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## FOREWORD

It is a great privilege to introduce this Strategic Plan to the Condamine catchment community.

It is your Plan. Many of you have contributed to its development and provided thoughtful and considered responses to earlier drafts.

Therein lies its strength. It is truly a document that reflects the views and interests of this Condamine catchment community.

Implementation of the strategic initiatives detailed within the Plan will best be achieved by committing to the values this catchment community subscribes to such as inclusiveness, respect and honesty, flexibility and mutual obligation.

This Plan can inform and guide the actions of natural resource managers in this catchment. A number of key issues are identified as requiring priority attention and the collaboration of all stakeholders is sought to achieve this end. Effective partnerships with Landcare and conservation groups, local government, industry and urban groups, state agencies and individual landholders will be paramount.

This Plan is a dynamic document. Very soon and with the support of this community, we shall refine our key performance indicators to include more precise targets to ensure continuous improvement in the state of this catchment's ecological, economic, social and cultural health.

I believe that this Plan will inspire and promote action on ground to achieve that goal and I thank all involved in its preparation and finalisation.



*Bobbie Brazil*  
*Chair - Condamine Catchment Management Association Inc.*  
*2001*

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## EXECUTIVE SUMMARY

The Condamine Catchment Strategic Plan was endorsed by the Queensland Landcare and Catchment Management Council in 1996. The Catchment Strategy is a 'living' document and substantial time has been spent reviewing the strategies and actions, taking account of milestones achieved, progress made, outcomes delivered, new issues and emerging priorities.

The Condamine Catchment Management Association (CCMA) has prepared this draft document in conjunction with the catchment community, to reflect the views of the people living within the Condamine catchment. This plan outlines broad strategies to appropriately manage our natural resource issues, which have been identified by the catchment community as priorities.

### Our Catchment Vision

'Our Catchment, Our Community, In Harmony'

### Our Catchment Goals

- The Condamine catchment community managing the natural resources of the catchment in an economically, socially and environmentally sustainable manner in the long term.
- Coordinated and cooperative action by all involved in the management and use of our natural resources to address land, water and vegetation degradation and social and economic issues effectively.

### Our Catchment Mission

To have all levels of government working in partnership with the community and industry to develop and implement action plans for the balanced and ecologically sustainable use of the Catchment's natural resources.

### Identified key issues

The Condamine catchment community has identified thirteen key issues requiring priority attention in relation to natural resource management (NRM). Managing these issues in a way that the community finds acceptable will have the greatest impact and benefit for the long-term sustainable future of the catchment. These issues are (listed alphabetically):

- Communication, Education and Awareness
- Cultural Heritage
- Economic and Social Capacity
- Floodplain Management
- Land Use and Management
- Minerals and Energy
- Nature Conservation
- Pest Animals and Weeds
- Riverine Management
- Tourism and Recreation
- Waste Management
- Water Access, Use and Management
- Water Quality

## Strategic plan, draft format and structure

### *Catchment Strategic Overview*

This section outlines background information relating to: the development of the Condamine Catchment Strategic Plan; the CCMA; and a catchment overview.

### *Condamine Catchment Strategic Plan*

Each key issue is listed in alphabetical order. A brief outline of the issue is provided followed by the strategic direction and desired outcomes. Performance indicators have been highlighted to assist the CCMA to monitor the implementation of the catchment strategy.

### *Targets*

A snapshot of why and how targets can be identified for the Condamine catchment has been presented. More information will be added to this section as information becomes available.

### *Appendices*

This section encompasses a number of appendices that contribute to the overall document. Some additional background information has been listed as well as an easy reference to some of the current activities that are already underway in the Condamine Catchment. This reference material can be drawn upon to maximise use of available resources.

## CCMA Key Strategies 2001-2002

The focus of the CCMA during the next 12 months will be centred around the specific strategies detailed below (in alphabetical order).

### *Communication, Education and Awareness*

- Promote sub-catchment action planning to address core issues identified within the Condamine Catchment Strategic Plan.
- Actively promote the concept of NRM at a school and community level.

### *Economic and Social Capacity*

- Support the investigation and implementation of production systems and practices which are, or have the potential to be ecologically sustainable.

### *Floodplain Management*

- Develop and implement a community owned management plan for the whole of the Condamine Floodplain.
- Support processes for developing equitable sharing and integrated management of river floodplain and overland flows.

### *Land Use and Management*

- Encourage the adoption of conservation farming and best management practices.
- Gain detailed knowledge of salinity outbreaks in the catchment, promote sound catchment practices and monitor progress.
- Improve vegetation management practices to minimise land degradation issues and to improve biodiversity within the landscape.
- Encourage the coordination of regional planning recognising current and potential land degradation issues across the catchment.

### *Nature Conservation*

- Improve community awareness and understanding of the region's natural environment and assist people to develop a sound working knowledge of ecological concepts.

- Compile and distribute comprehensive baseline information about the region's natural environment, rare and endangered species, ecological processes and threats to biodiversity.

#### *Pest Animals and Weeds*

- Raise community awareness of the appropriate management and impacts of major pest plants (declared and environmental) and animals.

#### *Riverine Management*

- Support the development and implementation of riparian vegetation and wetland retention and rehabilitation plans at catchment and sub-catchment level.
- Identify and promote incentives for landholders to use recognised 'best practice' land use and management to minimise the impact of wastes /nutrients /sediment /weeds on riparian zones.

#### *Water Access, Use and Management*

- Determine flow sharing requirements for the Condamine Catchment.
- Implement appropriate plans and actions to achieve long-term sustainable groundwater use.

#### *Water Quality*

- Ensure water quality (surface and ground) is adequately considered and addressed in all planning and approval processes.
- Identify hot-spots and develop specific plans to implement best management practices for the protection of water quality.
- Support community participation in the development of Resource Operations Plans.

# 1 STRATEGIC OVERVIEW

## Introduction

### 1.1.1 The Integrated Catchment Management approach

Integrated Catchment Management (ICM) is a philosophy for achieving long-term sustainable use of our land, water and related biological resources. It aims to coordinate the activities of landholders, community groups, industry groups and all spheres of government within the river catchment.

The Condamine Catchment Strategic Plan recognises the principles outlined in the Queensland Government Integrated Catchment Management Strategy (1991):

- Land and water resources are basic and interactive components of natural ecosystems.
- Management of land and water resources should be based on river catchments as geographic units which account for the interactions between these resources.
- River catchments are continuously changing in response to natural processes.
- Management of land and water resources must be coordinated.
- Land and water resource management decisions must be based on the best available information.
- In a democratic society sound land and water management is best achieved through the informed action of the individual users and managers of these resources.
- A balance between economic development and conservation of land and water resources must be maintained.

Many environmental issues within the catchment will be difficult to solve. They must be managed in a way the catchment community finds acceptable. An integrated and cooperative approach is necessary, involving people in primary producers, land use planners, managers of the riverine environment and nature conservation areas, government regulators and policy makers.

### 1.1.2 Our Catchment Vision

Our Catchment, Our Community, In Harmony.

### 1.1.3 Our Catchment Goals

- The Condamine catchment community managing the natural resources of the catchment in an economically, socially and environmentally sustainable manner in the long term.
- Coordinated and cooperative action by all involved in the management and use of our natural resources to address land, water and vegetation degradation and social and economic issues effectively.

### 1.1.4 Our Catchment Mission

To have all levels of government working in partnership with the community and industry to develop and implement action plans for the balanced and ecologically sustainable use of the Catchment's natural resources.

### 1.1.5 CCMA Roles and Responsibilities

- To collect and distribute NRM information relevant to the Condamine catchment.
- To be a representative body dealing with NRM issues.
- To provide comment representing the catchment community on NRM issues and decision-making processes.
- To act as a catalyst for community/government/industry interaction and cooperation on issues.
- To prioritise issues and set the strategic direction for NRM in the Condamine catchment.
- To monitor, evaluate and comment on NRM activities of groups and government agencies in the Condamine catchment.

### 1.1.6 Our Catchment Values

The CCMA supports the following values that were derived from the 'Integrated Catchment Management in the Murray-Darling Basin 2001-2010 policy developed by the Murray-Darling Basin Ministerial Council, 2000.

#### *Courage*

- Take a visionary approach, provide leadership and be prepared to make difficult decisions.

#### *Inclusiveness*

- Build relationships based on trust and sharing, considering the needs of future generations, and working together in a true partnership.
- Engage all partners, including Indigenous communities, and ensure that partners have the capacity to be fully engaged.

#### *Commitment*

- Act with passion and decisiveness, taking the long-term view and aiming for stability in decision-making.
- Take a Basin perspective and a non-partisan approach to Basin management.

#### *Respect and honesty*

- Tolerate different views, respect each other and acknowledge the reality of each other's situation.
- Act with integrity, openness and honesty, be fair and credible, and share knowledge and information.
- Use resources equitably and respect the environment.

#### *Flexibility*

- Accept reform where it is needed, be willing to change and continuously improve our actions.

