



# STANDARD FOR QUALITY NATURAL RESOURCE MANAGEMENT

September 2005





## STANDARD FOR QUALITY

# NATURAL RESOURCE MANAGEMENT

## Foreword

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

This Standard addresses quality practice in natural resource management. It is intended to be read in conjunction with the *Guide to Using the Standard for Quality Natural Resource Management*.<sup>1</sup> While it will have general application, the *Guide* will specifically assist NSW Catchment Management Authorities (CMAs) to interpret and apply the Standard.

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

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

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<sup>1</sup> The first version of this guide should be available in September 2005.

# 1 Introduction

## 1.1 Title of this Standard

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

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

## 1.2 Scope

The Standard addresses quality practice in natural resource management.

Additional guidance to assist Catchment Management Authorities in applying the Standard is provided in the *Guide to Using the Standard for Quality Natural Resource Management*.<sup>2</sup>

## 1.3 Purpose of the Standard

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

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

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

### 1.3.1 Prioritisation

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

### 1.3.2 Continual improvement

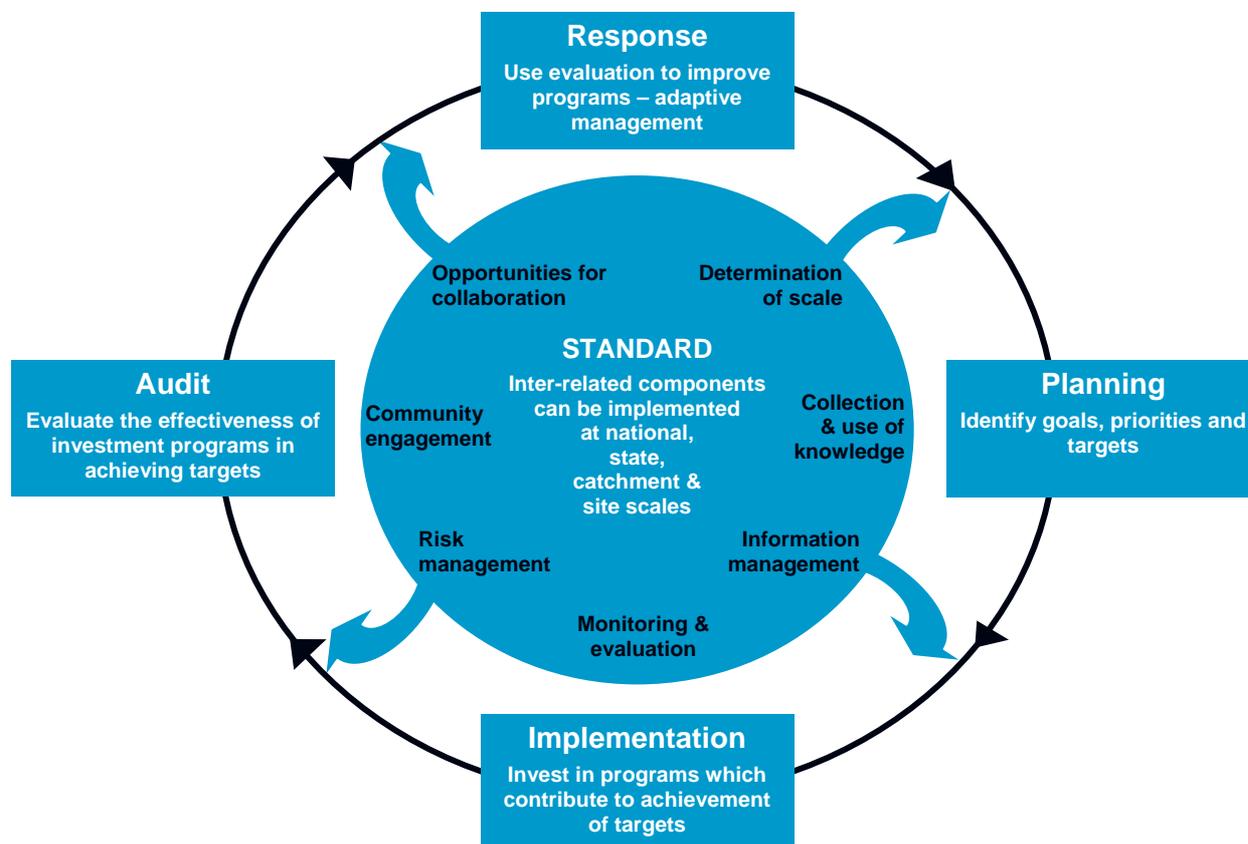
Importantly, the Standard, the NRC audit process and the state-wide targets together constitute an integrated approach to achievement of natural resource management goals.

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<sup>2</sup> The first version of this guide should be available in September 2005.

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

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



**Figure A1.1:** The standard, together with the state-wide targets and a learning based audit process, will promote the achievement of state-wide and catchment goals through applied adaptive management.

## 1.4 Who should apply the Standard?

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

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

Such organisations may include:

- State agencies

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

## 1.5 Compatibility with other standards

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

## 1.6 Definitions

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

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

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

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

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

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

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

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

## 2 How to use the Standard

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

The Standard comprises 7 components. These are: Collection and use of knowledge; Determination of scale; Opportunities for collaboration; Community engagement; Risk management; Monitoring and evaluation; and Information management.

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

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

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

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

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

## 3 The Standard

### 3.1 Collection and use of knowledge

#### 3.1.1 Required outcome:

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

#### 3.1.2 Guidance:

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

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

Possible steps to achieve this outcome include:

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

### 3.1.3 Evidence requirements:

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

## 3.2 Determination of scale

### 3.2.1 Required outcome:

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

### 3.2.2 Guidance:

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

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

Possible steps to achieve this outcome include:

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

### 3.2.3 Evidence requirements:

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

AND/OR

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

### 3.3 Opportunities for collaboration

#### 3.3.1 Required outcome:

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

#### 3.3.2 Guidance:

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

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

Possible steps to achieve this outcome include:

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

#### 3.3.3 Evidence requirements:

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

AND/OR

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

## 3.4 Community engagement

### 3.4.1 Required outcome:

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

### 3.4.2 Guidance:

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

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

Possible steps to achieve this outcome include:

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

### 3.4.3 Evidence requirements:

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

## 3.5 Risk management

### 3.5.1 Required outcome:

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

### 3.5.2 Guidance:

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

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

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

Possible steps to achieve this outcome include:

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

### 3.5.3 Evidence requirements:

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

## 3.6 Monitoring and evaluation

### 3.6.1 Required outcome:

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

### 3.6.2 Guidance:

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

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

Possible steps to achieve this outcome include:

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

### 3.6.3 Evidence requirements:

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

AND/OR

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

## 3.7 Information management

### 3.7.1 Required outcome:

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

### 3.7.2 Guidance:

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

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

Possible steps to achieve this outcome include:

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

### 3.7.3 Evidence requirements:

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



