




Condamine Catchment
Natural Resource Management Plan 2010



Table of Contents



FOREWORD	4
1.0 INTRODUCTION	6
1.1 Background	6
1.2 Purpose and Scope	6
1.3 Vision Statement	7
1.4 Plan Review Process	7
1.5 Legislative Context	8
2.0 THE CONDAMINE CATCHMENT	9
3.0 OVERARCHING PRINCIPLES	11
4.0 TARGETS	12
4.1 User's Guide to Target Flowcharts	12
4.2 Aspirational Targets	12
4.3 Longer Term Targets	13
4.4 Shorter Term Targets	13
4.5 Strategic Management Actions	13
5.0 RISK ASSESSMENT	17
6.0 MONITORING, EVALUATION, REPORTING AND PROGRAM IMPROVEMENT	21
6.1 What is Monitoring, Evaluation, Reporting and Program Improvement?	21
6.2 National and State Frameworks	21
6.3 Processes under this Plan	21
6.4 Monitoring Approaches	21



6.5	Evaluation	23
6.6	Reporting	23
6.7	Program and Plan Improvement	23
7.0	GLOSSARY	24
8.0	REFERENCES	27
FIGURES/ FLOWCHARTS		
Figure 1	Condamine Catchment Locality	10
Figure 2	Guide to reading the Target Flowcharts	12
Flowchart 1	Water Targets	14
Flowchart 2	Nature Targets	15
Flowchart 3	Land Targets	16
TABLES		
Table 5.1	Qualitative Measures of Likelihood	17
Table 5.2	Description of Measures of Consequences of Impact	18
Table 5.3	Qualitative Risk Analysis Interpretation Matrix – Level of Risk	18
Table 5.4	Results of Risk Assessment	19
Table 6.1	Target Performance Indicators and Monitoring Methods	22
APPENDICES – See attached CD		
Appendix A	Draft Target Comments	
Appendix B	Emerging Issues	
Appendix C	State of the Catchment Report	
Appendix D	Climate Change	

*Our community's plan
for our catchment ...*

Foreword

The Condamine Catchment Natural Resource Management Plan (NRM Plan) is the outcome of an extensive scientific review and stakeholder consultation process.

It combines scientific knowledge and stakeholder priorities in a fashion that will progress NRM outcomes in a strategic and collaborative approach.

This NRM Plan builds on the outcomes from the initial NRM Plan in an evolutionary manner.

We, the undersigned ...

commend the consultative process that was undertaken by Condamine Alliance to develop the NRM Plan and support the priorities and targets within. The NRM Plan gives future investors confidence in achieving results that will have a lasting legacy and we look forward to working in partnership with other stakeholders to deliver the Plan outcomes.



Mr Don Bell
Chair
Darling Downs
Landcare Association



Mrs Mary Lou Gittins
Chair
Condamine Catchment
Management Association



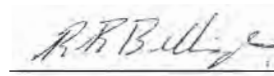
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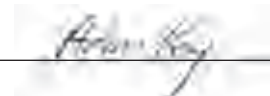
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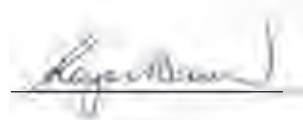
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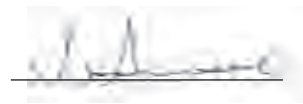
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Mr Dougal Gordon
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Association



Vision

The Condamine community wishes to see viable communities (both economically and socially), improved ecosystem and biological diversity and improved water quality across the catchment, with productive industries that value and protect the natural resource assets in the Condamine catchment. The community also values culturally significant knowledge, heritage and sites.



Introduction

1.0 INTRODUCTION

1.1 Background

The Condamine Catchment Natural Resource Management (NRM) Plan was first developed to support the joint initiative of the Australian and Queensland Governments to repair and conserve the natural environment and ensure the sustainable use of the nation's natural resources.

This is the first review of the Condamine catchment's NRM Plan. The on-going review and development of the Plan is based on a continuous improvement process, which provides optimal natural resource management direction for the catchment over the coming years.

The Condamine Alliance, a community based regional natural resource management organisation, undertook an extensive consultation process with a wide range of stakeholders and developed the targets within this Plan in a scientifically rigorous manner. This Plan will be delivered using a partnership framework by a range of relevant organisations associated with the catchment. Therefore, this Plan is owned by catchment stakeholders with the Condamine Alliance being its custodian.

1.2 Purpose and Scope

This Plan provides an integrated framework for the future sustainable management of natural resources in the Condamine catchment.

It achieves this by:

- Reviewing the current state of natural resources in the catchment, with consideration of socio-economic impacts
- Identifying and prioritising the issues
- Identifying the underlying processes causing the issues
- Ensuring stakeholder engagement in the Plan's development and future involvement in its implementation
- Identifying opportunities for better management of the issues
- Establishing a structure of targets and actions to guide the catchment community to better NRM outcomes for the future
- Providing a basis for strategic regional investment to guide future investment priorities for a range of NRM stakeholders
- Establishing a framework for assessment and review of the NRM Plan, investment priorities and their outcomes

This Plan integrates water, land and nature conservation themes with a series of overarching principles to provide a holistic approach to managing the catchment. It encourages all stakeholders across the catchment to work together to achieve a more sustainable and profitable future and to set a precedent for future generations to do the same.



The remainder of this document is structured as follows:

- Section 2: Provides an overview of the catchment including the current state of its natural resources
- Section 3: Defines the overarching principles expressing the philosophy for the implementation and on-going development of the NRM Plan
- Section 4: Presents the Longer Term, and Shorter Term Targets and associated actions for improved natural resource management in the Condamine catchment
- Section 5: Describes the process undertaken to assess the risk associated with the implementation of this Plan and details the outcomes of the assessment
- Section 6: Outlines the Monitoring, Evaluation, Reporting and Program Improvement processes associated with this Plan
- Section 7: Provides a glossary of technical terms used within this document and appendices (on attached CD)

1.3 Vision Statement

The Condamine catchment community wishes to see viable communities (both economically and socially), improved ecosystem and biological diversity and improved water quality across the catchment, with productive industries that value and protect the natural resource assets in the Condamine catchment. The community also values culturally significant knowledge, heritage and sites.

Three values underpinning the vision are:

- Equitable access to natural resources for maintenance of human wellbeing and economic prosperity
- Improvement of the quality of the regional landscape and the cultural, aesthetic, recreational and employment opportunities it provides
- Maintenance of the health and safety of the community by wise allocation, use and management of the catchment's natural resources

The Condamine catchment community is expressing its desire through the development of this Plan to implement measures that achieve long term sustainable growth in a way that allows a clear link to investment and measures the success of the associated actions. A sentiment that commonly emerged during the development of this Plan was the desire to strike a balance between economic viability, community development and sustainable use of natural resources within the catchment. Associated with this was the need to increase the awareness and understanding of the balance between sustainable economic development and the environment in the urban and rural populations of the catchment.

1.4 Plan Review Process

1.4.1 Why was the Inaugural NRM Plan Reviewed?

Condamine Alliance is committed to continual improvement across all aspects of natural resource management. The state of the catchment, similar to many areas in southern Queensland, is changing rapidly. These changes together with

the availability of new data, information and technology mean that the inaugural Plan, although only four years old, required updating. Additionally, relatively new issues affecting natural resource management (such as climate change and the booming mining and energy industries) are also facing the catchment compelling Condamine Alliance to embrace an adaptive approach to natural resource management to secure the catchment's long term future.

During the NRM Plan review significant changes were made to the Plan and its targets. Generally, this Plan was made more user-friendly making it more likely to be readily adopted by state and local government, industry, community groups and individuals across the catchment. Targets were also strategically refined and changed to be more specific, measurable, achievable, realistic and time-bound. An overview of the Plan review process is provided in the following section.

