

SHAPING THE LANDSCAPES OF NSW – THE ROLE OF EVALUATION IN NATURAL RESOURCE MANAGEMENT

R. Pryce, T. Maher¹

Natural Resources Commission, Sydney, Australia

Abstract

Natural resource management is about actively managing the way in which people and natural landscapes interact. Governments at all levels are trying to find ways to better manage the tightly linked social and ecological processes that shape our world, and its possible futures.

NSW has adopted an institutional model for NRM that is designed to encourage greater involvement of communities in managing their landscapes, promote adaptive management and provide greater confidence to government investors and communities. The model is grounded by a *Standard for Quality Natural Resource Management* that defines good practice, and is supported by regular evaluation and reporting.

The Natural Resources Commission has developed and implemented approaches to evaluation that suit the particular needs of the natural resource management field. Using the evidence gathered through reviews and audits over six years the NRC has recently reported to the government that the NRM system in NSW is delivering results. The experience provides many examples of how evaluation has influenced better practice at a number of scales, driven new ways of thinking, and informed government decision making. This paper focuses on the role of evaluation in managing this complex area of public policy.

1 Introduction

The current approach to natural resource management (NRM) in NSW is the latest in an evolving set of arrangements to respond to the ongoing public policy problem of how to equitably and sustainably manage our landscapes. NRM has been described as a 'wicked' public policy problem because of the complexity in balancing the many – often competing – environmental, social and economic benefits we derive from our natural landscapes (Australian Public Service Commission 2007; Balint *et. al.* 2011).

Governments are recognising centralised command and control measures that are characterised by prescriptive rules and standardisation cannot adequately deal with this complexity (Gallop 2006; Bartlett and Packer 2008). Instead, many argue for governance arrangements that transfer decision-making to the scale where issues are best understood by government and communities, and where both can navigate towards solutions through innovation, co-learning and adaptation (Marshall 2008).

The NSW Government has adopted a model for regionally-based NRM which was designed to give communities a more direct say in how their landscapes are managed (NSW Government 2003). It was also designed with rigorous assurance mechanisms so that investors can know what is being achieved, while also encouraging a willingness to learn, promoting new ways of thinking and supporting improved performance.

The reforms of 2003 sought to update and improve the institutional arrangements for NRM and included new legislation, new organisations and new assurance and accountability mechanisms. The main elements of this reform were:

- establishing the *Native Vegetation Act 2003*, *Catchment Management Authorities Act 2003* and *Natural Resources Commission Act 2003*.
- establishing state-wide targets and standards for NRM
- establishing 13 regionally based Catchment Management Authorities (CMAs) to work with their communities to deliver regionally-relevant NRM
- charging CMAs with developing and implementing Catchment Action Plans (CAPs) that set out their region's strategic priorities for investment and action
- establishing the NRC to provide independent advice to Government.

¹ Corresponding author: Todd Maher, GPO Box 4206, Sydney, Australia, 2001. todd.maher@nrc.nsw.gov.au

The NRC has a key role as an independent evaluator of progress of this regional model. The NRC informs Government and other stakeholders about what is working in NRM, what needs fixing and how the regional model is progressing towards its stated policies and targets. The NRC has several core functions:

- recommending standards and targets for NRM
- reviewing CAPs prepared by CMAs and recommending whether they should be accredited by government
- auditing how effectively the CAPs are being implemented
- reporting on progress towards the state-wide targets.

Through its program of CAP reviews, audits and reporting, the NRC aims to promote excellence and drive continual improvement in how CMAs and others conduct integrated catchment planning and implement effective resource stewardship programs.

The remainder of this paper describes the NRC's approach to CAP reviews and implementation audits, and the influence these reviews and audits are having to improve performance and stretch thinking in this field.

2 NRC's approach to reviewing catchment action plans and auditing their implementation

A non-prescriptive, performance-based standard, high-level state-wide targets, and a program of regular review and audit set the framework for evaluation and adaptive management in NRM in NSW. The NRC recommended the *Standard for Quality Natural Resource Management* (the Standard) and 13 state-wide targets that were adopted by the NSW Government in 2005 (for the Standard and full wording of the 13 state-wide targets see NRC 2005).

The targets were designed to provide the right balance of state-level guidance and flexibility so that CMAs could incorporate community values and interpret and develop targets that prioritise investment at the regional level. The targets, while being interdependent, are intended to be pursued in different ways across landscapes, according to the current and desired future balance between competing uses of natural resources in each region.