### 1.1.7 CCMA Achievements

#### *Recent achievements*

- Fostering cooperation and coordination between community and government through diverse membership and open community forums.
  - CCMA hosted a very successful water forum to discuss the Condamine-Balonne WAMP.
- Dissemination of information on natural resource issues throughout the Condamine catchment.
- Coordination of the "Condamine Catchment Strategic Plan" to provide strategic direction for the long-term sustainability of catchment resources.
- Involvement in the Natural Heritage Trust (NHT) process to target investment to address priority NRM issues within the catchment.
- Submit comment on numerous issues and development matters impacting on NRM in the catchment.
- Production of publications: Riparian Zone Manual and 'An Assessment of the Natural Resources of the Condamine Catchment' book.

#### *Looking forward*

The CCMA will:

- seek a lead role in delivering the National Action Plan for Salinity and Water Quality.
- encourage strategic on-ground works to deliver key actions identified in the CCSP.
- lobby for the formal recognition of catchment strategies in legislation.
- take the role of 'key environmental broker' in NRM consultation processes eg WAMP.
- highlight identified catchment issues for consideration by local government during their planning scheme review process
- promote complimentary planning at a local/catchment/regional level.
- facilitate the sharing of information and the formation of partnerships throughout the catchment.
- actively communicate the activities of the CCMA.

### 1.1.8 CCMA Membership

The CCMA currently consists of 15 members. Details are located in Appendix A.

- 10 Community members
- 1 Department of Natural Resources and Mines (DNRM)
- 1 Department of Primary Industries (DPI)
- 1 Environmental Protection Agency (EPA)
- 1 Darling Downs Local Government Association (DDLGA)
- 1 Eastern Downs Regional Organisation of Councils (EDROC)

Community representatives are selected for a 3-year term following a merit process conducted by an independent panel. A key mechanism in the selection process is the criteria by which potential applicants must clearly identify their interests with community based organisations such as landcare, industry, conservation etc. This process ensures that a diversity of community views are represented. Wherever possible the Committee seeks to ensure that all geographical areas within the catchment are represented.

In addition to direct linkages with local and state government, the CCMA provides a representative to the Community Advisory Committee (CAC) to the Murray-Darling Basin Ministerial Council. This representation ensures the views and ideas discussed by the CCMA are incorporated into discussions at a national level.

## Condamine Catchment Strategic Plan

The Condamine Catchment Strategic Plan (CCSP) was endorsed by the Queensland Landcare and Catchment Management Council in 1996.

As the CCSP is a 'living' document, the CCMA recognised the need to review the strategies and actions, taking account of milestones achieved, progress made, outcomes delivered, new issues and emerging priorities. An assessment was made to indicate progress since 1996 and details are located in Appendix B.

A strategic plan provides an objective way of prioritising issues and activities for the Catchment. This strategic plan may also assist organisations in the pursuit of funding to undertake the associated activities.

The various issues outlined in this strategic plan are all inter-related in some fashion. While they are treated as separate issues, action in one area will often contribute to achieving results in others. For example retention of native vegetation may enhance habitat (nature conservation), reduce salinity (land use and management) and improve water quality (water quality).

This strategic plan will continue to change and develop in response to new knowledge and understanding of the catchment.

### 1.1.9 Identified key issues

The Condamine catchment community has identified thirteen key issues requiring priority attention in relation to NRM. Managing these issues in a way that the community finds acceptable will have the greatest impact and benefit for the long-term sustainable future of the Catchment. These issues are (listed alphabetically):

- Communication, education and awareness
- Cultural heritage
- Economic and social capacity
- Floodplain management
- Land use and management
- Minerals and energy
- Nature conservation
- Pest animals and weeds
- Riparian zone management
- Tourism and recreation
- Waste management
- Water access, use and management
- Water quality

Details of the consultation process undertaken are found in Appendix C.

### 1.1.10 Strategy implementation - catchment level

The primary method of implementation will be via an action planning process. Already, the CCMA has established sub-groups, aligned with the key priority issues at the catchment level. These sub-groups are currently made up of CCMA members, state government representatives and other members of the community with a keen interest in addressing a particular issue. Sub-groups have the responsibility to identify and negotiate the implementation of particular actions required to actually address the identified strategy. An example of an action plan at a catchment level is found in Appendix D. The CCMA is keen for all interested stakeholder groups to actively participate on these sub-groups to address the issues in their area of interest.

CCMA sub-committees also provide advice on their particular issue to a number of audiences for a number of purposes. This includes preparing recommendations to community organisations and government agencies about the implementation of major

projects, organisational changes, investment strategies, research directions and project activity required to implement strategies that are a priority in the CCSP.

Implementation of on-ground works activity will largely occur via integrated projects that involve a wide range of stakeholders.

A focus of the CCMA is the development and implementation of action plans at the catchment and local level, while cooperating with other organisations to maximise the regional effectiveness of action planning and to ensure consistency of outcomes across the region. Action planning is rapidly becoming a standard procedure for community/agency based NRM planning in rural communities throughout the Queensland Murray-Darling region.

The process of action planning is recognised for delivering substantial economic, social and environmental benefits through cooperative action, increased and expanded sources of NRM investment and the synergy of an integrated planning approach. Through this process the CCMA has the capacity to change the direction and approach that state government agencies adopt to plan their work programs and ensure that sub-catchment action plans are being implemented.

In addition to action planning the CCMA will continue to:

- pursue Memoranda of Understanding with the lead State Government agencies, and Local Authorities. Each Memorandum of Understanding secures written agreement from key organisations to support the strategic direction suggested within this strategy document. An example can be viewed in Appendix E.
- support local strategic or action planning addressing issues outlined in this strategy.
- secure alternative funding opportunities that will aid strategy implementation.
- co-ordinate existing activities and plans.

### **1.1.11 Strategy implementation - sub-catchment level**

Many communities have already commenced the implementation of local action plans. Partnerships have been formed between landholders, local Shires, State agencies and research and development organisations to implement action. The sub-catchment action planning process in the Condamine catchment uses an integrated approach to manage water, vegetation, fauna and soil related issues. The sub-catchment groups give consideration to each of the issues identified in the Catchment Strategic Plan and describe the local impacts. The process focuses on identifying the local causes of these issues. Where required groups seek technical advice to ensure the validity of any on-ground works. This advice is generally sought from the State government agencies as well as local government officers. Actions, cost sharing arrangements, partnership agreements, monitoring and performance criteria are detailed in sub-catchment action plans.

These action-planning groups tend to spread their focus beyond NRM issues with many benefits derived from coming together as landholder-based groups. Groups have formed cooperative marketing arrangements, made bulk purchases and attracted research work to their areas.

The formation of landholder-based groups is often the catalyst for increased demand for Property Management Planning at the individual property level. The sub-catchment action planning process and the Property Management Planning process are complimentary with groups often completing one level of planning and then moving onto the other.

### 1.1.12 The action planning framework

Features of a well developed sub-catchment action plan in this catchment include:

- a process of agreement of who should be involved and how the plan should be developed and implemented
- evaluation of a range of possible actions to address the issue, how these will be integrated and the likely outcomes of those actions
- recommended priority locations and preferred priority actions for each issue in the sub-catchment
- identified stakeholders' roles and responsibilities in terms of research, extension, on-ground activities and monitoring and reporting requirements
- negotiated agreements for the implementation of the plan
- identification of resources required for the implementation of the action plan and recommend methods to obtain these
- a time frame for the action plan to be implemented
- monitoring and evaluation criteria to be established through setting benchmarks.

An example of how an action-planning process may be conducted is found in Appendix F. Details of the current sub-catchment action plans being implemented in the Condamine catchment are located in Appendix G.

It is imperative that all actions under consideration identify the potential impacts downstream. This approach provides strategic implementation of on-ground works and all stakeholders have the opportunity to contribute to determining how it will best be addressed. The action-planning approach ensures that all contributions towards on-ground works are coordinated in the most efficient manner regardless of whether they are actual dollars or in-kind contributions.

### 1.1.13 Additional mechanisms for implementation

There have been a number of recent changes to state government legislation that will assist in achieving some of the identified strategies within the CCSP. The following items are further expanded in Appendix H.

- Environment Protection and Biodiversity Conservation Act, 1999
- National Strategy for Ecologically Sustainable Development
- National Strategy for Conservation of Australia's Biological Diversity
- Water Act, 2000
- Environmental Protection (Waste Management) Policy 2000
- Environmental Protection (Waste management) Regulation 2000
- Vegetation Management Act, 1999
- Environmental Protection (Water) Policy 1997
- Integrated Planning Act, 1997
- Environmental Protection Act 1994

# Catchment overview

The Condamine catchment is located at the headwaters of the Murray-Darling Basin in Southern Queensland. The Condamine River is a tributary of the longest continuous river in Australia, the Darling River. The Condamine River itself is approximately 500 kilometres long.

