

Challenges for integrated natural resource management in coastal New South Wales

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(NSW Coastal Conference 2007)

1 Introduction

The NSW coast is a highly valued environment providing multiple benefits to the population it supports. It is also institutionally complex - comprising of a variety of authorities and layers of government, implementing plans and policies that complement, overlap and nest within each other. This presents a challenge for all groups to coordinate effort and develop solutions that balance the multiple demands for the natural resources on the coast. This challenge is further compounded by the variety of pressures on the coastal environment. Population growth, urban development to accommodate that growth and activities in coastal catchments and waterways are affecting the condition of our natural resources. The impacts of climate change such as sea level rise, coastline erosion and the increased risk of catastrophic events are likely to magnify these effects and generate economic, social and environmental problems. The lack of high quality information on the outcomes of management, planning and investment decisions and a lack of accountability for decisions that are made, further highlights the need for coordinated efforts in managing the coastal environment.

This paper provides an overview of the NRM delivery model in NSW and discusses its relevance managing the competing uses, values and pressures on the coast. It also presents several key strategic challenges for integrated NRM on the coast in the future.

2 The NRM delivery model in NSW

The regional model for delivery of NRM in NSW provides a framework for managing the competing uses, values and pressures on the coast. The key features of this model include:

- the thirteen regional Catchment Management Authorities (CMAs) that have responsibility for engaging their communities, developing Catchment Action Plans (CAPs) and investing in NRM
- the thirteen state-wide targets which set out broad goals for improving our key natural resource assets and the priorities for managing them in ways that also contribute to economic sustainability and social well-being
- the *Standard for Quality NRM* which promotes quality practice in the NRM sector and underpins adaptive management to achieve targets for resource condition improvement
- the state NRM agencies which lead the development of state NRM policy and legislation, undertake compliance activities to enforce regulation and provide scientific and technical support to CMAs

- the Natural Resources Monitoring, Evaluation and Reporting Strategy which will provide information to support investment, policy and management decisions at all scales
- the NRC as an independent auditor of progress against the state targets which will help assure quality and promote continuous improvement.

2.1 Targets for natural resource management

In February 2006 the NSW Government adopted thirteen state-wide natural resource targets which provide a focus for all natural resource management, planning, and investment decisions.¹ The targets are included in Priority E4 of the State Plan, demonstrating a whole of government commitment to achieving them. These biodiversity, water, land and community targets contribute to the overarching goal of resilient landscapes - healthy landscapes that function effectively at all scales and support the environmental, economic, social and cultural values of the community.

Most targets are relevant to coastal areas, for example:

- the target for increasing native vegetation extent and improving its condition encompasses dune vegetation and other vegetation relevant to the coast
- the target for reduction in impact of invasive species encompasses weeds such as Bitou Bush and other potentially troublesome vegetation such as *Caulerpa taxifolia*
- the targets for water include improving the condition of wetlands and of estuaries and coastal lake ecosystems
- the marine target covers rocky reefs and the open water environment.

CMAs have developed, and are investing, in regionally-specific catchment targets which will contribute to the achievement of the state targets.

2.2 The Standard for Quality NRM

The Standard aims to promote quality practice in the NRM sector, and encourage adaptive management to achieve the state-wide targets.² It is a set of seven inter-related components that define the characteristics of quality NRM practice. These *Required Outcomes* provide consistent reference points to help organisations and individuals evaluate and continually improve their decision-making and management approaches at all institutional scales (from national to property scale) and through all phases of the adaptive management cycle (plan-do-check-act) (Figure 1).

Benefits of the Standard include:

- **Maximising efficiency and effectiveness** - The Standard encourages managers to get the most out of the available resources through effective coordination of partnerships, a focus on achieving multiple benefits from single investments, meaningful engagement with stakeholders and sharing of information. It promotes actions and investments that maximise gains and minimise costs.
- **Managing uncertainty** - When the outcomes from action may not be evident or measurable for several years, meeting the Standard gives confidence that the most appropriate decision

¹ The Natural Resources Commission (2005), *State-wide targets for natural resource management*. Natural Resources Commission.

² The Natural Resources Commission (2005), *Standard for Quality Natural Resource Management*. Natural Resources Commission.

has been made and increases the probability that the desired outcomes will be achieved on the ground.

- **Improving transparency and accountability** - Meeting the Standard helps to identify specific investment priorities and trade offs, and can demonstrate transparent and rigorous decision-making to third parties.
- **Promoting consistency and integration between institutions and managers at different scales** - Use of the Standard by a wide range of organisations and individuals involved in NRM will ensure that different approaches to managing natural resources are underpinned by consistent logic and understanding of quality. One long term benefit of greater consistency across organisations will be the establishment of common data sets to enable assessment of resource condition across all spatial scales.
- **Promoting quality practice** - Where there is a limited pool of funding available, and many players seeking funding, self-declaration of compliance with the Standard sends an important signal to investors that an organisation is undertaking high quality management of natural resources.