With the targets defining what we want to achieve, the Standard defines how we should go about the business of NRM to deliver them. When the Standard was developed, many stakeholders were expecting a set of prescriptive technical standards. However, a standard that set out the quality of NRM practice that must be achieved was more appropriate because of the large variations in: natural resources (e.g. type and condition); economic conditions; community aspirations; and technical capacity across NSW landscapes. Figure 1 lists the seven components of the Standard, and describes performance expectations for all natural resource managers (required outcomes).

2.1 Planning and undertaking CAP reviews and implementation audits

Under the *Natural Resources Commission Act 2003*, the NRC is required to recommend the approval of CAPs and to undertake audits of how effectively they are being implemented. In both cases, CAPs are required to meet the Standard and promote the state-wide targets.

Since 2004, the NRC has reviewed and recommended all 13 CAPs be approved by government, and audited the implementation of all 13 CAPs at least once.

In the CAP reviews the NRC is looking at the quality of strategic planning - whether the CAP (and the CMA) is focusing on the right problems to fix and plans to go about it in the best way possible. The CAP implementation audits then look at the outcomes CAP implementation is making on the ground.

Collection and use of knowledge	<ul style="list-style-type: none"> • Use the best available knowledge to inform decisions in a structured and transparent manner
Determination of scale	<ul style="list-style-type: none"> • Management of natural resource issues at the optimal spatial, temporal and institutional scale to maximise effective contribution to broader goals, deliver integrated outcomes and prevent or minimise adverse consequences
Opportunities for collaboration	<ul style="list-style-type: none"> • Collaboration with other parties to maximise gains, share of minimise costs or deliver multiple benefits is explored or pursued wherever possible
Community engagement	<ul style="list-style-type: none"> • Implementation of strategies sufficient to meaningfully engage the participation of the community in the planning, implementation and review of natural resource management strategies and the achievement of identified goals and targets
Risk management	<ul style="list-style-type: none"> • Consideration and management of all identifiable risks and impacts to maximise efficiency and effectiveness, ensure success and avoid, minimise or control adverse impacts
Monitoring and evaluation	<ul style="list-style-type: none"> • Quantification and demonstration of progress towards goals and targets by means of regular monitoring, measuring, evaluation and reporting of organisational and project performance and use of the results to guide improved practice
Information management	<ul style="list-style-type: none"> • Management of information in a manner that meets user needs and satisfies formal security, accountability and transparency requirements

Figure 1: Seven components of the Standard and their required outcomes

These planning reviews and implementation audits were new to NRM in NSW and the NRC's approach to them has evolved with the model as it has matured. There are a number of factors that have influenced the NRC's approach to these evaluations:

- performance benchmarks were initially unknown, as were the capacities of evaluators available in the field (to the NRC at least, and its needs)
- there was a need to calibrate approaches to suit varying capacity and performance, for example to stretch both low and high performers
- the need for evaluations to generate practical and implementable solutions for the users so as to increase the likelihood of recommendations being addressed - the 'appetite' and capacity for change and improving performance has shifted through time.

The NRC's approach to CAP reviews and audits can be generalised into the (sometimes iterative) steps described below:

- **research best practice** for the type of review or audit being planned to understand the tools and processes required to design the assessment processes
- **analyse the context** (institutional, spatial, temporal), and the stage of development of the systems or institutions being evaluated to identify what we expect to see at a point in time for the part of the adaptive cycle we are looking at (planning, implementation etc)
- **use the Standard define and test expectations** (for audits these have been called 'lines of inquiry', for CAP reviews they are 'criteria and attributes')

- **conduct pilot assessments** against the expectations using more detailed sets of questions and sub-criteria, and using a range of methods to generate multiple lines of evidence
- **calibrate expectations** based on the results of the pilot (determine how much is enough, set benchmarks, consider scope of possible recommendations)
- **roll-out evaluations across NSW**, and report on strengths, weaknesses and recommendations for improvement at the regional scale
- **consolidate the results** of regional evaluations to give an overall picture of progress state-wide focussing on issues of state-wide significance, for example, policy barriers, resourcing, MER (NRC 2006b, 2008a, 2010a).

2.1.1 Example 1: Reviewing catchment action plans

Between 2006 and 2008, the NRC reviewed the first CAPs prepared by newly established CMAs, and recommended that the Minister approve (with conditions) all thirteen CAPs (for example, see NRC 2006a). Overall, the NRC found that all of the CAPs complied with the Standard and were likely to promote the achievement of state-wide targets to varying degrees.

In 2011, CMAs are now preparing to upgrade their CAPs and the NRC is preparing for another round of reviews. CAPs need upgrading to incorporate best available information, reflect the growing capabilities of CMAs, the maturing of the regional delivery model, the changing priorities of investors and communities, and changes in the operating environment of CMAs.