The Great Dividing Range forms the eastern and northern boundaries rising to 1,400 metres in places. The southern boundary is formed by the Herries Range, with a much lower elevation (to 800 metres in places) and the western boundary contains the Dogwood Creek sub-catchment which is where the Condamine River becomes the Balonne River. The following map illustrates the boundaries of the Condamine catchment.



Figure 1: Condamine Catchment

### 1.1.14 Land resource areas

The Condamine Catchment contains some of the most fertile soils in the world and is one of the most productive agricultural areas in Australia.

A Land Resource Area is an area of land with a particular combination of soils, geological material, topography and vegetation. There are 12 major Land Resource Areas in the Catchment:

1. Recent Alluvial Plains - mainly between Leyburn and Warra, suitable for dryland and some irrigated cropping.
2. Poplar Box Solodic Plains - originating near Millmerran and along major creeks, suitable for pastures and grazing.
3. Cypress Pine Sand Plains - flat to gently undulating sand plains, suitable for grazing and some dryland cropping
4. Brigalow Plains - occurring in large sheets between Dalby, Chinchilla and Glenmorgan, suitable for grazing and moderate dryland cropping.
5. Brigalow Rises - suitable for dryland cropping and grazing.
6. Rolling Downs/Walloons - undulating plains and rises west of Chinchilla, suitable for dryland cropping and grazing.
7. Ironbark Solodics - occurring throughout the Catchment, west of Dalby, in the north west of the Catchment and to the south west of Millmerran, suitable for grazing
8. Poplar Box Solodics - found along the edges of Brigalow Plains, suitable for grazing
9. Marburg Sandstone Hills - occurring in the uplands of the Catchment, on crests, plateaux and rock outcrops, suitable for limited grazing
10. Basaltic Uplands - found in the east of the Catchment, suitable for cropping, horticulture and grazing
11. Granite Hills - extensive area of rocky ridges and outcrops occurring in the headwaters of the Catchment, suitable for grazing
12. Traprock Hills - areas of rocky ridges occurring in the headwaters of the Catchment, suitable for grazing

*Source: An Assessment of the Natural Resources of the Condamine Catchment, 1995*

### 1.1.15 Water resources

The hydrology of the Catchment is also highly variable. The Catchment's average rainfall is 726 mm per year. Seventy percent of rain falls in the summer months from October to March. Rainfall is highly variable in timing and amount in any one year. Few streams have permanent flow.

There are 2,787 licensed production bores and 12,000 stock and domestic bores in the catchment. In addition there are around 235 authorised water-harvesting diversions upstream of Chinchilla, with diversion rates generally between 43.2 and 86.4 megalitres (ML) per day. The maximum diversion allowable is 86.4 ML/day for most properties. Irrigation represents, by far, the major category of use, estimated to consume 80 - 90% of all supplies taken. Many groundwater developments throughout the Catchment have annual allocations in excess of sustainable annual supplies.

The Condamine River at Chinchilla Weir has a mean natural flow of 550,000 ML/year. The mean annual diversion above Chinchilla is around 185,000ML/year. This is made up of a mean annual water-harvesting diversion of around 67,000 ML; a mean annual diversion from area "hectare" licences, of around 31,200 ML; regulated supplies in the Upper Condamine Irrigation Project and the Chinchilla Weir irrigation Project are on average around 33,500ML, and other demands such as industrial, stock and domestic and overland flow make up the remainder. This diversion represents around 30-35% of the mean natural flow.

Overland flows are a significant component of the water resource within the basin. Overland flow development has increased considerably in recent times. Competing interests and concerns about impacts to river flows has brought about new legislation to introduce Government regulation of water in the floodplain areas. The Condamine-Balonne Water Resource Plans will introduce regulation in the Condamine-Balonne basin.

The assessment made for environmental flows for the Condamine system as undertaken by the WAMP Technical Advisory Panel has indicated the Upper Condamine is in fair to good condition but with an increase in occasions when there are no flows.

The environment flow objectives are aimed to provide an improvement in flow regimes at various flows eg no flows, low flows, etc. A broad indicator that is commonly discussed is the change from natural median flows. The science has suggested that around 62% median annual flow remaining in the system is the limit. However it is important that maintenance or improvement to all the stages of river flow is achieved to limit ecological degradation.

*Source: Condamine-Balonne WAMP Current Condition and Trend Report, 2000*

### **1.1.16 Flora and fauna**

The Condamine catchment lies within the southern part of the Brigalow Belt bioregion and the majority of the catchment falls within the Eastern Darling Downs sub-region. Sattler and Williams (1999) provide a detailed description of the landscapes and regional ecosystems associated with these areas and lists of regional ecosystems are maintained on the EPA's website. Broadly, the Condamine catchment is in an intermediate climatic zone between the moister coastal climate and the drier inland factors, combined with a diversity of landforms and soils, provide habitat for a wide range of native vegetation and fauna.

Major vegetation communities in the Condamine catchment include:

- Grasslands and grassy eucalypt woodlands on the alluvial plains and surrounding undulating hills of the Condamine River
- Brigalow/belah open forest on extensive clay plains of the mid to western sections of the catchment
- Eucalypt open forests and woodlands on undulating and plain areas particularly in the western sections of the catchment
- Eucalypt woodlands on sandstone hills and residuals
- Eucalypt woodlands on granite and traprock hills in the south of the catchment.

Approximately 10% of the catchment is covered with mid-dense to dense eucalypt forest and scattered to open eucalypt woodland covers approximately 20% of the catchment. Many of the floodplains were treeless with grass the dominant vegetation. More structured vegetation dominated by trees occurs naturally in the riparian zone.

The historical and ongoing settlement of the Darling Downs, in particular, has led to continued degradation of much of the conservation values of flora and fauna in the Condamine catchment. The floodplain and lowland areas of some shires in the catchment have mostly been cleared of native vegetation (including grasslands and riparian and floodplain woodlands). Within the Condamine catchment, the proportion of remnant vegetation remaining in the shires ranges from about 7 to 30 percent in the east, and 25 to 50 percent in the west. Of this remnant vegetation, up to 70 percent is classified as "endangered" or "of concern" in some parts of the catchment (e.g., Clifton and Cambooya Shires, and Toowoomba City).

There has been no detailed and systematic survey of fauna or flora within the catchment. Specific study areas however show a diverse range of birds, frogs, reptiles and mammals. There are six birds (e.g. Powerful kite), seven reptiles (e.g. Yakka skink), and one frog species (Red and yellow mountain frog) that are classified as rare in the Catchment. The Condamine catchment also contains populations of the endangered bullock jewel butterfly and the vulnerable imperial blue butterfly. There are four mammals (e.g. Darling Downs hopping

mouse) and one bird species (Paradise parrot) that have been declared extinct in the catchment.

There are several rare and threatened plant species recorded for the catchment (appendix I). Notable examples that occur in remnant native grasslands and eucalypt woodlands include: *Digitaria porrecta*, *Picris evae*, *Stemmacantha australis*, *Thesium australe*, and *Solanum papaverifolium*.

### 1.1.17 Economic development

#### *Agriculture*

The following table was derived from the latest Ag-stats data\* (1996-97) highlighting some of the major agricultural industries located within the Condamine catchment. Figures are presented on a per shire basis. The percentage of each shire located within the catchment is indicated in brackets next to the local authority listed.

Local Authority (% in catchment)	Cereals for grain (\$'000)	Total crops (\$'000)	Total livestock products (\$'000)	Cotton (\$'000)	Total value of agriculture (\$'000)	Market share of Qld (%)
Cambooya (82.5) ^	5297	15294	5670	128	23519	0.41
Chinchilla (55.3)	21105	37878	2517	5822	73066	1.29
Clifton (100) ^	11774	19610	4703	824	35858	0.63
Crows Nest (15.5) ^	618	14484	12107	0	37463	0.66
Dalby (100)	305	980	3	566	1146	0.02
Jondaryan (100) ^	36772	74897	9926	30463	111380	1.96
Millmerran (41.3) ^	38864	85061	6848	40336	112708	1.99
Murilla (10)	33864	39526	703	4790	64785	1.14
Pittsworth (100) ^	21768	61118	10726	34237	77383	1.36
Rosalie (69.3) ^	13303	17136	22405	1325	56549	1.00
Tara (39.8)	58753	63918	6130	2926	88354	1.56
Toowoomba (100) ^	365	1452	320	0	1819	0.03
Wambo (100)	74353	138622	6388	55611	191948	3.38
Warwick (100) ^	11888	27966	19685	55	76229	1.34

\*ag-stats data derived from DPI and ABS Sources

^ identifies local authorities that are part of the Eastern Downs Regional Organisation of Councils (EDROC). EDROC also includes Gatton Shire.

#### *Tourism*

Domestic visitors to the Darling Downs region has not changed significantly over the six years from 1998/99 to 1993/94. It has remained around 1 million visitors per annum. Over the same period, domestic visitor nights have remained fairly static recording just over 3 million domestic visitor nights spent per year in the Darling Downs region. Internationally, approximately 20,000 international visitors per year travel the Darling Downs providing close to 300,000 visitor nights to the region. The average daily expenditure per visitor per night during 1994/95 was just over \$100.00. Two of the most highly visited facilities in the region are the Jondaryan Woolshed and the Cobb & Co Museum.

