The NRC suggests that the CMA take the following actions:</p> <p>7. Develop and document a strategy for attracting additional investment towards the CMA's priorities that fully considers collaboration and engagement with all natural resource managers, including the Aboriginal and urban communities. This strategy needs to include mechanisms for assessing costs and benefits and identifying risks.</p> <p>8. Develop and implement effective mechanisms to measure, analyse and report on additional resources attracted to match CMA funds.</p>	<p>Western CMA agrees with the NRC's suggested action. The CMA will develop and document a strategy for attracting additional investment towards the CMA's priorities, including all considerations described in the suggested action.</p> <p>The CMA will complete this action by January 2010.</p> <p>Western CMA notes that the Australian Government's new funding arrangements focus on more collaborative arrangements.</p> <p>Western CMA agrees with the NRC's suggested actions. The CMA's WIMS will capture the extent of in-kind and matching funding.</p> <p>The CMA has implemented WIMS and will continue on-going improvement to the system.</p>

CONCLUSIONS	SUGGESTED ACTIONS	CMA RESPONSE
<p>Criteria 2.4 <i>whether the CMA had a system to monitor ongoing achievement of project:</i></p> <ul style="list-style-type: none"> ▪ The absence of an effectively implemented MER system significantly limited the ability of the CMA to understand the costs of natural resource management actions, promote investor confidence and acquire new knowledge to inform future investments. This reduced the likelihood that expected long-term outcomes will be achieved and limited the CMAs effectiveness in promoting the state-wide targets. ▪ No external constraints were identified that limited the CMA's capacity to monitor achievements at the project scale. 	<p>The NRC suggests that the CMA take the following actions:</p> <p>9. Continue to develop and implement the MER Plan, including natural resource condition monitoring at the project scale.</p> <p>10. Establish a mechanism to monitor ongoing contractual compliance beyond the completion of on ground works and adopt the recommendation⁴ in The Evaluation Report, November 2007 that a WCMA policy is required to better manage landholders' compliance with their contractual obligations.</p>	<p>Western CMA agrees with the NRC's suggested actions. The CMA will continue to develop and implement it <i>Monitoring, evaluation and reporting plan</i> including natural resource condition monitoring at the project scale.</p> <p>The CMA will implement this as an ongoing action.</p> <p>Western CMA agrees with the NRC's suggested actions.</p> <p>The CMA notes that it generally considers compliance as a contract management issue rather than a monitoring, evaluation and reporting issue.</p> <p>Western CMA will complete this action by April 2009. The CMA's Compliance Policy, Contract Manual and Project Management Manual are nearing final draft stage.</p>
<p>Line of inquiry #3 - Has the CMA effectively engaged its communities</p>		
<p>Criteria 3.1 <i>whether the CMA had identified community groups and stakeholders it must consider in planning and undertaking work</i></p> <ul style="list-style-type: none"> ▪ The CMA had identified a range of different community groups and stakeholders it must consider in planning and undertaking work. However these were not documented and there were differing opinions particularly among Board members as to whether all relevant groups were being engaged. ▪ There were no apparent external constraints impacting on the CMA's 	<p>The NRC suggests that the CMA take the following action:</p> <p>11. Develop and document a shared understanding of the catchment's socio-economic profile; including identifying important community groups and networks and the range and diversity of their views.</p>	<p>Western CMA agrees with the NRC's suggested action. The CMA will update its socio-economic profile and will be used as base planning document.</p> <p>The CMA has started a socio-economic study and will complete this action by July 2009.</p> <p>Western CMA notes that it also uses other</p>

⁴ Recommendation 6, "A WCMA policy is required to outline the repercussions for landholders who do not meet their contractual requirements. This includes the: completion of projects, maintenance of infrastructure, submission of MER requirements and maintenance of project outcomes (ie groundcover)"