1.4.2 Methodology

The review of the inaugural NRM targets involved six phases. Phase 1 involved a scientific assessment of the targets to ensure that all estimated targets had a firm and justifiable scientific basis, where possible. Phase 2 incorporated community consultation, via a series of workshops conducted at 10 locations within the catchment, to document the suggestions and opinions of the community on the revised NRM Plan. Phase 3 involved a gap analysis review of industry strategic plans to ensure target continuity between government and industry strategic plans and the reviewed NRM Plan. Phase 4 was an independent review of the consultation process associated with

the development of the NRM Plan. Phase 5 involved inviting key stakeholders to a workshop for each NRM Plan theme to develop Strategic Management Actions associated with each target and Phase 6 was a final review of the draft NRM Plan by stakeholders. The outcome from the successful completion of these six phases is the complete revision and update of the NRM Plan targets. Further details of these phases are provided in the following sections.

PHASE 1 – SCIENTIFIC REVIEW

A comprehensive review of the inaugural Plan targets was undertaken to ensure each target had been developed with a sound scientific or policy basis, and that the target timeframe was realistic and achievable. A background literature search was conducted in conjunction with the review process. The assessment of relevant reports, literature, scientific studies and policy information was used to verify the existing Longer Term Targets and associated Shorter Term Targets, or was utilised to produce new targets based on specific scientific data or information located in the literature. Revised targets were then developed based on this assessment and presented at a scientific leaders review workshop to be further refined where necessary. The scientific leaders workshop was attended by NRM scientists who had a history of work in the Condamine catchment. The workshop:

1. Further reviewed the science behind the inaugural NRM Plan targets
2. Identified gaps in the science behind those targets
3. Developed preliminary targets to address those gaps
4. Assessed the logic framework on a preliminary set of revised targets

PHASE 2 – STAKEHOLDER WORKSHOPS

The results of the initial NRM target review were distributed to stakeholders throughout the catchment via a series of three-hour workshops. These workshops were conducted in Toowoomba, Cambooya, Clifton, Warwick, Dalby, Millmerran, Oakey, Chinchilla, Pittsworth and Crows Nest.

Each workshop incorporated presentations by the Condamine Alliance, Condamine Catchment Management Association and Natural Solutions consultants to provide information on, and an overview of, the newly drafted NRM Plan targets and the review process that had taken place to date. Stakeholders provided feedback and suggestions on each of the three NRM

themes (water, nature, land). Feedback from each workshop was individually evaluated and, where appropriate, changes to the targets were made. Appendix A (on attached CD) includes a summary of the numerous responses made during the workshops and outlines how they were addressed.

In addition to the NRM themes and targets, stakeholders were invited to suggest 'emerging issues' that had not been incorporated into or adequately addressed by the revised NRM targets. These issues were then assessed and included in the targets where appropriate. Appendix B (on attached CD) includes a summary of the emerging issues identified during the workshops and outlines how each was addressed.

Following the broad stakeholder consultation, more focussed consultation occurred with industry organisations, Traditional Owners, Darling Downs Chamber of Commerce, local government and state government. This consultation was primarily focussed on gathering relevant documentation from the respective bodies to cross reference/link Strategic Management Actions (See Section 5) with their respective operational plans.

PHASE 3 – GAP ANALYSIS

Strategic plans from industry stakeholders located in the Condamine catchment (e.g. Queensland Dairyfarmers Organisation, Growcom, Cotton Australia, Meat and Livestock Australia and Grains Research and Development Corporation) were reviewed to identify potential NRM targets. A 'gap analysis matrix' was produced to indicate where:

1. Industry NRM targets aligned with those of the Condamine Catchment NRM Plan
2. An industry strategic plan had overlooked a relevant NRM issue that had been included in the NRM Plan targets
3. An industry strategic plan had identified a NRM issue that had been overlooked in the NRM Plan targets

Identified gaps were then appropriately addressed.

PHASE 4 – INDEPENDENT REVIEW

An independent review on the relevance and effectiveness of the process and outcome of the NRM Plan update was undertaken. This identified strengths and weaknesses within the processes (reviewing the science and the community consultation) used and made recommendations capitalising on strengths and improving the process in the future. These comments were addressed in further stakeholder consultation processes.

PHASE 5 – DEVELOPMENT OF STRATEGIC MANAGEMENT ACTIONS

Following on from Phases 1, 2 and 3, workshops were held with representative stakeholders from industry, state government and consultants to develop Strategic Management Actions for each theme. Draft Strategic Management Actions were developed during the Phase 2 process and these were used as a starting point for workshop participants to assess, amend or develop new Strategic Management Actions. Program logic between the targets and Strategic Management Actions (both within themes and between themes) was also assessed during these workshops.

PHASE 6 – STAKEHOLDER FINAL REVIEW

The final draft NRM Plan was sent to representative stakeholders (e.g. local government, Queensland government, industry groups, and community groups) for review with the specific aim of inviting these organisations to sign the NRM Plan Foreword.

1.5 Legislative Context

The NRM Plan has been developed to align with relevant Australian and Queensland Government legislation and priorities and assumes that statutory obligations are being addressed by those implementing targets and management actions contained herein. Legislative instruments relevant to the NRM Plan and its associated targets and actions include:

AUSTRALIAN:

- Environment Protection and Biodiversity Conservation Act 1999
- Natural Resource Management (Financial Assistance) Act 1992
- Water Act 2007

QUEENSLAND:

- Aboriginal Cultural Heritage Act 2003
- Environmental Protection Act 1994
- Integrated Planning Act 1997
- Land Protection (Pest and Stock Route Management) Act 2002
- Nature Conservation Act 1992
- Vegetation Management Act 1999
- Water Act 2000



The Condamine Catchment

“The Condamine catchment is primarily an agricultural region with a climate and soils that permit crop growth throughout the year.”

2.0 THE CONDAMINE CATCHMENT

The Condamine catchment covers an area of 2 500 000 hectares to the west of the Great Dividing Range, Queensland (Figure 1). Situated, at the head of the Murray-Darling Basin, much of the catchment is extensive floodplain. To its east, the catchment is bounded by the Great Dividing Range with Mt Superbus (east of Warwick) being the highest peak (1,375m). To its west, the catchment is bounded by the sandstones of the Herries Range, which are associated with the Kumbarilla Ridge, a major natural and structural feature of the area. Following recent local government reforms by the Queensland Government, the Condamine catchment is now comprised of areas in three main local government jurisdictions: Toowoomba Regional Council, Southern Downs Regional Council and Western Downs Regional Council (Figure 1).

The Condamine catchment is primarily an agricultural region with climate and soils that permit crop growth throughout the year. Cattle and sheep grazing also occurs alongside intensive animal production including feedlots, piggeries and poultry farms. Land use within the catchment has changed rapidly with population growth and resulting urban sub-division and reduction of lot sizes significantly altering the catchment’s landscape in recent years, especially in and around major towns in the eastern part of the catchment (Preston et al., 2007). There has also been a rapid expansion of coal mining, coal seam methane production and energy generation within the catchment. The catchment also supports a range of ecosystem types (primarily on non-arable lands) which provide habitat and

resources for a diversity of native flora and fauna species, some of which are listed as threatened (i.e. endangered, vulnerable or rare) at the Queensland (*Nature Conservation Act 1992*) and/or Australian (*Environment Protection and Biodiversity Conservation Act 1999*) levels. The catchment also contains a variety of wetlands, including Lake Broadwater which is listed on the Directory of Important Wetlands of Australia (Environment Australia, 2001).

A new assessment of the state of the catchment was developed to provide a broad overview of the various environmental issues associated with management and conservation of the catchment’s nature, water and land resources. This report forms part of the review process for the NRM Plan and updates the previous State of the Catchment reports which were included in the inaugural NRM Plan (Condamine Alliance, 2005) and focuses on new information that has become available during the period since 2004.