Six years of experience, audits and progress reporting have identified areas for improvement and shaped the context for these CAP upgrades. For example, NRC reviews and audits have consistently demonstrated the need for a more coordinated approach to NRM and CAP development across government, and to ensure that the right incentives are in place for landscapes to be managed as a whole rather than siloed into discrete parts (NRC 2006b, NRC 2008a, NRC 2010a). These findings have influenced a clear shift towards greater collaboration between agencies and CMAs, and commitment to a whole-of-government approach (NRC 2010a).

To prepare for these CAP upgrades the NRC, agencies and the Central West and Namoi CMAs piloted a process for upgrading CAPs and their subsequent assessment which specifically focussed on testing a whole-of-government and community approach to planning, and applying new analytical frameworks for understanding landscapes and determining the best interventions (Figure 2). The pilot process involved:

- the NRC working with agencies and CMAs to develop a working draft set of assessment criteria reflecting the priorities that had been identified through CAP reviews, audits and NRC progress reporting
- Central West and Namoi CMAs working with agencies and their communities to upgrade their CAPs and test feasibility of applying new ideas
- the NRC trialling the assessment of the pilot CAPs using the working draft assessment criteria, calibrating expectations, and consequently revising the assessment criteria for implementation across the state as all CMAs prepare and submit upgraded CAPs over the next two years.

This pilot process has allowed the CMA to pioneer new thinking, and for agencies, CMAs and the NRC to understand the extent to which the priorities for improvement are feasible now, and which areas need more time and support to implement (CW CMA 2011, NRC 2011a, NRC 2011b).

2.1.2 Example 2: Auditing catchment action plan implementation (2008-09)

In 2007, the NRC set out a framework to audit the effective implementation of CAPs (NRC 2007a). This audit methodology combined well known audit standards (for example, IIAA 2007; AUASB 2007) and expert opinion from NRM practitioners.

The audits examined CMA performance across four lines of inquiry (Table 1). These lines of inquiry reflect the requirements of the Standard when it is applied to the task of CAP implementation.