CONCLUSIONS	SUGGESTED ACTIONS	CMA RESPONSE
<p>ability to identify community groups and stakeholders it should have considered in planning and undertaking work.</p>		<p>(past) profile work such as a DNR Catchment Profile, a Two Ways Together Report, and a NLWRA Socio-Economic profile for Darling Riverine Bioregion.</p>
<p>Criteria 3.2 <i>whether the CMA was implementing an engagement strategy appropriate for different community groups and stakeholders</i></p> <ul style="list-style-type: none"> ▪ The CMA Board, management and staff clearly described an engagement strategy appropriate for different community groups and stakeholders. However linkages between the described strategy and the documented Community Education and Support Strategy were not explicit. Feedback from those landholders who had engaged was strongly positive but the CMA could not demonstrate it was effectively engaging all community groups within this very large region. ▪ There was evidence from landholders that the CMA's role in administering the <i>Native Vegetation Act 2003</i> constrains its ability to meaningfully engage all community groups within its region. The CMA had taken a proactive approach and the Communications Plan contained a component specifically targeted at building an understanding of the impacts of the Act. 	<p>The NRC suggests that the CMA take the following action:</p> <p>12. Review, monitor and continuously improve its Communications Strategy including 'Appendix D Community Education and Support Strategy' in accordance with actions detailed in the strategy itself. This will enable the CMA to evaluate the appropriateness of its approach to date and refine its strategy to increase the engagement of community groups and stakeholders.</p>	<p>Western CMA agrees with the NRC's suggested action. The CMA will Review, monitor and continuously improve its Communications Strategy, including all considerations described in the suggested action.</p> <p>The CMA has started this review and will complete this action by July 2009.</p>
<p>Criteria 3.3 <i>whether the CMA was implementing a communications strategy that promotes collaboration, sustainable behavioural change and feedback</i></p> <p>The NRC considers that:</p> <ul style="list-style-type: none"> ▪ The CMA was communicating with the community in a way that promoted collaboration, sustainable behavioural change and feedback. ▪ The CMA's Communication Strategy was comprehensive and was aimed at raising the profile of the CMA and increasing both organisational and individual understanding, capacity and willingness to participate in long term outcomes. 	<p>The NRC suggests that the CMA take the following action:</p> <p>13. Review the Communication Strategy, including 'Appendix G Native Vegetation Act 2003 Commencement - Communication Plan', to ensure it is relevant, effective and accessible to staff and further enhances the effective implementation of the <i>Native Vegetation Act 2003</i>.</p>	<p>Western CMA agrees with the NRC's suggested action. The CMA will review its Communication Strategy, including all considerations described in the suggested action.</p> <p>The CMA has started this review and will complete this action by July 2009.</p> <p>Western CMA notes it is likely to be drawn to more collaborative projects due to the Australian Government's new funding arrangements.</p>

CONCLUSIONS	SUGGESTED ACTIONS	CMA RESPONSE
Line of inquiry #4 - Has the CMA effectively used adaptive management		
<p>Criteria 4.1 <i>whether the CMA had documented the practical application of adaptive management principles in its planning and business system</i></p> <ul style="list-style-type: none"> ▪ The CMA had undertaken systematic reviews of some aspects of its operations but its planning & business systems did not evidence documented practical application of adaptive management principles nor did they meet the Minister's conditions of CAP approval. ▪ The CMA did maintain a number of adaptive management practices but these tended to be reviews undertaken on a reactive basis. ▪ The CMA had recently been strengthening its monitoring and evaluation system to better inform knowledge gaps and uncertainties. However, the lack of documented systems inhibited the CMA Board and staff's ability to build a common understanding & application of comprehensive adaptive management and to promote continuous learning at both institutional & individual levels. 	<p>The NRC suggests that the CMA take the following actions:</p> <p>14. Incorporate a strategy for CMA-wide understanding and active use of adaptive management into the development of robust overarching business systems. This would involve building adaptive management principles, such as feedback loops and planning for review and improvement, into the CMA's business systems including planning and investment.</p> <p>15. Review the CMA's risk management strategy to incorporate an effective approach to identifying and managing risks.</p>	<p>Western CMA agrees with the NRC's suggested action. The CMA will document existing adaptive management practices. The CMA will complete this action when time and resources permit.</p> <p>Western CMA agrees with the NRC's suggested action. The CMA will undertake a corporate risk assessment. The CMA has indicated this is a priority action and will complete the action by July 2009</p>
<p>Criteria 4.2 <i>whether the CMA had monitoring and evaluation systems that test underlying investment assumptions and employ appropriate expertise to assess planned and actual achievement</i></p> <ul style="list-style-type: none"> ▪ The CMA had not been effectively monitoring and evaluating its natural resource outcomes but it was implementing a new MER Plan which has the potential to improve its collection, management and integration of data at various scales. ▪ The lack of an effective monitoring and evaluation system reduced the CMA's ability to evaluate on-ground investments and adaptively manage its projects to promote more effective progress towards the state-wide targets over time. 	<p>The NRC suggests that the CMA take the following action:</p> <p>16. Comply with the Minister's conditions of CAP approval by continuing to develop and implement the MER Plan to include: integrating monitoring from project to catchment scale; and clear linkages to the CMA's risk and information management strategies.</p>	<p>Western CMA agrees with the NRC's suggested action. The CMA will continue to refine and implement MER Plan, including all considerations described in the suggested action. The CMA will implement this as an ongoing action.</p>