Appendix C (on attached CD) contains this updated report which covers the following catchment issues:

- Water — considers natural resources and issues relating to water including: Condamine River and tributaries, wetlands, dams and weirs, groundwater resources, wastewater from industry and other sources, and overland flow
- Nature — specifically considers all aspects of biodiversity and conservation related natural resources within the catchment including: flora, fauna, habitats, connectivity and configuration. Given the inter-related

nature of these biodiversity aspects, many of the existing conditions and threats are relevant to more than a single aspect

- Land — considers natural resources and issues relating to land including: soil resources, effluent and waste management, salinity and land use
- Social — considers social and economic issues relating to natural resources including: population, education and economic resources
- Industry — considers the Condamine catchment’s key industries and relevant issues including, but not limited to: those related to the influence of drought, floods, resource degradation, salinity and competition for resources
- Infrastructure — considers infrastructure resources and issues relating to its development and maintenance including: drainage and water supply systems, telecommunication networks, energy, transport network corridors and towns and buildings
- Atmosphere — considers issues relating to air quality, noise and climate change

Within each issue there are three sections. These are:

- Information Sources — an overview of the most recent and relevant sources of information used in the report. Available information was sourced via available technical reports, desktop reviews and searches and through communications with Condamine Alliance and other relevant professionals
- Existing resource condition/status — provides an overview of the known current condition/status of the catchment’s natural resources (and conservation status where relevant)
- Threats and threatening processes — identifies current and potential future actions/processes that negatively influence (or are likely to) the long term persistence and integrity of the catchment’s natural resources

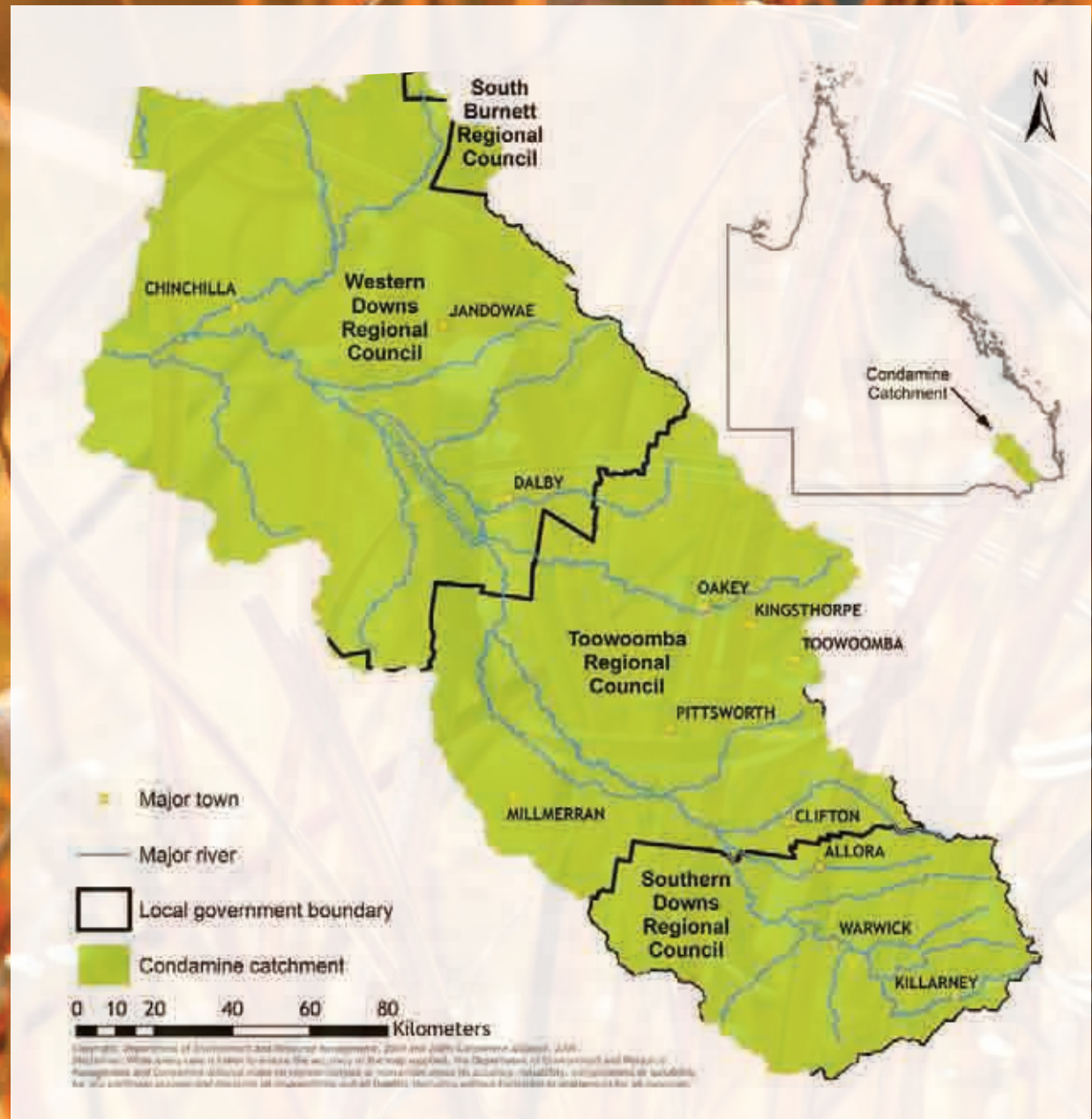


Figure 1 Condamine Catchment Locality



3.0 OVERARCHING PRINCIPLES

Six overarching principles for this Plan were developed during the stakeholder workshops. These principles are common across all themes and targets, and are considered to represent the overall philosophy for the implementation and on-going development of this Plan. Each of these principles needs to be considered when implementing targets and actions within this Plan.

Coordination and Linkage

Implementation of this Plan will be done in coordination with appropriate agencies, government departments, community groups, industry and any other relevant stakeholders. In addition, plans and programs developed under this Plan will be linked to and address relevant local, state, national and international requirements.

Strategic Planning

NRM Plan targets will be incorporated into appropriate local, state and national strategic planning documents through liaison with relevant government departments and industry organisations.

Sustainability

Actions undertaken during implementation of this Plan will promote the responsible use and equitable distribution of the catchment's natural resources to ensure the long term sustainability and viability of the natural environment, industry, agriculture and livelihoods in the Condamine catchment.

Climate Change

The impacts and effects of climate change will be a major consideration in implementation of all aspects of this Plan. Appendix D (on attached CD) provides a summary of likely climate change issues for the catchment.

Cultural Heritage and Knowledge, both Indigenous and European

Actions undertaken during implementation of this Plan will ensure the conservation of Traditional knowledge, and European and Indigenous Cultural Heritage of the Condamine catchment.

Community Capacity Building

Implementation of this Plan will involve the development of community capacity building and awareness programs to increase knowledge and implementation of best management practices. Implementation strategies, review/monitoring and continual improvement will be part of implementation programs.



4.0 TARGETS

This section sets out the new targets developed as a result of the review process. The new targets are presented by theme (water, nature, land) across three flowcharts. Section 4.1 provides guidance on the use of the flowcharts, while Sections 4.2 to 4.5 provide additional details and background information on the Aspirational Targets, Longer Term Targets, Shorter Term Targets and Strategic Management Actions respectively. The targets and Strategic Management Actions are presented to reflect the logic framework used in their development.

4.1 User's Guide to Target Flowcharts

Colours

Three themes have been developed to encompass the Longer Term Targets and Shorter Term Targets and each is represented by a specific colour: water (blue), nature (green) and land (brown). Each theme is positioned on a separate flowchart and consists of three levels: Overarching Principles (purple boxes), Longer Term Targets (dark and colour coded according to theme), Shorter Term Targets (pale and colour coded according to theme) and Strategic Management Actions associated with the delivery of the targets (Figure 2).