Source: Toowoomba and the Golden West and Southern Downs Regional Tourism Strategy, 1996

#### *Gross Regional Product*

The measure of gross regional product (GRP) provides a measure of the value added in the process of production and is essentially equal to the value of sales less the value of intermediate goods and services used in the process of production. Changes in GRP are an important indicator of regional productivity for a region. GRP growth was positive in the 1991-96 period for most shires. However, the GRP fell markedly over the period 1996-98 for most shires. The growth experience varies widely among the shires. The ranges and swings in economic performance reflect general changes in industry conditions, changes in climatic



*Figure 2: Local Government Areas within the Condamine Catchment*

## 2 PRIORITY ISSUES AND STRATEGIES

### Communication, Education and Awareness

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#### *Overview*

Communication, education and awareness over-arches and is an essential process in all natural resource issues detailed in the Condamine Catchment Strategic Plan. The gathering and sharing of information on the natural resources of the Condamine catchment is central to developing an effective catchment strategy. In this sense, communication is also about information and research. Elements of '*Communication, Education and Awareness*' are evident in each strategy section.

Communication is a two way process. Information needs to flow between those developing action plans and strategies, and those implementing their plans. There is increasing opportunity for landholders to both receive and provide useful information to and from technical officers/experts, to assist in filling information gaps, and monitoring changing environmental conditions.

#### *Current Condition*

- Community consultation in the Condamine catchment often occurs on an ad hoc basis.
- Some members of the community believe they are being "over-consulted," while others feel that community knowledge and experience is not recognised or appropriately valued.
- Information is not always provided to the community in a manner that is easily accessed and understood.
- A number of community consultation processes rely on ongoing participation by landholders with no immediate outputs being delivered. This method of information provision is incompatible with current demands placed on landholders to derive their income.
- Local councils and State government departments have a vast amount of information on all the issues included in this Strategic Plan, which needs to be coordinated and delivered to land managers in a useful form.

#### *Future Trend*

- Community groups are increasingly being requested to have greater input in addressing NRM issues.
- The community is increasingly wishing to access NRM information from a variety of sources including the internet.

#### *Existing Priority Areas*

Across the entire catchment.

#### *Performance Indicators*

- Number of people within the catchment aware of NRM issues and involved in restoration, appropriate management and monitoring activities.
- Extent of reporting by print and electronic media on NRM activities and programs.
- Level of participation in leadership and other skills training programs.

## Communication, Education and Awareness (CEA) Priority Catchment Strategies

**Objective 1:** An informed and active community who understand natural resource issues and ecological processes, and who promote sustainable NRM practices.

Strategy	Priority	Desired Outcomes
a) Identify and utilise the most effective method to inform and educate target groups within the community.	High	<ul style="list-style-type: none"> <li>▪ An informed community, aware of the impacts and extent of NRM opportunities available to address issues.</li> <li>▪ Information of interest that is easily accessible.</li> <li>▪ Information presented to the community in a manner that is easily understood by a variety of audiences.</li> <li>▪ A community informed of NRM issues, whilst not being inundated with information.</li> <li>▪ High ownership of Condamine 'catchment consciousness'.</li> </ul>
b) Actively promote the concept of NRM at a school and community level.	High	
c) Seek active stakeholder participation in project development and implementation within the local community.	Medium	
d) Involve banking/commercial sectors to ensure that Ecologically Sustainable Development activities are promoted in commercial considerations.	Low	

**Objective 2:** To raise awareness of the CCMA and its activities.

Strategy	Priority	Desired Outcomes
a) Actively communicate the activities of the CCMA	High	<ul style="list-style-type: none"> <li>▪ Increased community awareness of relevant NRM issues.</li> <li>▪ Effective two-way communication to enable CCMA and the community reflect each others priorities.</li> <li>▪ Establishment of effective links between CCMA and community groups to empower the community to deal with NRM issues.</li> </ul>
b) Ensure the CCMA represents the wider catchment community including mechanisms for input.	Medium	
c) Ensure the CCMA provides regular opportunities to address issues presented by members of the catchment community	Medium	
d) Promote the philosophy of ICM and build Condamine 'catchment consciousness'.	Medium	
e) Provide mechanisms for feedback and accountability from CCMA to the community.	High	

**Objective 3:** Provision of opportunities to obtain locally relevant information, discuss NRM issues and implement plans of action so issues are addressed.

Strategy	Priority	Desired Outcomes
a) Actively publicise NRM projects and activities occurring in the catchment.	High	<ul style="list-style-type: none"> <li>▪ An informed community, aware of the impacts and extent of NRM and opportunities available to address issues.</li> <li>▪ A range of opportunities provided for community discussion and debate on NRM issues.</li> <li>▪ A variety of avenues presented for community consultation.</li> <li>▪ Community groups aware of what is available to them and taking up opportunities to implement their plans and strategies.</li> <li>▪ Processes in place to facilitate input from people of diverse cultural and social origins into natural resources management planning.</li> <li>▪ Information gathered via a coordinated cross-catchment mechanism will enhance the accuracy and integrity of decision-making processes of the coordinating body.</li> </ul>
b) Promote sub-catchment action planning to address core issues identified within the Condamine Catchment Strategic Plan.	High	
c) Identify linkages between the Condamine Catchment Strategic Plan and regional/ local planning processes and promote complimentary planning.	High	
d) Foster and encourage communication processes which enhance integrated planning and information transfer and promote opportunities for networking within and between groups working towards sustainable resource management.	Medium	
e) Implement a process to extensively use local media mechanisms to reach the broader community.	Low	
f) Actively promote associated issues relating to government initiatives that affect NRM.	Low	
g) Promote culturally appropriate and relevant consultation, negotiation and conflict resolution processes for involving relevant organisations and the general community in natural resources planning and decision-making.	Low	
h) Improve community consultation processes to support various methods of input and access to feedback.	Low	

# Cultural Heritage

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## *Overview*

This issue recognises the links that people, indigenous and non-indigenous, have with the places they live and work in. It acknowledges the importance of the history of natural resources and of the residents of the region and how these can contribute to the development of better informed action.

## *Current Condition*

- There are places worth keeping because they enrich our lives by helping us understand the past, by contributing to the richness of the present environment, and because we expect them to be of value to future generations.
- The cultural significance of a place is embodied in its physical material (fabric), its setting and its contents; in its use; in any associated documents about the place; and in its meaning to people through their use of and association with the place.

## *Future Trend*

- People have the right to be involved in decisions affecting their cultural heritage and in the ongoing management of their cultural heritage.
- Aboriginal people who have rights to speak for the place and/or have interests in the place should be identified and involved in decisions affecting that place.

## *Existing Priority Areas*

- Cultural heritage is an integral part of any planning process.
- The cultural-heritage significance of a place, and other issues affecting its future are best understood by following a methodical process of collecting and analyzing information before making decisions.

## *Performance Indicators*

- Number of management plans developed for sites of significance.
- Number of sites of significance protected.
- Representation of people with different cultural backgrounds in natural resources planning and management.

## *Cultural Heritage (CH) Priority Catchment Strategies*

**Objective 1:** Indigenous and non-indigenous cultures recognised and respected, and heritage values conserved throughout the catchment.

<b>Strategies</b>	<b>Priority</b>	<b>Desired Outcomes</b>
a) Encourage indigenous communities to be actively involved in addressing catchment issues.	High	<ul style="list-style-type: none"> <li>▪ A diverse and representative range of cultural heritage resources identified, protected and appropriately managed.</li> <li>▪ Cultural considerations incorporated into natural resource planning and management.</li> <li>▪ The effect of indigenous management practices on natural resources understood, appreciated and considered in natural resources management.</li> <li>▪ Culturally appropriate consultation and participation processes adopted.</li> </ul>
b) Support cultural heritage studies which improve knowledge and understanding of cultural heritage, its linkages with the natural environment and its interaction with and impact on NRM.	Medium	
c) Encourage the maintenance of appropriate traditional practices and their incorporation into broadscale resources management programs where these practices are consistent with the principles of ecologically sustainable management.	Medium	
d) Support a systematic program of data collection, analysis and communication of the cultural heritage and social values of the Condamine Catchment.	Low	
e) Assist indigenous communities to create awareness of local tribal boundaries and identify current contacts for these tribal groups	Low	

## Economic and Social Capacity

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### *Overview*

There is often a lack of agreement within the community on fundamental issues such as the existence or severity of problems, let alone on questions of how to resolve them and who should be responsible. Such disagreement is inevitable due to difficulties associated with accessing meaningful scientific information and the differences in values within the community. For real change, people must create opportunities to discuss issues and agree on future actions.