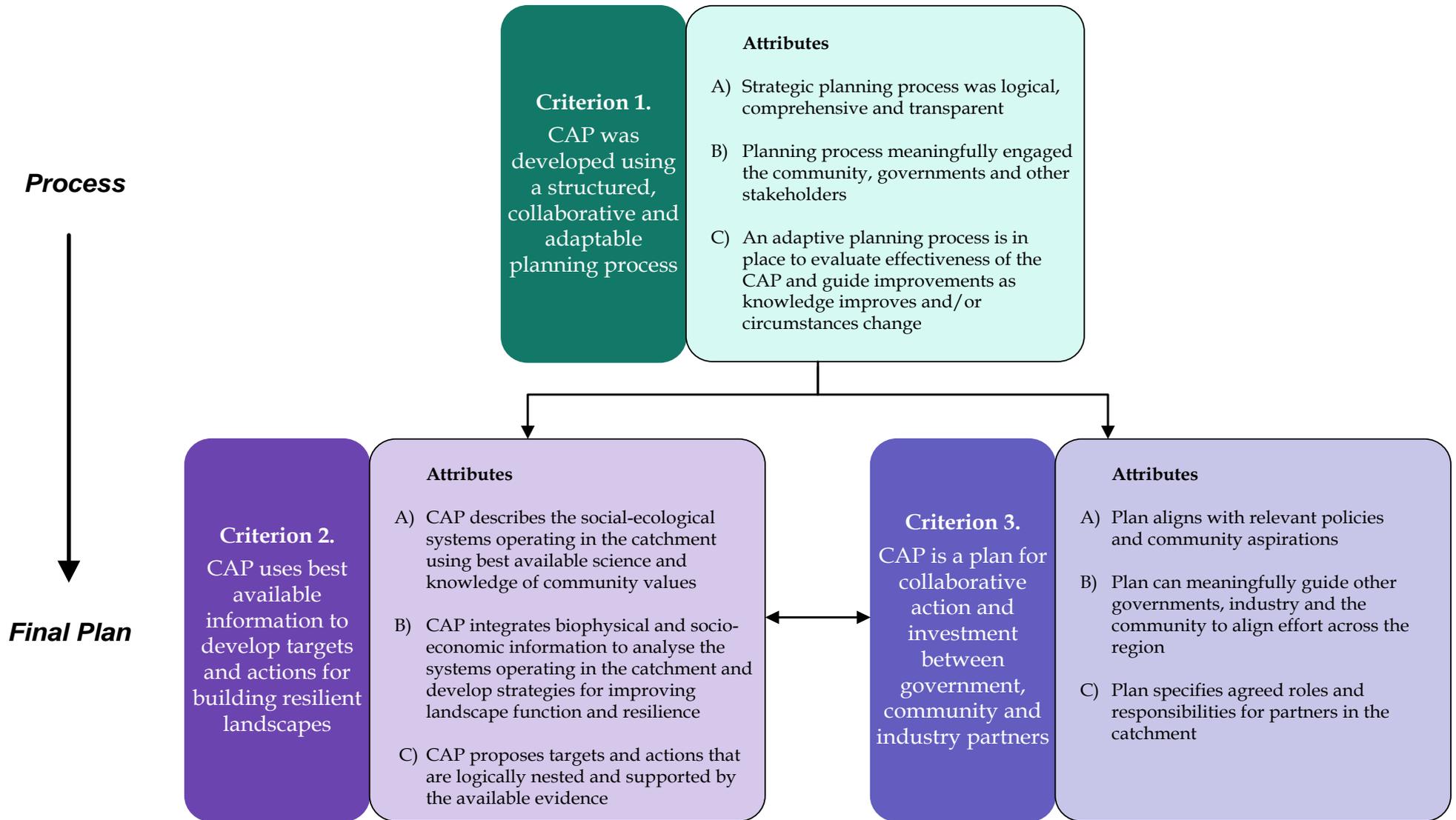


Figure 2: Criteria and attributes to assess whether a catchment action plan is a quality NRM plan

Table 1: NRC audit lines of inquiry

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 tested against 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 tested against 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 tested against 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 tested against 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.

The NRC used a range of audit activities to test performance including site inspections, report verifications and logic modelling and systems design reviews.

All of the NRC's audit results are publicly available, and contain descriptions of how CMAs are performing against each line of inquiry, case studies and recommended actions for CMAs to improve.

Overall, the NRC found CMAs were effectively engaging communities and delivering on-ground works that are likely to lead to local resource condition improvement. However, while some CMAs were effectively prioritising investments and adaptively managing their business, many needed to improve in these areas.

Two clear examples illustrate the impact of these audits. Firstly, repeated auditing is supporting better business performance, as demonstrated by the improvement in the Murray CMA. During late 2010 the NRC audited the Murray CMA for the second time. Since its first audit in 2008 the Murray CMA's leadership has led an observable improvement in organisational culture and business systems. The second audit of Murray CMA has found substantial improvements across most lines of audit inquiry, especially in the way they prioritise investments and adaptively manage (see NRC 2008b and ERSA 2010).

Secondly the audits, which draw on multiple lines of evidence, are also providing a better understanding of progress than has been possible in the past. In its 2010 Progress Report, the NRC noted that measuring and verifying change in natural resources as a direct result of NRM investment is challenging and governments have typically (unrealistically) expected resource condition data alone to tell us how we are going. NRM programs have suffered as a result, for example when other audits have concluded that there is not enough evidence to show that NRM programs are making a difference (ANAO 2008).

The NRC's systematic program of reviews, audits and reporting is now generating regular and multiple-lines of data and knowledge on progress towards government and community objectives that give a much more timely, detailed and realistic picture of progress that is being made at multiple scales. For example, of the 100 or sites assessed during its audits, the NRC found that over 90 per cent of CMA projects had achieved their short-term outputs, and around 50 per cent showed evidence of local improvements in resource condition – during drought conditions.

3 Evaluations are influencing better practice

After six years of implementing the regional model and reviewing results, there is emerging evidence that the systematic practice of review, evaluation and reporting in the NSW NRM model is driving improved performance and innovation, while providing assurance to government and communities.

This paper explained some specific examples of the value of evaluations in:

- contributing to maturing of the model (and its actors)
- supporting processes to test and evaluate the application of new ideas
- promoting better business performance within CMAs
- allowing a more sophisticated and realistic appraisal of progress made than has previously been possible – giving governments a better basis for decision-making.

The NRC believes that development of an adaptive management and learning culture has been a critical success factor in the implementation of the regional model so far. The Standard, targets and audits were established as a framework to institutionalise learning and continual improvement. With relative institutional continuity since 2003, CMAs have had the space to learn from their experiences and improve practice over time. This is moving NSW away from a prescriptive rules-based system towards an accountability framework that is flexible enough to manage complexity and uncertainty.

An important feature of the NRC's role as an independent evaluator in this system is that the NRC has been learning with CMAs and agencies. The NRC's approach to the evaluations has supported the model to mature by providing space and information for CMAs, agencies and the NRC to work together to solve problems progressively as we learn. The NRC's approach has also adapted and evolved as the system has matured.