Tags

Although each Shorter Term Target and Longer Term Target has been allocated to a specific theme, there are some obvious and necessary linkages between themes. Where these links exist they have been indicated by a colour coded tag, positioned on the side of the target box. The colour indicates the theme to which the target is linked, while the specific target number is indicated inside the tag (Figure 2).

Arrows

Linear relationships between targets within a particular theme are indicated by connecting arrows. Arrows are unidirectional and are not used to show relationships amongst themes (Figure 2).

Glossary

Section 7 provides a glossary of the technical terms referred to within the targets.

4.2 Aspirational Targets

Each theme is defined by a long term aspirational target that aims to set the desired condition of the natural resources in that particular theme over the longer time frame of 50 or more years. The following aspirational targets set out a longer term vision for the catchment by guiding regional planning and establishing a context for measurable and achievable Longer Term targets.

4.2.1 Water

The Condamine catchment community will effectively and sustainably manage its surface water and groundwater assets to ensure the long term environmental, recreational and economic viability of the catchment's water resources. The Condamine catchment community will lead best practice in water resource management by combining sustainable water use with productive rural and industry growth, while improving the long term environmental value of natural aquatic ecosystems.

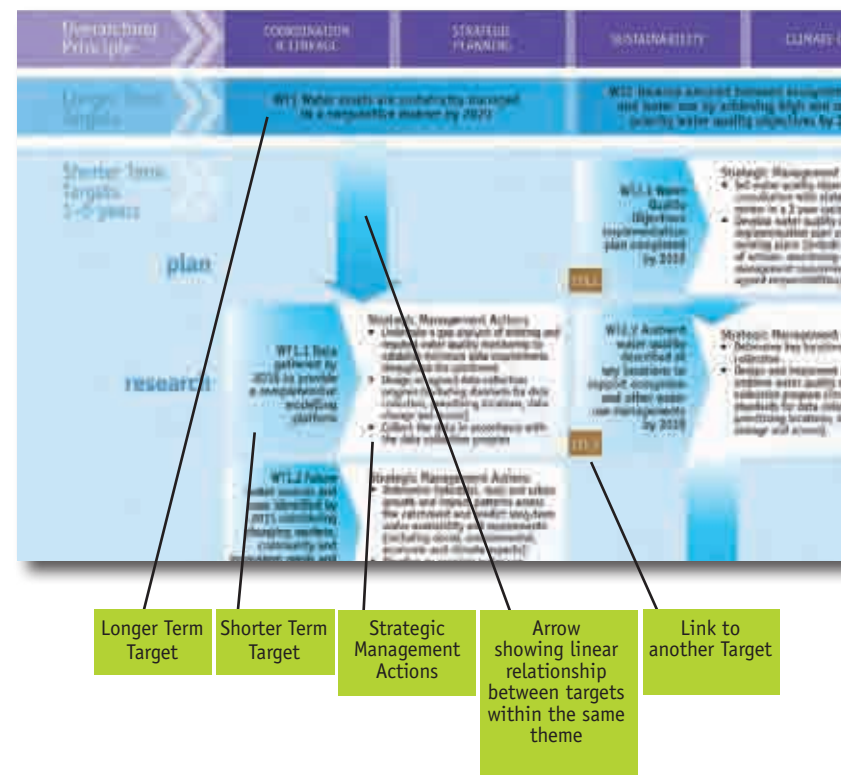


Figure 2 Guide to reading the Target Flowcharts



The desired conditions for the natural resources managed under the water theme will be achieved by:

- Best practice water management planning and use processes functioning effectively by 2054
- Community capacity effectively maintaining sustainable use and management of water quality and quantity by 2054
- Water sustainably supporting a range of environmental, economic and social desires by 2054

4.2.2 Nature

The catchment community will manage, rehabilitate and protect its natural fauna and flora assets so that the region and its ecosystems are not as vulnerable to threatening and degrading processes. Instilling the community with a culture of value and pride in the region's natural assets is part of this aspiration and will ensure that the Condamine catchment's environmental heritage is treasured for generations to come.

The desired conditions for the natural resources managed under the nature theme will be achieved by:

- Native vegetation communities and biodiversity maintained, protected and/or enhanced by 2054
- Native vegetation communities functioning to support the range of flora and fauna diversity by 2054
- Environmental values and ecosystem services of a range of natural and modified landscapes are recognised by 2054
- The impacts of threatening processes are not significant across the catchment by 2054

4.2.3 Land

The Condamine catchment community will develop and implement land management strategies that permit balanced use of land resources by industry and agriculture, while providing opportunities for urban growth and environmental conservation.

The desired conditions for the natural resources managed under the land theme will be achieved by:

- The community value and protected land assets in the catchment by 2054
- Improved productive 'fit for purpose' health of soils by 2054
- Increasing awareness and understanding of a balanced use of natural resources by the community by 2054
- A balance created between the economic viability, community development and environmental use of natural resources within the catchment by 2054

4.3 Longer Term Targets

Longer Term Targets are specific, time-bound (approximately 10 to 20 years), measurable and achievable targets relating largely to the desired condition of a natural resource. Longer Term Targets have been developed under each of the water, nature and land themes and are shown on Flowcharts 1 to 3.

4.4 Shorter Term Targets

Shorter Term Targets (1 to 5 years), relate mainly to

management actions or capacity-building, and contribute to progress towards the Longer Term Targets. Shorter Term Targets have been developed under each of the water, nature and land themes and are shown on Flowcharts 1 to 3.

4.5 Strategic Management Actions

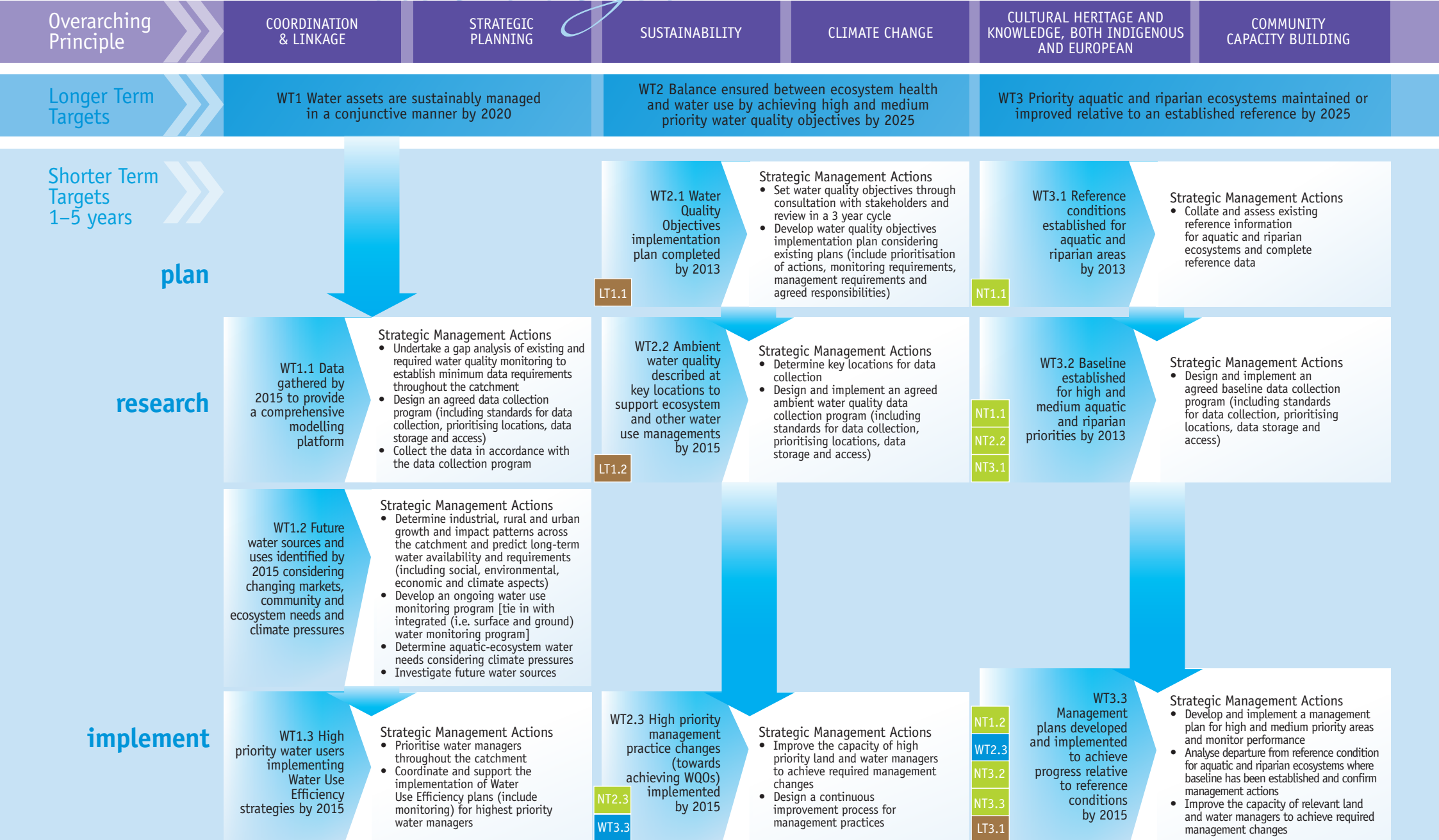
Strategic Management Actions have been developed to contribute to the successful development, implementation and/or completion of the targets. As their name implies, Strategic Management Actions are actions as opposed to targets. Targets provide guidance on the 'where do we want to be' aspect, whereas Strategic Management Actions focus on the 'how do we want to get there' component.