The human dimension is integral to the success of natural resource planning and management. The small population of the catchment results in many challenges for activities such as communication, service delivery and community networks trying to support local action. The increasing number and impact of NRM issues within the catchment is demanding greater community input into how it should be managed. There is a strong need to better resource and organise consultation programs to maximise the efficiency of such processes.

The economic climate has important implications for local efforts to address NRM. There will always be aspects of the economy (eg commodity prices, interest rates) that are outside the control of individuals or the community. This is particularly important in the Condamine catchment where a large proportion of the economic base is linked to primary production.

Such social and economic pressures on the community need to be recognised when planning for NRM. The ability for individuals to upgrade or reinvest in sustainable production systems is in many instances reduced given a lack of incentive and the net economic position of many land managers. These key elements often contribute to a reduced community capacity to respond to NRM issues.

### *Current Condition*

- Information is increasingly being sought on opportunities for diversification or to locally value-add to rural produce.
- Increasing involvement by primary producers to become involved in on-farm research and development trials.
- Increasing incidence of 'next generation' landholders choosing to leave the family farm in search of non-rural careers.
- Changes to the human resourcing of NRM by state government departments, symptoms of which include increased role diversity and geographical coverage for technical officers, and rationalisation of staff numbers in regional offices throughout the catchment.

### *Future Trend*

- Economic development should not degrade the resource base.
- The skills of people determine the effectiveness of NRM.
- Solid leadership, clarity of purpose and group cohesiveness is required for effective group action.
- Initiative, interest in being innovative and creativity are held in direct proportion to the levels of skill and enthusiasm required.
- Increasing incidence of the consolidation of farming land and property management in the western reaches of the catchment. The opposite trend is occurring in the east.

### *Existing Priority Areas*

- Development proposals should consider social, environmental and economic benefits and costs; appropriate timeframes and the availability of viable markets.
- Need to create regular opportunities for greater cooperation between farmers to enhance economic viability in the rural community.

- Improved planning and development skills within the rural community.
- Promotion of education/awareness programs regarding multi-generational farming, succession planning and rural/regional career choices.

### *Performance Indicators*

- Level of participation in leadership and other skills training programs.
- Increased diversity of primary production opportunities providing economic benefit.
- Trend in numbers of 'next generation' landholders choosing to succeed their forebears on family holdings.
- Trend in number of 'under 30's' landholders actively involved in community environment/landcare groups.

### *Economic Sustainability (ES) Priority Catchment Strategies*

**Objective 1:** Economically, socially and environmentally sustainable industries and development which contribute to community well-being and maintain the natural resource base.

<b>Strategies</b>	<b>Priority</b>	<b>Desired Outcomes</b>
a) Support the investigation and implementation of production systems and practices which are, or have the potential to be ecologically sustainable.	High	<ul style="list-style-type: none"> <li>▪ An increase in the diversity and viability of the regional economic base.</li> <li>▪ Improved ability of resource-based industries to withstand climate and market fluctuations.</li> <li>▪ Increased ability of communities in the region to provide and support the range of services necessary for social well-being.</li> <li>▪ Increasing numbers of self-reliant land managers running economically viable properties and industries.</li> <li>▪ Fewer instances of resource degradation as a result of economic difficulties.</li> <li>▪ Skilled and self-reliant community groups working together with the necessary resources to achieve their goals, adjust to change and enhance their well-being.</li> <li>▪ Established processes that empower community partnerships with other stakeholders to share the responsibility of managing natural resources.</li> <li>▪ Programs of economic development should increase community self-reliance, be built upon community knowledge and expertise and reflect appropriate planning objectives.</li> <li>▪ Incorporation of succession planning in personal development programs.</li> </ul>
b) Support benchmarking and the establishment of best practice and codes of practice for industries dependent on the use of natural resources.	Medium	
c) Identify and promote structural adjustment and change mechanisms that facilitate the transition to more sustainable production systems and enterprises.	Medium	
d) Evaluate the resource and economic sustainability of alternative farming systems and management practices, including those using pest animals and forest products.	Low	
e) Investigate and implement/access training programs which address planning skills, leadership, group development processes, negotiation, conflict resolution and change management.	Low	
f) Support the development of models which indicate when structural adjustment or change is necessary in an industry or location. This includes identifying environmental stress indicators which precede property degradation and industry collapse.	Low	
g) CCMA to continue to progress economic sustainability issues within the Condamine Catchment with all levels of government.	High	

h) Support succession planning through promotion, education and awareness programs.	Medium	
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# Floodplain Management

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## *Overview*

Floodplain management is one of the most challenging natural resource issues. This is due to their ecological sensitivity, flow variability, limited knowledge of physical, hydrological and biological process, and competing demands on the use of the resource.

The health of the floodplain is inextricably tied to upland management and together with floodplain management, impacts on the riparian zone. Development including irrigation, urban growth, land management and infrastructure continues to change the volume, extent and pattern of drainage of floodwater flows across the Condamine floodplains. Such development has degraded the environmental value of the natural function of the floodplains and has resulted in compounding problems associated with overland flows, flow sharing, flow patterns, water retention, stream hydrology characteristics, stream stability, riparian zone value and function, values of swamps and wetlands and groundwater recharge. Overland flows maintain wetland and floodplain ecosystems, providing beneficial inundation for dry land crops and pastures, stock and domestic water supplies, and irrigation water supply.

Community concern over the degradation of the floodplain led to the establishment of the Brigalow and Jimbour Floodplains projects collectively covering approximately 300,000 hectares and the Upper Condamine Floodplain Project which considers some 515,736 hectares of land with a slope of less than 1%. These projects have developed over time and represent a partnership between landholders, state government and local shires.

## *Current Condition*

- Uncontrolled and uncoordinated runoff along with inappropriately sited infrastructure has lead to unnatural flow concentrations, and extensive land degradation. It is imperative that there is a coordinated approach to management of the floodplain, including farming practices/systems.
- Uncontrolled extraction of overland flows from the floodplain and excessive groundwater use impacts on ecosystem health and resource reliability.
- Current legislation has introduced a moratorium on water extraction on the floodplain. There is currently no legislation/management regime regulating the extraction of groundwater.
- Floodplain management issues cannot be considered in isolation from the adjacent area, particularly the uplands and the riparian zone, as each has an impact on the other.

## *Future Trend*

- Cooperative and coordinated action is required by all involved in the management and use of the floodplain, to effectively address land and water degradation and economic issues associated with NRM.
- Integrated planning and coordinated management is essential to ensure healthy and productive floodplains.
- Forming partnerships of local knowledge and experience with technical expertise and state of the art technology between landholders, local authorities and state government.
- Increasing awareness of the environmental and economic costs of inefficient water use.
- Increased awareness of the environmental and economic benefits of well managed vegetation.

## *Existing Priority Areas*

Condamine floodplain, Brigalow Jimbour Floodplain and upland areas.

### *Performance Indicators*

- Degree to which on-ground change has occurred as a result of catchment management planning.
- Number and geographical coverage of management plans for floodplains being implemented.
- Health of floodplain environments measured according to agreed indices.
- Extent of research to provide baseline information.
- Extent to which research findings are communicated to landholders and their uptake through timely and relevant extension activity.

### *Floodplain Management (FM) Priority Catchment Strategies*

**Objective 1:** Integrated and coordinated planning and management between the local community, state government agencies and local government.

Strategies	Priority	Desired Outcomes
a) Develop and implement a community owned management plan for the whole of the Condamine Floodplain.	High	<ul style="list-style-type: none"> <li>▪ A coordinated and cooperative catchment approach to river and floodplain conservation and management involving all stakeholders.</li> <li>▪ River and floodplain functions and values are conserved within the context of integrated NRM.</li> </ul>
b) Promote stakeholder coordination of activities influencing floodplain management.	High	
c) Ensure development on the floodplain is located to minimise overland flow concentration, diversion, land degradation and flood damage and to maintain the integrity of micro catchments.	High	
d) Promote the development of strategic land management planning in the uplands to compliment floodplain planning.	Medium	
e) Support processes for developing equitable sharing and integrated management of river floodplain and overland flows.	Medium	
f) Develop local laws and strategies appropriate for use in planning schemes across the region.	Low	

**Objective 2:** A comprehensive inventory of ecological, physical and cultural characteristics of floodplain areas.

Strategies	Priority	Desired Outcomes
a) Conduct hydrologic and hydraulic studies to identify the dynamics of overland flows and the influences of management practices on the floodplain.	Medium	<ul style="list-style-type: none"> <li>▪ The ecological, cultural, economic and social value of the river and floodplain are identified, quantified and the impact of human activity on these values determined as far as practicable.</li> <li>▪ Ongoing research into riverine and floodplain processes and management, and the dissemination of this knowledge to the community.</li> <li>▪ River and floodplain functions and values are conserved within the context of integrated NRM.</li> </ul>
b) Establish and implement the framework and protocols to monitor and report floodplain condition and trend against regionally defined benchmark and national guidelines.	Medium	
c) Undertake a detailed resource inventory of the Condamine Floodplain to be used for benchmarking situation analysis and informed resource management decisions.	Low	
d) Review existing and natural flow paths and identify areas appropriate for development and use.	Medium	
e) Support the development and implementation of coordinated ecological and cultural assessment, monitoring and reporting programs for riverine habitats and floodplains.	Low	
f) Secure the commitment of required resources by state government departments.	High	