3.1 Challenges and next steps to progress

At the state and national levels there has been a history of frequent restructures in the NRM field. The challenge is to build on the foundations we have established, rather than resetting clock on every round of new reform.

The NRC has recommended that the culture of prediction, testing, reviewing and learning that we are observing at the regional scale should be institutionalised more widely through the NRM system (NRC 2010 a). Formal accountability processes – using monitoring and auditing programs and predictive tools – would help institutionalise adaptive learning, ensure each successive round of NRM reform builds on the lessons of the past, and provide the long-term learning and continuity of focus that is needed to improve the health of our landscapes.

References

- AUASB (2007) *Auditing and Assurance Standards*. Auditing and Assurance Standards Board, Melbourne.
- ANAO (2008) *Regional Delivery Model for the Natural Heritage Trust and the National Action Plan for Salinity and Water Quality*. Australian National Audit Office, Audit Report No. 21 2007-08 Performance Audit. Commonwealth of Australia, Canberra.
- Australian Public Service Commission (2007) *Tackling Wicked Problems: A Public Policy Perspective*. Commonwealth of Australia, Canberra
- Balint, P.J., Stewart, R.E., Desai, A. and Walters, L.C. (2011) *Wicked Environmental Problems: Managing Uncertainty and Conflict*. Island Press, Washington DC.
- Bartlett, J. and Packer, S. (2008) *Towards Agile Government*. Jointly published by Demos, London and Victorian State Service Authority, Melbourne.
- CW CMA (2011) *Central West Catchment Action Plan 2011-2021; draft for community consultation*. Central West Catchment Management Authority, Wellington, NSW. Available at <http://cw.cma.nsw.gov.au/AboutUs/2011capconsultation.html>
- DECCW (2010) *New South Wales Natural Resources Monitoring, Evaluation and Reporting Strategy 2010-2015*. State of NSW and the Department of Environment, Climate Change and Water NSW, Sydney.
- Gallop, G. (2006) *Strategic planning: is it the new model?* Address given to the Institute of Public Administration (NSW), Sydney. Available at http://www.gainthepolicyedge.com.au/readings/2009/further_readings/Reading%20-%20Strategic%20Planning%20-%20is%20it%20the%20New%20Model%20-%20Geoff%20Gallop.pdf
- ERSA (2010) *Audit report – Murray Catchment Management Authority – December 2010*. Audit conducted by Environmental Risk Science and Audit on behalf of the Natural Resources Commission, Sydney.
- IIAA (2007) *International Standards for the Professional Practice of Internal Auditing*. Institute of Internal Auditors Australia, Sydney.
- Marshall, G (2008), 'Nesting, subsidiarity, and community-based environmental governance beyond the local level', *International Journal of the Commons*, 2, 75–97.
- Namoi CMA (2011) *Draft Namoi Catchment Action Plan 2010-2020*. Namoi Catchment Management Authority, Tamworth, NSW. Available at <http://www.namoi.cma.nsw.gov.au/374530.html?5>
- NRC (2005) *Recommendations – state-wide standard and targets - September 2005*. Natural Resources Commission, Sydney.
- NRC (2006a) *Recommendations – Hunter-Central Rivers Catchment Action Plan – September 2006*. Natural Resources Commission, Sydney.
- NRC (2006b) *Progress of Catchment Action Plans; Their place in current and future natural resource management in NSW – September 2006*. Natural Resources Commission, Sydney.
- NRC (2007a) *Framework for auditing the effective implementation of catchment action plans – December 2007*. Natural Resources Commission, Sydney.
- NRC (2008a) *Progress report on effective implementation of Catchment Action Plans – November 2008*. Natural Resources Commission, Sydney.
- NRC (2008b) *Audit report – Murray Catchment Management Authority – December 2008*. Natural Resources Commission, Sydney.

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

NRC (2010b) *Review of Catchment Action NSW funding allocations to Catchment Management Authorities. Final Report – October 2010*. Natural Resources Commission, Sydney.

NRC (2011a) *Framework for assessing and recommending upgraded catchment action plans – May 2011*. Natural Resources Commission, Sydney.

NRC (2011b) *Example of NRC's report format based on the Central West pilot upgraded CAP – May 2011*. Natural Resources Commission, Sydney.

NSW Government (2003) Second Reading Speech for the *Native Vegetation Bill, Catchment Management Authorities Bill and Natural Resources Commission Bill*, NSW Hansard Articles: LA 12/11/2003 #51.