The majority of the Strategic Management Actions were developed by:

- Reviewing the inaugural NRM Plan and amending actions that weren't strategic in nature but supported the revised Shorter Term Targets
- Reviewing industry strategic and operational plans and consulting with industry to identify appropriate actions that would be suited to the NRM Plan themes
- Reviewing local and state government strategic and operational plans and consulting with government to identify appropriate actions that would be suited to the NRM Plan themes
- Facilitating theme specific workshops with relevant government and industry representatives

Flowchart 1

Water targets



Flowchart 2

Nature targets

Overarching Principle

COORDINATION & LINKAGE

STRATEGIC PLANNING

SUSTAINABILITY

CLIMATE CHANGE

CULTURAL HERITAGE AND KNOWLEDGE, BOTH INDIGENOUS AND EUROPEAN

COMMUNITY CAPACITY BUILDING

Longer Term Targets

NT1 High and medium priority nature assets increased in extent, connectivity and abundance from 2013 levels by 2025

NT2 The condition of high and medium priority nature assets improved as planned from 2013 levels by 2025

NT3 The condition of high and medium priority landscape scale ecosystems maintained or improved from 2013 levels by 2025

Shorter Term Targets 1-5 years

plan

NT2.1 Integrated management plans developed by 2013 to improve the condition of high and medium priority nature assets based on existing information

Strategic Management Actions

- Collate and assess existing management and recovery plans that impact on the condition of priority species and ecosystems
- Develop management plans (at catchment and site specific scales) for priority species and ecosystems

NT3.1 Current and future ecosystem functionality better understood at a landscape scale and incorporated into planning schemes/management plans by 2015

Strategic Management Actions

- Collate and assess existing knowledge of landscape scale ecological functionality and incorporate into planning instruments
- Prioritise areas for restoration according to contribution to functionality and develop associated management plans

WT3.2

research

NT1.1 Quantity and spatial configuration requirements of nature assets determined by 2013 to ensure sustainable landscape health considering community needs and climate pressures

WT3.1
WT3.2
LT3.1

Strategic Management Actions

- Determine the abundance, distribution and condition of priority species and ecosystems
- Determine ecological and management requirements (extent and configuration) of priority species and ecosystems
- Determine the extent and predicted Regional Ecosystem classification of regrowth vegetation and prioritise regrowth for conservation
- Determine the ecosystem services and socio-economic impacts of priority species and communities

NT2.2 Baseline conditions established for high and medium priorities by 2013

WT3.2
NT1.1

Strategic Management Actions

- Establish a Priority Species and Ecosystems Taskforce to identify gaps in knowledge and means to gain required information
- Determine the condition of priority species (including population and habitats) and ecosystems
- Determine ecological and condition management requirements of priority species and ecosystems
- Determine the ecosystem services and socio economic impacts of priority species and communities

NT3.2 Impacts of catchment and climate pressures on nature assets better understood and adaptive management strategies determined by 2015

WT3.3
LT3.1

Strategic Management Actions

- Determine functionality of ecological corridors in context of catchment and climate pressures
- Assess impacts of future catchment pressures and climate scenarios on landscape scale ecological functionality of substantive habitat nodes (see Natural Solutions 2007 Bioregional Corridors report)
- Determine management strategies appropriate to likely future catchment pressures and climate scenarios

implement

NT1.2 Management practice changes implemented by 2015 towards achieving high and medium priorities

WT3.3

Strategic Management Actions

- Develop management plans (at catchment and site specific scales) for priority species and ecosystems
- Implement management plans' recommendations in a prioritised manner incorporating community capacity building

NT2.3 Management practice changes implemented by 2015 towards achieving high and medium priorities

WT3.3

Strategic Management Actions

- Improve community capacity associated with management of priority species' and ecosystems' condition
- Coordinate and support the implementation of existing management and recovery plans
- Implement catchment and site specific management plans

NT3.3 Management practices implemented by 2015 (incorporating recommendations from relevant investigations) toward achieving ecosystem functionality