**Objective 3:** Adoption of better management practice to reduce adverse impacts on the floodplain and in stream biota.

Strategies	Priority	Desired Outcomes
a) Promote mechanisms to rehabilitate degraded rivers and floodplains.	High	<ul style="list-style-type: none"> <li>▪ A coordinated and cooperative catchment approach to river and floodplain conservation and management involving all stakeholders.</li> <li>▪ The ecological, cultural, economic and social value of the river and floodplain are identified, quantified and the impact of human activity on these values determined as far as practicable.</li> <li>▪ Ongoing research into riverine and floodplain processes and management, and the dissemination of this knowledge to the community.</li> <li>▪ River and floodplain functions and values are conserved within the context of integrated NRM.</li> <li>▪ Improved management of landscapes and land uses which contribute excessive (volumes/amounts) to nutrient and sediment runoff into streams.</li> </ul>
b) Promote best practice land and water management for maximum benefit of overland flows.	Medium	
c) Foster investigation and development of effective techniques and 'best practice' guidelines for conservation, rehabilitation and management of the river and its floodplain.	Medium	
d) Provide technical assistance and incentives for on-ground works to improve the management of riparian and floodplain environments.	Medium	
e) Coordinate projects to develop and promote cost effective methods to minimise channel and stream bank erosion at critical locations.	Medium	
f) Support research to increase knowledge and understanding of ecological processes, hydrological cycles and aquatic biota, and improves practices for integrated management of river, floodplain and production systems.	Low	

## Land Use and Management

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### *Overview*

The Condamine Catchment has been profoundly altered since white settlement. It is one of the most productive agricultural areas in Australia and contains some of the most productive soils in the world.

Land degradation reduces the productive capacity and long-term ecological sustainability of agricultural lands. The costs of off-site effects of land degradation are considerable. Furthermore, landuse practices have considerable influence on the riverine environment potentially increasing turbidity, nutrient loads and the potential for algal blooms.

Possibly more so than with any other NRM issue, the condition of the land is subject to seasonal changes and economic conditions. A number of recent initiatives have acknowledged the need for more widespread change of NRM practices, including land use to mitigate the potential impacts of issues such as salinity and water quality.

### *Current Condition*

- Wind erosion is a factor in some areas.
- Pasture decline, nutrient decline, soil compaction and poor water infiltration are issues affecting many parts of the catchment.
- Gully erosion from flood waters running faster and higher, and cultivation occurring too close to water courses, are problems in the creek plains of much of the catchment area.
- Erosion prone land in the upper catchment is equal to that of the lower catchment.
- Erosion prone lands in the Chinchilla, Murilla and Tara Shires have a comparatively low proportion of treated land.
- The uplands area from Cooranga north to Bell suffer from erosion and moderate pasture decline.
- Nutrient decline is a problem in the brigalow soils in the western section.
- Saline outbreaks are beginning to emerge.
- Historical land use practices have, in some areas, contributed to a decline in water quality. Other considerations include the use of inefficient irrigation practices and uncoordinated weed management programs.
- Siltation of stream channels is significant in a number of areas is association with active erosion within catchments.
- Erosion of streambanks from entrant gullying is widespread (combination of waterways off contoured slopes and floodplain flow concentration).

### *Future Trend*

- Salinity is an emerging issue. Isolated "hot spots" occur where sandstone ridges meet basalt soils, a consequence of over clearing higher in the catchment. In addition, inappropriate landuse practices are resulting in increasing use of saline groundwater for irrigation.
- Economic pressures are a major constraint to the non-adoption of conservation farming machinery and practices.
- Increasing landholder recognition of the long-term benefits for adopting farming practices that are both cost-effective and environmentally sustainable.
- The incidence of farming land consolidation is increasing. This has consequential impacts upon landuse and management.
- The increasing focus of NRM policy on private benefit will place pressure on future landholders.
- Significant revegetation is well underway on the Brigalow and Jimbour floodplains and in strategic locations in the Jimbour uplands and Jinghi Uplands.

### *Existing Priority Areas*

Soil Conservation:	Ashall Creek, Lower Spring Creek, Aubigney Catchment, The Head, Kingsford Ridge/Hermitage, South Myall Creek, Wambo Uplands, Yamsion/Rangemore, Lagoon Creek, Licking Holes Catchment, Jimbour floodplain, River floodplain (BJFG area), Jimbour uplands, Jandowae Creek uplands, Cooranga/Downfall Creek Uplands, Jinghi uplands, Cattle Creek uplands, Mt Marshall, Freestone/Clintonvale, Swanfels and Steele Rudd catchments.
Salinity:	Lower Spring Creek, Elphinstone Creek, Ryeford Catchment, South Myall Creek, Lagoon Creek, Licking Holes Catchment, Jimbour uplands, Jandowae Creek uplands, Cooranga/Downfall Creek Uplands, Jinghi uplands, Cattle Creek uplands, Ashall Creek, Felton creek, Linthorpe creek, and Umbirm Creek catchments.
Best Practice:	Ashall Creek, Lower Spring Creek, Aubigney Catchment, Kogan Creek, Darr Creek, Red Hill, The Head, Kingsford Ridge/Hermitage, Ryeford Catchment, South Myall Creek, North Moonie, Gomaren/Doctors Creek, Lagoon Creek, Wambo Uplands, Licking Holes Catchment, Hopeland, Brigalow Floodplains, Jimbour Floodplains, River Floodplains, Jinghi Uplands.
Vegetation Issues:	Elphinstone Creek, The Head, Ryeford Catchment, South Myall Creek, Darr Creek, Burri Burri Creek, Wambo Uplands, Lagoon Creek, Yamsion/Rangemore, Licking Holes Catchment, all uplands east of the Dalby-Jandowae Road.

### *Performance Indicators*

- Number and extent of land and vegetation management plans implemented.
- Adoption rate of selected sustainable land management practices.
- Percentage of landholders adopting an integrated planning approach to the management of their land and vegetation resources.
- Extent to which implemented land/vegetation management plans are maintained over time.

## Land Use and Management (LUM) Priority Catchment Strategies

**Objective 1:** Establish a balance between economic viability and ecologically sustainable use of the land resources throughout the Catchment

Strategies	Priority	Desired Outcomes
a) Encourage the adoption of conservation farming and best management practices.	High	<ul style="list-style-type: none"> <li>▪ Provision of high quality land resource information at an appropriate scale to improve land managers' decision-making.</li> <li>▪ Sustainable management of catchment land resources.</li> <li>▪ Improved partnerships between landholders, researchers and extension personnel so research findings reach land managers and translate to on-ground activities.</li> <li>▪ Integrated local government and community landuse planning and management.</li> <li>▪ Protection of good quality agricultural land.</li> <li>▪ Improved biodiversity values across the landscape.</li> <li>▪ Increasing numbers of self-reliant land managers running economically viable properties and industries.</li> <li>▪ Fewer incidents of resource degradation as a result of economic difficulties.</li> </ul>
b) Gain detailed knowledge of salinity outbreaks in the catchment, promote sound catchment practices and monitor progress.	High	
c) Encourage the coordination of regional planning recognising current and potential land degradation issues across the catchment.	High	
d) Improve vegetation management practices to minimise land degradation issues and to improve biodiversity within the landscape.	Medium	
e) Promote programs which will improve the capacity of land holders to implement best management practices for their enterprise.	Low	
f) Increase the area treated with soil conservation earthworks in a coordinated manner.	Low	
g) Establish opportunities for landholders and land managers to access technical advice to enable them to manage land resources sustainably.	Low	
h) Support property management planning as a tool to achieve ecologically sustainable and economically viable agricultural production.	Low	
i) Undertake cost/benefit analysis of land degradation control measures at farm and catchment scales.	Low	
j) Investigate ongoing subsidisation for works addressing land degradation issues and promote alternative funding sources to implement on-ground works.	Low	

## Minerals and Energy

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### *Overview*

Mining activities are becoming more prominent in the Condamine Catchment. There are significant coal deposits in the Condamine catchment, the development of which provides important economic and employment opportunities to local communities. Recent developments include the Millmerran Power Project and Kogan Creek Mine.

Major infrastructure proposals for the catchment associated with coal mining include power stations, rail links, high voltage power lines and pipelines. Collectively, these will have significant water demands, affect floodplain management, water quality management, vegetation management, waste management, nature conservation, land use/management and economic viability issues.