CONCLUSIONS	SUGGESTED ACTIONS	CMA RESPONSE
<p>Criteria 4.3 <i>whether the CMA maintained an information management system necessary to support adaptive management</i></p> <ul style="list-style-type: none"> ▪ The CMA's information management systems were not designed or managed to support effective use of adaptive management in implementing NRM investment in the region. Rather the CMA's primary information management systems were operated independently and therefore could not collectively provide the CMA Board and staff with accurate and timely information for strategic and operational decision-making. ▪ The inadequate provision of effective information management systems by external agencies had enhanced the difficulties faced by the CMA in maintaining a system necessary to support adaptive management processes. 	<p>The NRC suggests that the CMA take the following actions:</p> <p>17. Develop and implement a plan for improving information management. This plan should include an information needs analysis; establish clear links between the primary CMA information management systems; accommodate the review and update of the currency and accuracy of data; ensure the availability of integrated data for project evaluation and analysis; and satisfy the information needs of the CMA Board.</p>	<p>Western CMA agrees with the NRC's suggested action. The CMA will develop and implement a plan to improve information management, including all considerations described in the suggested action.</p> <p>The CMA notes that integration of key components of their information systems depends on support from relevant NSW Government agencies.</p> <p>Western CMA will continue to integrate its key business systems on an ongoing basis but has not indicated when it will complete a plan to improve information management.</p>
	<p>18. Continue to assemble and document all elements of its business systems into a clear, concise and readily accessible format for use by CMA staff.</p>	<p>Western CMA agrees with the NRC's suggested action. The CMA will continue to assemble and document elements of its business systems into a clear, concise and readily accessible format.</p> <p>The CMA will complete this action by April 2009, and continue to review and refine on an ongoing basis.</p>
	<p>19. Build the staff competencies required to effectively use the LMD and develop and implement the mechanisms for incorporating monitoring and evaluation data into WIMS.</p>	<p>Western CMA agrees with the NRC's suggested action. The CMA has commenced training for its staff, and will continue to build its staff competencies to effectively use the <i>Land Management Database</i> and develop and implement the mechanisms for incorporating data into WIMS, as required on an ongoing basis.</p>

Attachment 2 About this audit

Audit mandate The NRC is required to undertake audits of the effectiveness of the implementation of Catchment Action Plans (CAPs) in achieving compliance with those state-wide standards and targets as it considers appropriate.⁵

The NSW Government has adopted an aspirational goal to achieve resilient landscapes that support the values of its communities.⁶ It intends to achieve this by encouraging natural resource managers, such as each Catchment Management Authority (CMA), to make high quality decisions, focused through a coherent set of targets.⁷ The NSW State Plan⁸ establishes the state-wide targets for natural resource management (NRM).

CMAs have developed CAPs that express how each specific region can contribute to the aspirational goal and the State-wide targets. The *Western Catchment Action Plan*⁹ identifies the key natural resource issues (or themes) that need to be managed in the region, including biodiversity, soil and aquatic health. Within each of these themes, the CMA has identified:

- resource condition targets, for longer-term improvements in resource condition that will contribute to achievement of the state-wide targets
- management targets, which identify shorter-term investment priorities, such as specific sub-catchments or particular types of projects, that will contribute to achievement of the resource condition targets.

Audit objective This audit assessed the effectiveness of Western CMA in promoting resilient landscapes that support the values of its communities, within the scope of the CAP.

Western CMA is now implementing the CAP, through a mix of programs and projects that simultaneously contribute to more than one management target, and more than one resource condition target. Many of these integrated programs and projects use vegetation to enhance landscape function, to lead to the aspirational goal of resilience.