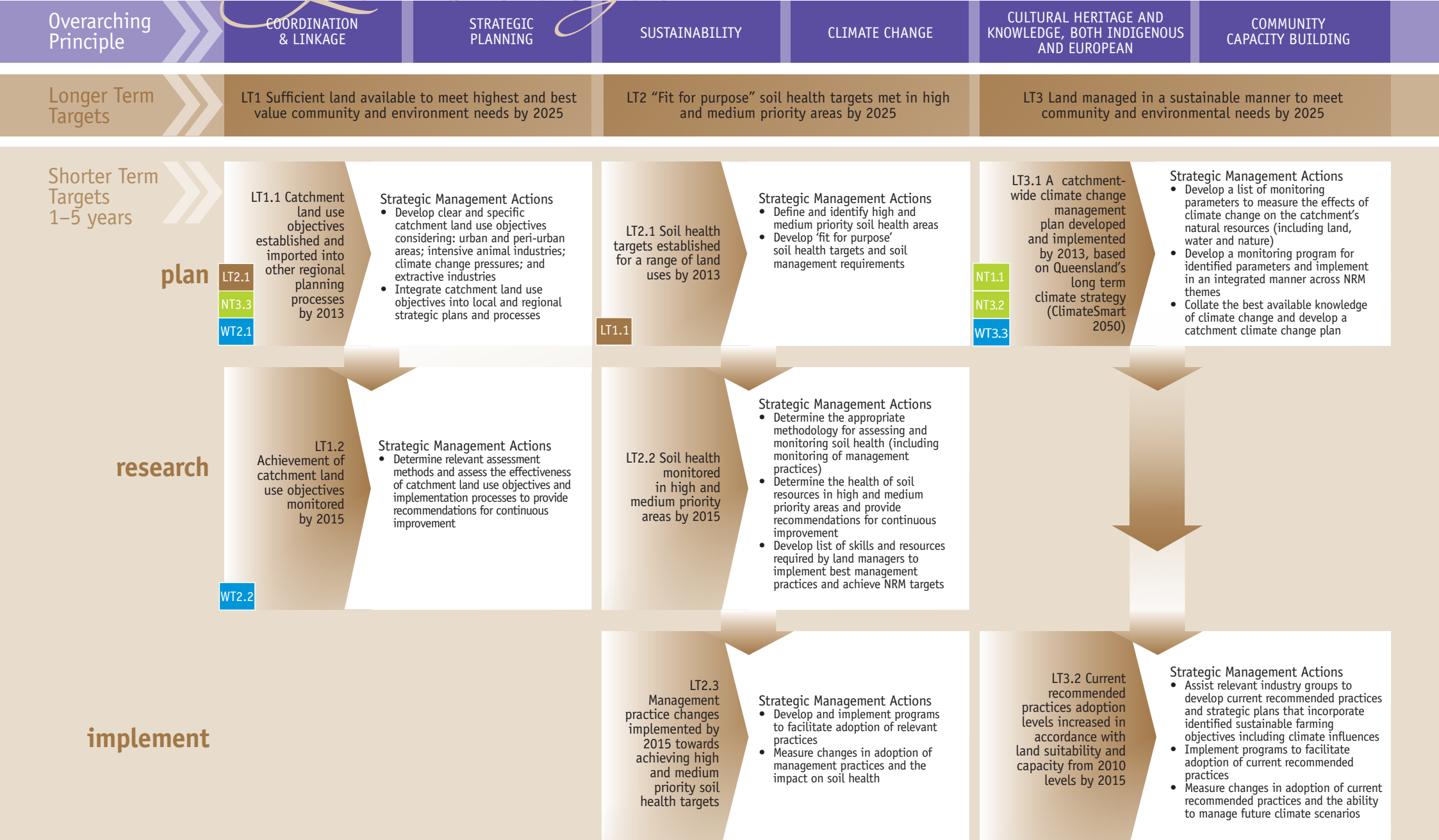
WT3.3
LT1.1

Strategic Management Actions

- Establish, enhance and maintain as required, primary ecological corridors that cross the Condamine catchment, incorporating community capacity building
- Undertake community capacity building regarding management strategies appropriate to likely future catchment pressures and climate scenarios (both inclusive and adjacent to areas of priority ecological functionality)
- Restore identified priority areas to improve ecological functionality

Flowchart 3

Land targets





“Risk... the chance of something happening that will have an impact upon objectives ... an event or circumstance and the consequences that may flow from it”

5.0 RISK ASSESSMENT

Condamine Alliance has undertaken an assessment of the risk associated with the implementation of this Plan. This process was based on the *Australian/New Zealand Standard Risk Management AS/NZS 4360:2004*. Risk is defined as the chance of something happening that will have an impact upon objectives and is often specified in terms of an event or circumstance and the consequences that may flow from it. The focus of this risk assessment was to determine the risks associated with implementing this Plan.

The process of analysing risk involved a qualitative evaluation to work through comparative risks. In the qualitative risk

assessment procedure, the probability or likelihood of occurrence was expressed using descriptions, which were then assigned ratings in decreasing order of probability of occurrence. The severity of the consequence was also identified using descriptions and a rating system.

The following tables respectively illustrate the likelihood (Table 5.1) and the consequences (Table 5.2) rating systems used for the assessment, based on AS 4360:1999. Table 5.3 illustrates the qualitative risk analysis interpretation matrix. The descriptors were modified to be applicable for the assessment of risk associated with the implementation of this Plan.

TABLE 5.1 QUALITATIVE MEASURES OF LIKELIHOOD

RATING	CATEGORY	DESCRIPTION
1	Very Likely	Is expected to occur in most circumstances
2	Likely	Will probably occur in most circumstances
3	Unlikely	Could occur at some time
4	Very Unlikely	May occur only in exceptional circumstances



TABLE 5.2 DESCRIPTION OF MEASURES OF CONSEQUENCES OF IMPACT

RATING	CATEGORY	DESCRIPTION
1	Catastrophic	Causes serious environmental damage, huge financial loss, catastrophic affect to community, catastrophic affect to industry
2	Critical	Causes environmental impacts on catchment and surrounds with some detrimental effects, moderate financial loss, major detrimental affect to community, major detrimental affect to industry
3	Marginal	Causes marginal environmental impact on catchment with some detrimental effects; high financial loss, moderate detrimental affect to community, moderate detrimental affect to industry
4	Negligible	Causes no significant environmental impact on catchment, low financial loss, no detrimental affect to community, no detrimental affect to industry

TABLE 5.3 QUALITATIVE RISK ANALYSIS INTERPRETATION MATRIX – LEVEL OF RISK

LIKELIHOOD CONSEQUENCES	1 (Catastrophic)	2 (Critical)	3 (Marginal)	4 (Negligible)
1 (Very Likely)	1	2	3	4
2 (Likely)	2	4	6	8
3 (Unlikely)	3	6	9	12
4 (Very Unlikely)	4	8	12	16

1 – 2 = Extreme risk: detailed research and management planning required at senior levels

3 – 4 = High risk: senior management attention – substantial and site specific controls required

6 - 12 = Moderate risk: management responsibility must be specified

12 - 16 = Low risk: manage by routine procedures

The focus of risk assessment is mitigation. When interpreting a risk analysis it is important to consider both the probability (likelihood) and consequences in order to place the real risk in perspective. The risk assessment process enabled threats to be identified and prioritised and corresponding mitigating actions to be recommended.

“The risk assessment process enabled threats to be identified and prioritised and corresponding mitigating actions to be recommended”

Table 5.4 shows the results of the risk assessment including hazards identified, risk ratings and proposed mitigating actions. Assuming proposed risk mitigation actions are adopted, changes in landscapes associated with urban and peri-urban development, changes in landscapes associated with mining and gas industries as well as changes in legislation/policies are the issues of highest risk pertaining to the successful implementation of this Plan.



TABLE 5.4 RESULTS OF RISK ASSESSMENT

Issue	Impact	Likelihood	Consequence	Risk Rating	Risk Mitigation Action
Changes in Legislation/ Policies	Plans and/or programs need to be redeveloped due to changes in legislation/government policies, Shorter Term Targets delayed or not achieved.	3	2	6	Regular communication with all levels of government.
Government Cooperation	Unable to progress Targets and Strategic Management Actions due to lack of cooperation from state and/or local governments. Targets and Strategic Management Actions delayed or not achieved.	3	3	9	Implement proactive engagement strategies. Regular communication with all levels of government. Directly offer assistance in decision making processes or development of plans where appropriate. Open exchange of data and information.
Industry Cooperation	Unable to progress Targets and Strategic Management Actions due to lack of cooperation from industry groups. Targets and Strategic Management Actions delayed or not achieved.	3	3	9	Implement proactive engagement strategies. Regular communication with relevant industry groups. Directly offer assistance in decision making processes or development of plans where appropriate. Open exchange of data and information.
Community Cooperation	Unable to progress Targets and Strategic Management Actions due to lack of cooperation from community groups. Targets and Strategic Management Actions delayed or not achieved.	3	4	12	Implement proactive engagement strategies. Regular communication with community groups. Condamine Alliance maintain active involvement in local community events to sustain high profile.
Individual Cooperation	Unable to progress Targets and Strategic Management Actions due to lack of cooperation from key individuals. Targets and Strategic Management Actions delayed or not achieved	3	4	12	Regular, targeted communication (verbal and written) with priority individuals.