### *Current Condition*

- The way in which energy needs are met has a direct effect on the environment.
- Greenhouse induced climate change has significant implications for agriculture and primary production.
- Current community consultation processes have been largely ineffective. Current mechanisms (ie voluminous and complex documentation, successive meetings, travel, telephone calls etc) are fundamentally incompatible with the manner and circumstances in which landholders derive their income

### *Existing Priority Areas*

- Investment in greenhouse offset mechanisms for all fossil fuel power generating projects, ideally to meet other identified catchment NRM needs eg habitat linking.
- Investigation of potential for greenhouse neutral biomass fuels to broaden economic base and meet regional development / value adding / employment /social welfare objectives.
- Investigation of employment / regional development opportunities created by renewable energy and energy efficiency programs.
- The potential for demand management strategies (energy efficiency) has not been adequately recognised by government economic policies.
- Legislation is required enabling formal recognition of approved catchment management strategies in relation to commercial/government development planning.

### *Performance Indicators*

- Achievement of performance indicators set as part of the Impact Assessment process.
- New opportunities to meet regional development needs that are ecologically sustainable.
- Extent to which groups across the entire catchment have actively participated in community consultation regarding minerals/energy development activity that directly affects them.

## *Minerals and Energy (ME) Priority Catchment Strategies*

**Objective 1:** To have mineral and energy industries within the catchment recognise and incorporate appropriate environmental codes of practice in their operational plans.

Strategies	Priority	Desired Outcomes
a) Promote and implement good land and water management practices (including maintenance programs) within mineral and energy sites.	High	<ul style="list-style-type: none"> <li>▪ Responsible mining exploration and operation where every care is taken to ensure minimal vegetation, land and water disturbance.</li> <li>▪ Comprehensive community consultation on all aspects of proposed mining and energy developments.</li> <li>▪ Efficient use of available resources.</li> </ul>
b) Ensure appropriate community consultation programs are associated with comprehensive Impact Assessment Study's.	Medium	
c) Develop a network of all relevant parties' involvement in planning mineral and energy developments.	Low	
d) Promote industry and resource use efficiency within the catchment.	Low	
e) Ensure ecologically sustainable economic benefits result from the mining and energy industry in the catchment.	Low	
f) Encourage prospective developers to implement value-adding strategies for mineral and energy resources.	Low	
g) Promote the potential for energy efficiency and renewable energy technologies in the catchment.	Low	
h) Lobby appropriate organizations to ensure the formal recognition of catchment strategies when considering mineral and energy developments.	Medium	

# Nature Conservation

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## *Overview*

The native flora and fauna of the Catchment has been substantially altered due to increasing population and changing land use. Major issues include the maintenance of biodiversity, the retention and management of remnant flora communities and loss of both aquatic and terrestrial fauna habitats.

## *Current Condition*

- The Condamine is home to 15 fauna species that are listed under the Nature Conservation Act.
- There is an urgent need to protect critical habitat areas across the catchment in poplar box, brigalow and softwood scrubs; native grasslands; grassy eucalypt woodlands; and riparian zones.
- Existing natural areas such as stock routes, road reserves, riparian zones, wetlands, ridge lines, farm timber reserves, etc need to be retained, appropriately managed and linked by wildlife corridors.
- Less than 1% remains of the original flood plain native bluegrass ecosystem. Critically threatened remnants of native grasslands and eucalypt grassy woodlands occur on the toe slopes and flood plain, particularly to the east of the Condamine River, around Brookstead, Dalby and the township of Condamine.
- A lack of wildlife corridors exist to link isolated forest patches in the Kingsford Ridge/Hermitage area.
- There are extensive corridors along roads and watercourses that require links, and areas of degraded land that would benefit from tree planting programs in the South Myall Creek area.
- There are a number of uncoordinated nature conservation efforts/incentive programs by local authorities, government agencies, and environmental/community groups across the catchment.
- Eucalypt dieback occurs along the Condamine River from Pratten to Macalister causing loss of important habitat for wildlife, loss of natural filter zones for run-off water and loss of an important landscape feature. There is a need to document river redgum dieback / regeneration trends, corridor width, species diversity, weed impacts and habitat values.

## *Future Trend*

- Retention and appropriate management of remnant vegetation communities along the ranges. Rural residential development is encroaching and the understorey in these areas is generally dominated by lantana.
- Development of vegetation management plans to protect endangered ecosystems.
- There is an increasing need for closer cooperation between local authorities, government agencies and environmental/community groups across the catchment.

## *Existing Priority Areas*

Across the entire catchment.

## *Performance Indicators*

- Trend in the retention, management and restoration of native vegetation communities and reductions in extent and number of threatening processes.
- Number and extent of implementation of nature conservation plans.
- Number and extent of implementation of management and recovery plans for protected areas and threatened or endangered species.
- Increase in the area of land where land managers integrate nature conservation with sustainable production.

- Number of planning processes incorporating policies/plans/strategies for biodiversity.

## Nature Conservation (NC) Priority Catchment Strategies

**Objective 1:** Maintained or enhanced catchment biodiversity, with nature conservation incorporated into land management systems at the property, sub-catchment and catchment level.

Strategies	Priority	Desired Outcomes
a) Compile and distribute comprehensive baseline information about the region's natural environment, rare and endangered species, ecological processes and threats to biodiversity.	High	<ul style="list-style-type: none"> <li>▪ Maintained or enhanced existing natural ecosystems.</li> <li>▪ Improved stakeholder understanding of ecological concepts and the region's natural environment (including threatened species).</li> <li>▪ Information for managing biodiversity through landuse practices is readily available to land managers.</li> <li>▪ Integration of biodiversity management with general land management and resource management activities.</li> <li>▪ Increased areas of land managed to protect nature conservation values representing the region's biodiversity, resulting in less risk of species declining or becoming extinct or of losing critical habitats.</li> <li>▪ Nature conservation integrated with land management within a catchment framework being incorporated in to all planning frameworks.</li> <li>▪ Increased quality and availability of information on the extent and status of native vegetation and wildlife populations, threatening processes and economically viable management options that are compatible with nature conservation.</li> </ul>
b) Improve community awareness and understanding of the region's natural environment and assist people to develop a sound working knowledge of ecological concepts.	High	
c) Promote practical measures which will result in improved stakeholder knowledge of nature conservation values.	Medium	
d) Encourage the incorporation of nature conservation considerations into current planning frameworks.	Medium	
e) Develop and implement a nature conservation plan for the whole catchment.	Medium	
f) Use sound ecologically sustainable development principles to integrate ecosystems management within agricultural systems to benefit environmental, recreational, primary production and other regional needs.	Medium	
g) Develop and implement recovery plans for the region's rare and threatened species.	Low	
h) Maximise the value of natural areas and their ecosystems via the use of incentive schemes and cooperative agreements.	Low	
i) Encourage local research projects to focus on establishing the economic benefits of native flora and fauna.	Low	
j) Promote funding sources to implement on-ground works to address biodiversity issues.	Low	
k) Promote collaborative nature conservation' partnerships between local authorities, government departments and environmental/community groups across the catchment	Medium	

## Pest Animals and Weeds

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### *Overview*

Pest animal and weed management has arisen as an issue throughout the Queensland section of the Murray-Darling Basin. Weeds and pest animals are an expensive management issue for landholders and Local Governments (e.g. reduction in yields, toxicity). The invasion of weeds and pest animals will continue to cause a decrease in the natural biodiversity of the catchment.

A coordinated approach as well as a change in community attitude regarding declared and environmental weeds and pest animals is necessary. The Department of Natural Resources and Local Governments are developing a planning framework for coordinated control of weeds and pests throughout the Old Murray Darling Basin. This will form the basis for weed and pest animal control planning within the Condamine Catchment.

### *Current Condition*

- High impact weeds throughout the catchment include: boxthorn, parthenium, honey locust tree, mother of millions, lantana, and lippia. Lippia occurs along all water courses in the catchment and can cause significant damage to infrastructure. Lantana generally dominates understorey vegetation communities along the ranges.
- High impact pest animals include: foxes, dingoes/wild dogs, feral pigs, rabbits, goats, locusts and mice. Cane toads have recently reached the eastern uplands.
- Management of pest animals and weeds is not occurring in an integrated and coordinated manner across the catchment.
- Roadsides throughout the catchment have diverse and concentrated weed populations.
- Highly invasive declared and environmental pest plants (parthenium weed, giant rat's tail grass) continually pose a threat to the Condamine catchment from adjoining catchments (north and east).
- Environmental weeds and garden escapes are an ongoing threat to primary industries, native flora and fauna and a potential threat to human activities.
- Grazing lands, national parks and state forests have weed and pest problems due to land management and resourcing issues.
- Increased use of contracted farm services has led to increased incidence of weed migration via agricultural machinery and transport vehicles.
- Weed migration is occurring through use of contaminated feed grain.
- Increasing resistance of crop pests to pesticides is occurring.
- High impact weeds (including woody exotics, Chinese Celtis) occur extensively throughout riparian zones and impact on flow efficiency and increase channel siltation.

### *Future Trend*

- Pest problems are of increasing concerns.
- Implementation of Integrated Pest Management Plans across the shire.
- There is little incentive to identify the increasing costs of weed control on unproductive land eg African boxthorn/lantana due to low returns.