Lines of inquiry In order to assess the effectiveness of CMA work, the NRC sought to answer the following questions:

1. Is the CMA effectively prioritising its investments to promote resilient landscapes that support the values of its communities?
2. Are the CMA's vegetation projects contributing to improved landscape function?
3. Is the CMA effectively engaging its communities?
4. Is the CMA effectively using adaptive management?

The NRC identified that these four key aspects of CMA work should strongly

⁵ *Natural Resources Commission Act 2003, Section 13 (c)*

⁶ As recommended by the NRC in *Recommendations – State-wide standard and targets, September 2005*.

⁷ *Ibid.*

⁸ See Priority E4 in, NSW Government (2006) *A new direction for NSW, NSW Government State Plan*, November 2006

⁹ Western Catchment Management Authority, 2007

influence effectiveness in achieving resilient landscapes and promote maximum improvement for Western CMA at this stage in their development.

The NRC structured its analysis of audit evidence to be able to report on these lines of inquiry.

Audit criteria To help report on each line of inquiry, the NRC used the criteria identified below in Table 1, the audit analysis structure.

These criteria address:

- expected documentation of the particular key aspect of CMA work
- expected implementation of plans and decisions
- expected evaluation and reporting of the performance of the CMA work.

The criteria were derived from the elements of each line of inquiry, and from the general criteria of the Standard and state-wide targets.

The NSW Government adopted the *Standard for Quality Natural Resource Management* (the Standard), which identifies seven components that are commonly used to reach high quality natural resource decisions. CMAs must comply with the Standard¹⁰, using it as a quality assurance standard for all planning and implementation decisions.

Audit scope As a sample of the entire range of NRM investments, the audit report was focussed on CMA programs and projects that use vegetation to improve landscape function.

The NRC considered this to be the appropriate focus as vegetation remains a key tool for CMAs to use to achieve integrated NRM outcomes. This is due to a number of factors, including the lack of certainty in the management framework for other aspects of NRM such as water.

As most NRM programs and projects contribute to more than one NRM target, the NRC expects audited projects to also contribute to other targeted outcomes, such as river health and threatened species. The NRC audit sought to audit the effectiveness of these contributions as they arise.

Audit methodology To plan and conduct this audit, the NRC audit team followed the methodologies set out in the *Framework for Auditing the Implementation of Catchment Action Plans*, NRC 2007.

Acknowledgements The NRC gratefully acknowledges the cooperation and assistance provided by the Western CMA and landholders in the Western region. In particular we wish to thank the Chair, Mr Rory Treweeke, General Manager, Darryl Green, and other CMA Board members and staff who participated in interviews, provided information and accompanied the audit team on site inspections across the region.

¹⁰ Section 20 (c), *Catchment Management Authorities Act, 2003*

Table 1. Audit analysis structure

Line of Inquiry 1	Is the CMA effectively prioritising its investments to promote resilient landscapes that support the values of its communities?
This line of inquiry was analysed using the following criteria:	
Criterion 1.1	The CMA has a commonly understood definition of what constitutes resilient landscapes in their region.
Criterion 1.2	The CMA has a system that ranks investment options, which incorporates factors including scientific and local knowledge, socio-economic information, community and investor preferences, leverage of investment and multiple CAP target achievement.
Criterion 1.3	The CMA has a system that ensures short and long term investment priorities are consistent with each other and integrated with other planned NRM targets.
Line of Inquiry 2	Are the CMA's vegetation projects contributing to improved landscape function?
This line of inquiry was analysed using the following criteria:	
Criterion 2.1	The CMA has documented expected long-term project outcomes.
Criterion 2.2	The CMA is successfully achieving project outcomes, and maximising opportunities to add further value.
Criterion 2.3	The projects are attracting additional resources to match CMA funding.
Criterion 2.4	The CMA has a system to monitor ongoing achievements of projects.
Line of Inquiry 3	Is the CMA effectively engaging its communities?
This line of inquiry was analysed using the following criteria:	
Criterion 3.1	The CMA has identified community groups and stakeholders it must consider in planning and undertaking work.
Criterion 3.2	The CMA is implementing an engagement strategy appropriate for different community groups and stakeholders.
Criterion 3.3	The CMA is implementing a communication strategy that promotes collaboration, sustainable behavioural change and feedback.
Line of Inquiry 4	Is the CMA effectively using adaptive management?
This line of inquiry was analysed using the following criteria:	
Criterion 4.1	The CMA has documented the practical application of adaptive management principles in its planning and business systems.
Criterion 4.2	The CMA has monitoring and evaluation systems that test underlying investment assumptions and employ appropriate expertise to assess planned and actual achievement.
Criterion 4.3	The CMA maintains an information management system necessary to support adaptive management processes.