Issue	Impact	Likelihood	Consequence	Risk Rating	Risk Mitigation Action
NRM Plan not Recognised	Revised NRM Plan not officially recognised by the Queensland and/or Australian Government. Loss of funding/opportunities for implementing this Plan.	4	4	16	Ensure NRM Plan development guidelines are addressed by this Plan. Liaise closely with Queensland and Australian Governments.
Loss of Funding	Insufficient funds to successfully implement activities towards Targets and Strategic Management Actions.	3	3	9	Efficient and effective financial planning process. Risk-based approach to distribution of funds.
Lack of Reliable Baseline Data	Insufficient baseline data to develop plans/programs, plans/programs ineffective. Targets and Strategic Management Actions delayed or not achieved.	3	3	9	Targets and Strategic Management Actions identified in this Plan to obtain baseline data where required. Established processes for gathering and storing data.
Unfavourable Climatic Conditions	Climatic conditions unfavourable for implementation of activities towards Targets and Strategic Management Actions.	2	4	8	Project selection and project management processes to include assessment of climatic conditions for appropriate projects.
Changes in Landscapes Associated with Mining and Gas Industries	NRM priorities at a site specific scale change. Significant impact on natural resources associated with mining and gas industries. Missed opportunity for Targets and Strategic Management Actions to be fast tracked in conjunction with rehabilitation activities.	3	2	6	Liaise closely with local and state governments.
Changes in Landscapes Associated With Urban and Peri-urban Development	NRM priorities at a site specific scale change. Significant impact on natural resources associated with urban and peri-urban development.	3	2	6	Liaise closely with local and state governments.



6.0 MONITORING, EVALUATION, REPORTING AND PROGRAM IMPROVEMENT

6.1 What is Monitoring, Evaluation, Reporting and Program Improvement?

“Monitoring, Evaluation, Reporting and Program Improvement is viewed as a continuous cycle of participation and communication rather than as a single evaluation event. Monitoring, Evaluation, Reporting and Program Improvement promotes learning and adaptive management in response to progressive monitoring and evaluation which enables improvement in program design and achievement of desired outcomes.” (Australian Government, 2008)

6.2 National and State Frameworks

This Monitoring, Evaluation, Reporting and Program Improvement plan aligns with the approaches proposed by the Queensland and Australian Governments. Both adopt a program logic approach to monitoring and evaluation and include reporting and improvement as important focal elements.

6.2.1 Australian Government Framework

In March 2009, the Australian Government released the *Australian Government Natural Resource Management Monitoring, Evaluation, Reporting and Improvement Framework*. This document provides a conceptual framework to guide Australian NRM organisations in the development and application of Monitoring, Evaluation, Reporting and Program Improvement principles to evaluate the success of their NRM programs. A copy of the Framework can be downloaded from the Australian

Government website at <http://www.nrm.gov.au/publications/frameworks/pubs/meri-framework-march09.pdf>

6.2.2 State Government Framework

The state government is currently revising the *Queensland Monitoring and Evaluation Implementation Plan for the National (Australian & State) Programs* (Queensland Government, c2005), which was drafted under the now closed National Action Plan for Salinity and Water Quality and the Natural Heritage Trust programs. Implementation plans will be updated to align with the requirements of any new funding programs and the *Australian Government Natural Resource Management Monitoring, Evaluation, Reporting and Improvement Framework* (Australian Government, 2009).

6.3 Processes under this Plan

6.3.1 Impact of Partnership Delivery Model

The partnership model adopted by the Condamine Alliance for delivering the NRM Plan promotes the involvement and collaboration of many groups and individuals towards sustainable NRM and requires the devolvement of Monitoring, Evaluation, Reporting and Program Improvement activities, to some extent, to these collaborators. Through this process, there may be a variety of individuals and groups undertaking Monitoring, Evaluation, Reporting and Program Improvement activities within the catchment but these activities will be coordinated through the framework provided in this section of the NRM Plan and overseen by Condamine Alliance.

6.3.2 Development of Monitoring, Evaluation, Reporting and Program Improvement Plans

Monitoring, Evaluation, Reporting and Program Improvement plans will be developed to support the evaluation of investment programs towards achieving the targets agreed by the catchment community through this NRM Plan and against the goals of the investment providers/funding bodies. The process for developing these Monitoring, Evaluation, Reporting and Program Improvement plans includes:

- Document the program logic and key result areas
- Determine the key indicators of program performance against the logic
- Establish appropriate monitoring and evaluation approaches for these indicators
- Identify the methods for reporting evaluation results and for continuous improvement
- Develop implementation plans that define the activities required to monitor and evaluate, report on and improve the program

6.4 Monitoring Approaches

6.4.1 Standardisation

Standard methods will be adopted for similar monitoring activities, where possible, to promote the potential for comparison and aggregation of the results. Where methods exist that are being adopted by other NRM organisations (e.g.

“Performance indicators ... will encompass more than the impact of activities on the water, nature and land of the Condamine catchment”



other regional bodies, state or local government) for specific monitoring and evaluation (e.g. remnant vegetation condition monitoring), these methods or easily compatible methods will be adopted.

This standardisation process will provide a suite of monitoring and evaluation methods that programs will draw from to allow the accumulation of data towards assessment of progress towards achievement of the NRM Plan targets.

6.4.2 Performance indicators

Performance indicators within program Monitoring, Evaluation, Reporting and Program Improvement plans will encompass more than the impact of activities on the water, nature and land of the Condamine catchment. They will also address the effectiveness of uptake strategies, engagement strategies and the incorporation of contextual foundational information in program design.

Key performance indicators that will assist these programs with the accumulation of data towards assessment of progress towards achievement of the NRM Plan targets are provided in Table 6.1.

6.4.3 Methods

The monitoring methods proposed for measuring the performance indicator for each target are also outlined in Table 6.1.

TABLE 6.1 TARGET PERFORMANCE INDICATORS AND MONITORING METHODS

TARGET TYPE	KEY PERFORMANCE INDICATOR/S ¹	MONITORING METHOD/S
Longer term targets		
WATER THEME		
Quantity (WT1)	Conjunctive, sustainable water management	Expert review of water management
Quality (WT2)	Balance between water use and ecosystem health	Score based technical assessment
Systems (WT3)	Improved wetland ecosystems	Score based technical assessment
NATURE THEME		
Quantity (NT1)	Improved habitat extent, connectivity and abundance	Global Information System analysis of extent and connectivity Specific abundance measurement as appropriate
Quality (NT2)	Improved habitat condition/health	Score based technical assessment
Systems (NT3)	Improved landscape-scale ecosystems condition	Score based technical assessment
LAND THEME		
Quantity (LT1)	Balanced land availability for highest use	Expert review of planning instrument inclusions
Quality (LT2)	'Fit for purpose' soil conditions maintained	Score based technical assessment
Systems (LT3)	Improved land management	Practice change assessment
Shorter term targets		
Plan	Complete, appropriate, science-based plans developed as required	Expert review of plans' content and processes
Research	Improved understanding of catchment processes and management	Assessment of improved understanding against knowledge gaps
Implement	Improved management practices	Practice change assessment

¹ Measured at site of works



6.5 Evaluation

Evaluation of monitoring results to determine progress towards targets will vary depending on the indicator, the monitoring method and the timeframe of the relevant target. In general, data to support these evaluations will be collected through project and program implementation and will thus be measured at the point of investment. Where available, Queensland Government and other available resource condition datasets will be used to provide context to these evaluations.

6.6 Reporting

6.6.1 Stakeholders

Various stakeholders have an interest in the outcomes of the monitoring and evaluation of regional NRM activity investment and the progress towards achieving the targets in this Plan. These include, but are not limited to:

- Funding organisations (e.g. Australian and Queensland Governments)
- The wider catchment community (e.g. individual land managers and tourists)
- Community groups (e.g. Landcare and Toowoomba and Region Environment Council)
- Industry groups (e.g. Queensland Dairyfarmers Organisation)
- Researchers (e.g. CSIRO, cooperative research centres and universities)

- Infrastructure managers (e.g. railway, road and power corridor managers)
- Policy makers (e.g. Queensland Government and ministers)
- Planners (e.g. local governments)
- Other natural resource managers (e.g. Sunwater and Queensland government agencies)

6.6.2 Requirements

Reporting results to these varying audiences will require a number of different approaches. Contractual reporting requirements will be met for reporting to funding bodies through aligned reporting requirements placed by Condamine Alliance on their contracted partners.