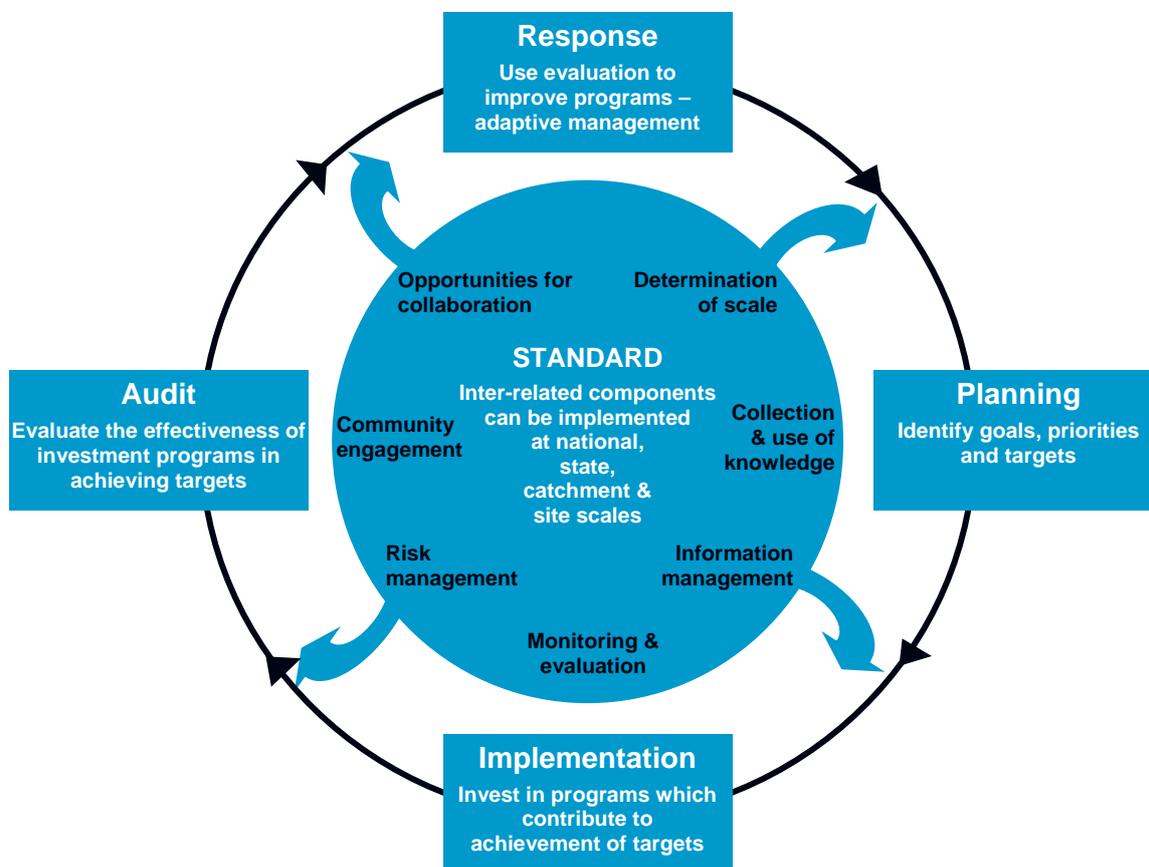


Figure 1: Components of the Standard underpin adaptive management at all scales

The Standard is equally relevant to natural resource managers working at all scales, and can be used in a way that is appropriate to the needs and functions of individual managers and organisations. For example, small organisations and individuals can self assess their approach to NRM against the seven *Required Outcomes* to identify opportunities to improve the way they operate. Larger organisations can build internal business, governance and audit systems to embed the seven components into their everyday business and use the Standard to evaluate and improve their performance over time.

2.3 Monitoring, Evaluation and Reporting

NSW natural resource agencies are currently implementing a Monitoring, Evaluation and Reporting (MER) strategy aimed at fulfilling the NRC's recommendations on MER.³ The aim is to have a system in place that:

- informs all governments and other natural resources managers' decisions
- measures progress to state and catchment targets
- enables adaptive management at local, regional and state scales
- better integrates monitoring programs at different scales across each of the natural resource themes (biodiversity, water, land and community) through the leadership of state agencies.

Full implementation of the system will take some time, but will ultimately provide consistent data on a range of indicators to NRM practitioners at all levels. It will also enable data to be shared between all natural resource managers from local to state government. Data collected by agencies at a catchment and state scale will be able to be enriched and made more relevant by additional data being collected in a consistent way by users interested in a finer scale of resolution.