Attachment 3 The CMA and its region

CMAs have a challenging task to encourage communities across their particular regions to improve how they manage natural resources on private land for the benefit of the landholders, the broader community and future generations.

This section provides context for the audit by summarising key features of the Western region and Western CMA. This context is important in considering both the way in which a CMA's effectiveness should be assessed and the options for improving that effectiveness.

The region at a glance

The Western region covers 230,000 sq km of north western NSW and contains 20% of the Murray-Darling Basin. It is one of the most diverse rangeland areas in Australia and is bounded by Queensland and South Australia to the north and west and the transcontinental railway through Broken Hill to the south. The Barwon River and part of the Bogan River form the eastern boundary.

The Western region encompasses the Barwon- Darling, Culgoa, Paroo, Warrego, Narran, Bokhara, Birrie, Bulloo Overflow and part of the Bogan Rivers river catchments. Many of these rivers originate in Queensland with the Condamine - Balonne system contributing 20% and the MacIntyre and Border Rivers contributing 35% of tributary flows entering the Barwon -Darling system.

Groundwater is an important natural resource in the Western region, and the volume of water stored in the pores and fractures of rocks in the Great Artesian Basin below the watertable vastly exceeds the volume of fresh surface water resources.

In the Western region rainfall is low and highly variable. The terrain is flat and low, with no mountain ranges high enough to affect climate. Climatic features inhibit ideal conditions for plant growth, especially in the north where summer rainfall is less effective because evaporation is at its peak in the summer. Drought is a major feature of the climatic cycle in the region.

Much of the region retains its native vegetation spread across eight distinctly different biophysical regions. These are the:

- Darling Riverine Plains;
- Cobar Peneplain;
- Murray-Darling Depression;
- Mulga Lands;
- Channel Country;
- Simpson Strezlecki Dunefield;
- Broken Hill Complex; and
- Brigalow Belt South.

Unlike much of coastal Australia the Western region has a declining population with just 18,000 people supported by the urban centres of Bourke, Broken Hill, Cobar, Walgett, Brewarrina,

Lightning Ridge and Wilcannia. Administratively the region includes the whole of Bourke and Brewarrina Shires and significant portions of the Unincorporated Area, Cobar, Central Darling and Walgett Shires.

Across the region the agricultural industry employs the majority of the workforce (26%) in grazing (sheep, cattle and goats), dryland and irrigated cropping. After agriculture, local government, health, education and community welfare employ the most people.

The region supports a relatively large Aboriginal population based predominantly within the townships. The 2001 Australian Bureau of Statistics census estimated that the total population of Aboriginal people living within the Western CMA area was equivalent to 22% of the catchment's total population.

The major NRM challenge for the CMA is endeavouring to influence landholders to change their management practices in an area where the benefits of change can take many years to emerge.

The CMA at a glance

Western CMA is responsible for a geographical area equal to approximately 30% of NSW. At the time of the audit, the Board consisted of Rory Treweeke (Chair) and Justin McClure, Andrew Mosely, Sam Jeffries, Diana Hoffman and Tony Thomson.

The Board is supported by a General Manager, two senior managers and approximately 40 staff.

The CMA shares a large number of administrative boundaries. Adjacent CMAs include the Border Rivers-Gwydir, Namoi, Central West, Lachlan, and Lower Murray- Darling and adjacent interstate regional bodies (CMA equivalents) include the Queensland Murray-Darling Committee, South West Natural Resource Management Group and Desert Channels in Queensland, and Arid Lands Natural Resource Management in South Australia.

To provide services across such a vast region the CMA maintains offices in Cobar (principal office), Bourke, Walgett, Broken Hill and Dubbo and endeavours to maintain key staff in long term positions so that they can develop strong relationships with their local communities. The General Manager is a long term resident of the region and is based in Dubbo.

In implementing the Western CAP, Western CMA distributed \$11.2 million¹¹ in grant funding during 2007/08 to undertake on-ground works or training to improve natural resource management.