Other stakeholders' reporting needs will be met through the implementation of a targeted communications strategy and a defined knowledge management strategy.

6.7 Program and Plan Improvement

6.7.1 Program improvement

Each strategic investment proposal developed by Condamine Alliance will be supported by a Monitoring, Evaluation, Reporting and Program Improvement plan that incorporates the learnings and outcomes of previous programs and evaluations. The outcomes of each investment cycle's Monitoring, Evaluation, Reporting and Program

Improvement plan will include program improvement recommendations.

6.7.2 NRM Plan review

This NRM Plan will be reviewed annually for progress towards achieving targets as part of reporting, program design and program improvement processes. A formal review will be conducted in three to five years as the Shorter Term Targets are achieved and new targets are required to further progress towards the Longer Term Targets. Other triggers for formal reviews also include (Queensland Government, 2007b):

- Alignment
- Changes in policy, legislation or regulation
- New knowledge, information and improvement
- Emergence of a new regional issue
- Making targets S.M.A.R.Ter (Strategic, Measurable, Achievable, Realistic and Time-bound)



7.0 GLOSSARY

TERM	DEFINITION
Abundance	In the context of flora and fauna, abundance refers to the number of individuals of a particular species present within an ecosystem or region.
Anthropogenic	Effects, processes, objects or materials that are derived from human activities, as opposed to those occurring in natural environments without human influences.
Aquatic ecosystem	Ecosystems (see Ecosystem) that are permanently or periodically inundated and include plants or animals that are adapted to and dependent on living in wet conditions for at least part of their life cycle (based on EPA wetland definition).
Aspirational Target	These longterm (50+ years) targets are broad and generalised, and represent the desired outcome that results from the successful implementation and completion of Shorter Term (3–5 years) and Longer Term (5–10 years) Targets.
Best Management Practice	Methods or techniques found to be the most effective and practical means in achieving an objective (such as preventing or minimizing pollution) while making the optimum use of the organisation's or individual's resources. (BusinessDictionary.com 2009)
Community capacity building	Activities and processes designed to help people improve their awareness, knowledge, skills and management to adapt to changing conditions.
Conjunctive water management	The management of connected surface water and groundwater resources in a coordinated way.
Diversity	In the context of flora and fauna, diversity refers to the number of different species present within an ecosystem or region and the genetic variety within the species.
Ecological functionality	Functional aspects of an ecosystem e.g. nutrient cycling in soil or water.
Ecosystem	A system made up of a community of animals, plants and bacteria and their interrelated physical and chemical environment.

*Ecosystem:
A system made
up of a community
of animals, plants
and bacteria and
their interrelated
physical and chemical
environment.*

7.0 GLOSSARY (continued)

TERM	DEFINITION
Ecosystem services	The services people obtain from their environments and the economic and social values inherent in these services.
Effluent	The sewage or industrial liquid waste that is generated by sewage treatment plants, industry, or septic tanks.
Endangered	A species is considered endangered if it has not been seen in the wild over a period that is appropriate for the species' life cycle, or the species may be in danger of extinction, particularly if a threatening process continues.
Fit for purpose	In the context of soil health, refers to the minimum level of soil health at which the land is suitable for a particular use, such as grazing, cropping or development.
Groundwater	The supply of fresh water found beneath the Earth's surface, usually in aquifers, which supply wells, bores and springs.
Shorter Term Targets	These targets (1-5 years) are practical and actionable (i.e. they have a goal and an outcome) and measurable (i.e. the outcome can be recorded as a success or failure). The implementation of one or more Shorter Term Targets leads to the successful completion of a Longer Term Target.
Linear infrastructure	Infrastructure that is developed linearly, such as roads, rail, pipelines and powerlines.
Local government strategic planning	Statutory strategic processes undertaken by local governments.
Longer Term Targets	These targets (10-20 years) are accomplished by the successful completion or implementation of Shorter Term Targets. A Longer Term Target is broader and more generalised than a Shorter Term Target. The successful implementation of Longer Term Targets leads to the achievement of an Aspirational Target.
Macroinvertebrate	Traditionally used to refer to aquatic invertebrates including insects, crustaceans, molluscs and worms, which inhabit a river channel, pond, lake, wetland or ocean.
Overarching Principle	An ideal or philosophy for the development and implementation of this Plan that is common amongst all three themes.
Peri-urban	Low density housing and road development on the periphery of urban areas, still retaining small areas of rural land within networks of suburban building.
Pest	An animal which has characteristics that are regarded as injurious or unwanted, causing environmental and/or economic harm.
Priority sites	A priority site is one that will be addressed first by the NRM targets because it is deemed to be of higher social, economic or environmental value, or because it requires immediate and urgent action.
Priority species and communities	As determined by legislation and Australian, Queensland, regional and local priority setting processes.



A species is considered endangered if it has not been seen in the wild over a period that is appropriate for the species' life cycle, or the species may be in danger of extinction, particularly if a threatening process continues.

7.0 GLOSSARY (continued)

TERM	DEFINITION
Regional ecosystem	Vegetation communities in a bioregion that are consistently associated with a particular combination of geology, landform and soil (Sattler and Williams 1999)
Remnant	Vegetation where the dominant canopy has more than 70% of the height and more than 50% of the cover relative to the undisturbed height and cover of that stratum and is dominated by species characteristic of the vegetation's undisturbed canopy (Neldner et al 2005)
Riparian	Vegetation community that grows adjacent to a waterway, such as a creek, river or pond and influences the waterway's ecological processes.
Risk	The chance of something happening that will have an impact on objectives and often specified in terms of an event or circumstance and the consequences that may flow from it (<i>Australian Standard for Risk Management, AS/NZS 4360:1999</i>). The most widely accepted formula used to calculate risk is "likelihood" (the probability or frequency of an event) x "consequence" (the outcome or impact of an event).
Salinisation	See Salinity.
Salinity	The process by which soluble salts accumulate within the soil and the land becomes salt-affected.
Sequenced	In the context of land development, refers to the progressive development of land and associated infrastructure for urban purposes in a planned manner in accordance with Local Government Strategic Planning.
Significant	In the context of impact of weeds and pests, significant refers to an impact that is measurable by either environmental or economic assessment.
Soil health	The condition of the soil, including its ecosystems (minerals, nutrients, and microbial activity), pH and structure. Often used synonymously with soil quality.
Surface water	Precipitation which does not soak into the ground or return to the atmosphere by evaporation or transpiration, and is stored in streams, lakes, wetlands and reservoirs.
Sustainable	The ability of an ecosystem, or one facet of an ecosystem, to maintain ecological processes and functions, biological diversity and productivity over time.
Urban	Land occupied by buildings and related facilities used for residences, industrial sites, institutional sites, public highways, airports and similar uses associated with towns and cities.
Vulnerable	A species is considered vulnerable if its population is decreasing because of a threatening process and it is dependent on a localised or limited habitat that is at risk because of a threatening process.
Waste disposal management action plan	An action plan that combats the unsustainable production of waste and consumption of natural resources by developing a reduce, reuse and recycle strategy.
Weed	Unwanted native or non-native plants that grow in an area, causing environmental and/or economic harm.



**ELECTRONIC COPY OF
NRM PLAN, COMPLETE
WITH FULL APPENDICES**

For an electronic copy of
this document, complete
with appendices, please see
the attached CD



8.0 REFERENCES

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people

water

land

wildlife

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