2.4 Auditing and reporting on progress

A key element of the NRM model in NSW is the role of the NRC as an independent auditor of progress. The NRC will be assessing the effective implementation of the Catchment Action Plans against the standard and targets. For example, the NRC will audit each of the five coastal CMAs to check whether they are effectively investing in priority areas and thus contributing to achieving the state-wide targets. The audit program will:

- be designed to demonstrate whether on-ground improvements in natural resource condition are being achieved, through assessing compliance with the standard and using data to verify progress towards the state-wide targets
- use a risk based approach to focus and tailor the nature of audit work and to inform the frequency of audits – the implementation of each CAP will be audited at least once every three years but if risk assessments identify high risk, audits may be more frequent
- use commonly accepted audit methods to ensure the rigour of the audit process and effective communication about the audits.

The NRC has also been assigned an important role in Priority E4 of the NSW State Plan to report on whether progress is being made towards achieving the state-wide targets. This reporting will provide information to enable adaptive management of our natural resources and make decision-makers accountable for their decisions.

3 Strategic challenges for integrated NRM in coastal NSW

The regional model for NRM provides a solid foundation for improving natural resource outcomes in coastal areas. However given the increasing pressures from population growth, urban development and climate change there remain several issues that need to be addressed. To overcome these issues we need:

- better natural resource data in coastal areas to inform land use and NRM decision making

³ The Natural Resources Commission (2005) *Recommendations: State-wide Standard and Targets*. Natural Resources Commission.

- a common set of goals for land use planning and NRM
- better alignment of the priorities for coastal landscapes
- consistent legislation governing native vegetation management
- greater flexibility for coastal and urban CMAs to invest in planning and coordination.

3.1 Better data to inform decision making

Good quality natural resource data and information is a fundamental input into government and other natural resource managers' management, planning and investment decisions. However, there is little evidence that these decisions are being guided by good quality data, primarily due to the lack of data on resource condition and the lack of data at the appropriate scale. For example, the Comprehensive Coastal Assessment includes a range of regional scale data sets, such as soil and nutrient loads from current land-use. However the data is not readily applicable to local scale planning and investment decisions. It is important that the MER system in NSW continues to prioritise actions to collect data and information on resource condition at a range of scales and to enable open access to this data.

3.2 A common set of goals and priorities for land use planning and NRM

Incorporating NRM priorities in land use plans would provide further opportunities to protect and manage our highest value natural assets. The NSW Government has recognised this issue; the State Plan identifies the need to integrate catchment planning with regional land use and local government planning.

The Regional Strategies (and their supporting Regional Conservation Plans) specifically guide land use planning decisions by defining areas for development and sometimes, areas for protecting and conserving natural resources. Currently the natural resource targets of the State Plan are not an explicit objective in land use planning decisions. On the other hand, Catchment Action Plans are strategies for investment in on-ground action to improve the condition of natural resources that contribute to the natural resource targets in the State Plan. However the natural resource priorities expressed in CAPs are not a specific consideration for local land use plans in many coastal areas.

NSW has the opportunity to apply common goals to land use planning and NRM through Local Councils' current revisions of statutory Local Environment Plans (LEPs). In the coming year, coastal and urban CMAs, state government agencies and local government need to work together to improve the alignment of priorities in the different types of strategies to ensure that natural resource priorities are incorporated in LEPs.

3.3 Consistent legislation governing native vegetation management

The *Environmental Planning & Assessment Act 1979* (EP&A Act) is the primary legislation underpinning statutory planning instruments and regulating clearing of native vegetation in urban areas, largely on the coast. There are fundamental differences in the operation of this and the *Native Vegetation Act 2003* (NV Act). The NV Act, which regulates clearing of native vegetation in rural areas, contains more stringent rules for clearing than the EP&A Act. Unless these approaches are aligned, some of the highest value vegetation in coastal and urban areas will be unprotected,

potentially resulting in significant loss of biodiversity. The NRC's report, *A Landscape Approach to Vegetation Management*⁴ identified these problems.

3.4 Greater flexibility for coastal and urban CMAs

The institutional complexity and number of large players with significant influence over natural resources on the coast can make it difficult for CMAs to achieve catchment outcomes through investment in on-ground action alone. CMAs in these regions should have greater flexibility to engage and invest more in strategic planning and coordination and less in on-ground delivery. This was a key recommendation in the NRC's September 2006 Progress of Catchment Action Plans Report.⁵

4 Conclusion

The NSW coast contains many highly valuable natural resources that are vulnerable to the pressures and demands of many groups and individuals. It is important that the coast is managed in a way that ensures the landscape is functioning effectively at all scales and supporting the environmental, economic, social and cultural values of the community. The NRM regional delivery model in NSW provides a solid foundation for good management of the coast. However, there remain several challenges to address to further enhance the ability of the model to work effectively on the coast.

⁴ The Natural Resources Commission (2007), *A Landscape Approach to Native Vegetation Management: Final Report*, Natural Resources Commission.

⁵ The Natural Resources Commission (2006), *Progress of Catchment Action Plans: Their place in current and future natural resource management in NSW*, Natural Resources Commission.