Figure A3.1 provides a map illustrating some of the key characteristics of the region and sites visited by the NRC in its audit.

¹¹ WCMA (2008) *Annual Achievement Report 2007-2008; What have the people of the Western Catchment achieved during the past year?* WCMA, Dubbo.

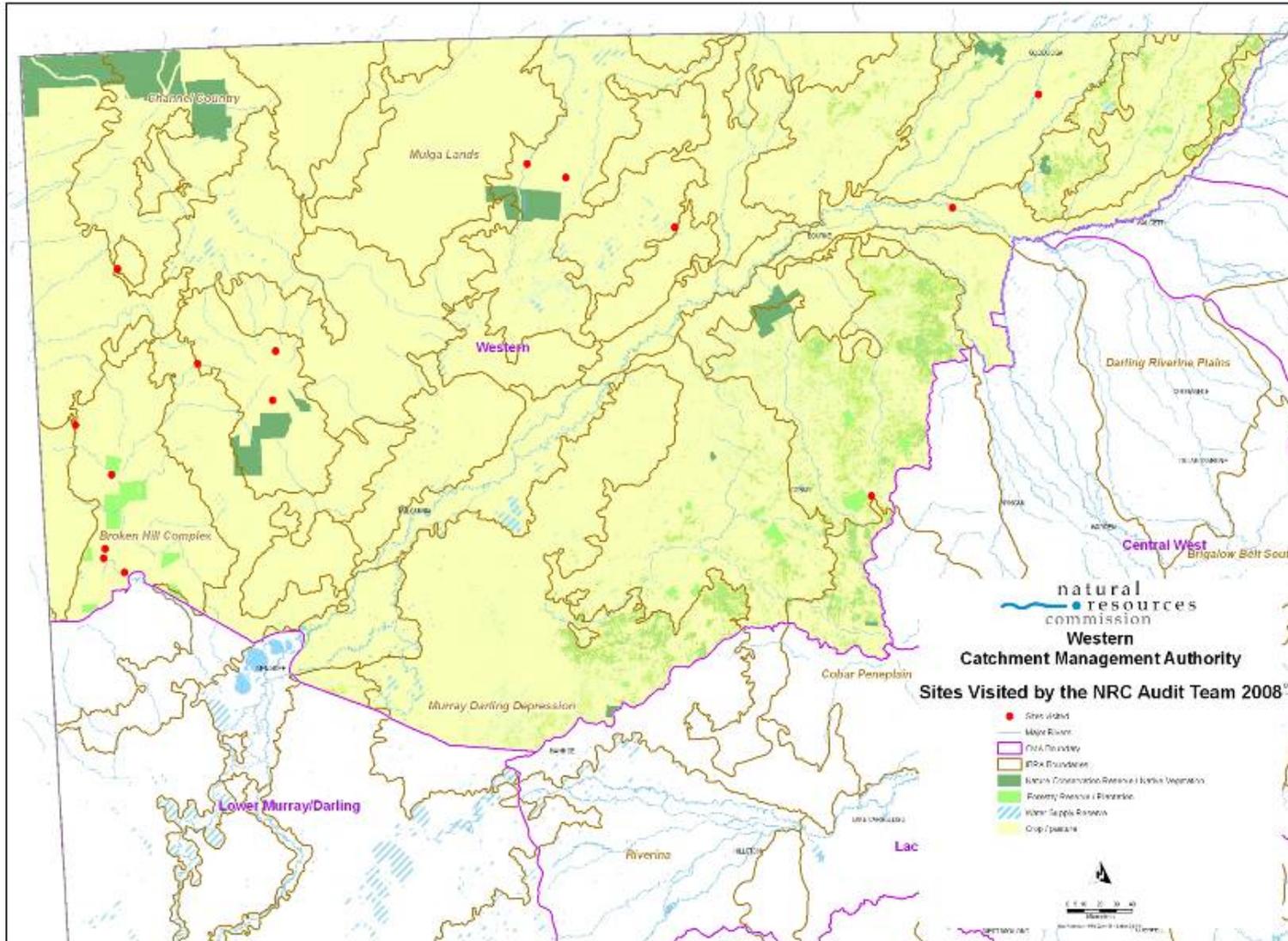


Figure A3.1: Western region and sites visited by the NRC