### *Identified Gaps*

- There is a need for catchment-wide mapping of weed populations (declared and environmental).
- there is a lack of resources to effectively record pest distribution in order for strategic approaches for on-ground control.
- there is limited information on the costs and impact of pests to agriculture and biodiversity.

*Existing Priority Areas*

Across the entire catchment area.

### *Performance Indicators*

- Number of pest management plans developed, implemented and maintained.
- Impacts to agricultural production caused by selected pests.
- Trend in pest numbers, damage and cost of control.

### *Pest Animals and Weeds (PAW) Priority Catchment strategies*

**Objective 1:** A strategic catchment plan addressing weed and pest animal management to maintain or enhance environmental values, agricultural production and catchment health.

Strategies	Priority	Desired Outcomes
a) Raise community awareness of the appropriate management and impacts of major pest plants (declared and environmental) and animals.	High	<ul style="list-style-type: none"> <li>▪ Potential weed plants and areas threatened by weed infestation are clearly identified.</li> <li>▪ Use of a strategic, coordinated, catchment-based approach to pest animal and weed management.</li> <li>▪ Informed management decisions based on an understanding of the distribution and abundance of pest animals and weed species in the region.</li> <li>▪ Improved stakeholder awareness of and commitment to pest animal and weed control.</li> <li>▪ Integration of weed and pest animal planning with other planning activities.</li> <li>▪ Reduction in environmental and agricultural impact of pest animals and weeds.</li> </ul>
b) Establish a process to ensure the coordination of planning for the management of weeds and pest animals by all catchment stakeholders.	High	
c) Develop accurate information on the distribution of weed and pest animal infestations throughout the catchment and identify priority locations for targeted action.	Medium	
d) Maximise external funding opportunities by promoting weed management as an integral aspect of integrated resource management in this region.	Medium	

# Riverine Management

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## *Overview*

The riverine area includes the in-stream habitat, stream bed and banks, and wetlands on the adjacent floodplain. It also includes the vegetation communities which require intermittent flooding to ensure their viability. Riverine areas define an interface including both land and water-based ecosystems.

The effects of all activities right across the catchment accumulate in the riverine area. Nevertheless, these zones are likely to include areas of high conservation and natural heritage value. Effective strategies for the coordinated management of these zones will involve a diverse range of stakeholders and will require a greater sense of ownership and an improved understanding of the functions and values of the zone.

Management of this area in the catchment is one of the most difficult tasks due to its ecological sensitivity, lack of widely accepted appropriate management techniques and associated fertile soils. Available information indicate a general degradation of stream and riparian zones throughout the catchment.

## *Current Condition*

- The Combined Warwick and Clifton Shires River Improvement Trust have completed a strategic planning process for the Upper Condamine and its Tributaries.
- In the past, intervention in the riparian zone has been on a mostly ad hoc basis, lacking strategic direction, community consultation and assessment of local and downstream impacts.
- Many landholders, resource managers and members of the community do not generally appreciate the need for longer term investments in coordinated riparian zone management in the catchment.
- There is a general lack of understanding of the dynamic ecological processes of the riparian zone resulting in a wide and sometimes conflicting range of needs and expectations.
- Existing legislation does not adequately define issues of ownership and responsibility for these ecosystems.
- The state of the rivers, Upper Condamine and Major tributaries report, outlines a number of riverine areas that are highly degraded. Adjacent land use and management is a major contributor to this.
- Many landholders, resource managers and members of the community do not appreciate the aesthetic, ecological, and recreational benefits of riparian zones.
- During the State of the Rivers survey, conducted in 1994, most of the stream lengths in the catchment were rated as having riparian vegetation, aquatic habitat and aquatic vegetation in very poor condition. Exotic weed species formed a large proportion of the understorey and groundcover (a mean of 37% of the species composition). The width of the riparian zone was generally less than 21 metres.
- The Condamine-Balonne WAMP Environmental Flows Technical Report (2000) indicates that the area upstream of Cecil Plains has poor streamside vegetation with physical habitat, water quality and fish communities categorised as fair to good. Only the level of macro-invertebrates were indicated as 'mainly good'. The environmental Flow assessment (end of 1997 development) upstream of Loudon was generally fair to good condition but with a large increase in times of 'no flow' upstream of Loudon.

### *Future Trend*

- Lippia, willows, eucalyptus dieback and carp infestations are major issues for the riparian zone.
- Rehabilitation of degraded riparian zones needs to be undertaken on a priority basis, so that further deterioration is minimised.
- There are many opportunities for collaborative riparian zone management activity across the catchment e.g. Upper Condamine River Improvement Trusts (Warwick and Clifton) are keen to work closer with the CCMA to better align strategic work programs.
- The CCMA working in conjunction with a number of organisations will coordinate the development of an integrated action plan addressing riparian zone management issues.

### *Existing Priority Areas*

Across the entire catchment.

### *Performance Indicators*

- Extent, diversity and quality of native riparian and buffer zone vegetation retained or rehabilitated.
- Health of riverine environment measured according to agreed indices.

## *Riverine Management (RIV) Priority Catchment Strategies*

**Objective 1:** To maintain and enhance the ecological values (physical and biological) and the condition of in-stream and riparian zones within the catchment.

<b>Strategies</b>	<b>Priority</b>	<b>Desired Outcomes</b>
a) Support the development and implementation of riparian vegetation and wetland retention and rehabilitation plans at catchment and sub-catchment level.	High	<ul style="list-style-type: none"> <li>▪ Improved biodiversity of riparian flora and fauna (including terrestrial, aquatic and invertebrates).</li> <li>▪ Physical and biological values of the riparian zone and associated watercourses are maintained or enhanced.</li> <li>▪ Improved water quality of water in watercourses.</li> <li>▪ Increased community awareness and stewardship of riparian values.</li> </ul>
b) Identify 'and promote incentives for landholders to use recognised 'best practice' land use and management to minimise wastes /nutrients /sediment /weeds impacting on riparian zones.	High	
c) Improve the quality of information and data relating to the overall condition and trend of riparian zones and associated ecological processes in the Condamine Catchment.	Medium	
d) Determine environmental flow requirements and develop a plan for implementation.	Medium	
e) Establish Local Water Quality Objectives for the Condamine-Balonne Catchment and develop a Water Quality Management Plan to ensure they are achieved.	Medium	
f) Implement planning and management measures to protect fisheries habitats and strategically address fish passage throughout the region's river systems.	Medium	
g) Improve recognition of the importance of riparian zones in local government Planning Schemes and other planning processes.	Medium	
h) Improve community awareness of riparian values including economic and aesthetic benefits.	Low	
i) Establish an advisory group to provide advice and conduct regular training for those interested in riparian zone management.	Low	
j) Implement strategic on-ground works to reduce/prevent riverine degradation.	Low	

## Tourism and Recreation

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### *Overview*

Tourism provides employment opportunities and makes a significant contribution to the regional economy. It provides an opportunity to inform about appropriate land management, to increase understanding of the rural environment and increase appreciation of resource management issues.

Many aspects of recreation and tourism depend on a reliable supply of good quality water. The towns, rivers, stream and water storages of the Condamine Catchment provide major recreational resources for the region and are increasingly important as tourist attractions. The Catchment is also home to a number of National Parks such as the Bunya Mountains, Main Range and the Goomburra State Forest.

### *Current Condition*

- Major water based recreation activities include fishing, water skiing, boating, and swimming.
- Camping, picnicking, bushwalking and birdwatching are associated land based activities.
- Major recreation facilities have been developed at Leslie Dam and Lake Broadwater with additional facilities at local spots along the Condamine River such as Chinchilla Weir.
- Conflicts may occur between competing recreational activities on restricted water bodies and between agricultural and recreational water users.

### *Existing Priority Areas*

- Establish a network with tourist industry offices to actively promote locations that exhibit the results of good NRM practices.

### *Performance Indicators*

- Number of tourists that visit primary recreational areas.
- Availability of tourist information that highlights the benefits of locations due to the implementation of sustainable NRM practices.
- Implementation of key signage depicting NRM issues in key tourism locations.

## *Tourism and Recreation (TAR) Priority Catchment Strategies*

**Objective 1:** Assess, coordinate, effectively manage and promote our natural resources and encourage involvement in the conservation and use of natural and heritage areas via tourism and recreation in the Condamine Catchment.

<b>Strategies</b>	<b>Priority</b>	<b>Desired Outcomes</b>
a) Assess the recreation and tourism values of the Catchment's resources and the existing and potential levels of demand.	Medium	<ul style="list-style-type: none"> <li>▪ Identified and accepted recreation and tourism values throughout the catchment.</li> <li>▪ Coordinated planning, management and development of tourism and recreation facilities.</li> <li>▪ Educational opportunities are available and suited to audience needs.</li> </ul>
b) Improve public awareness and education about availability and values of these resources and encourage their appropriate use.	Medium	
c) Encourage measures to ensure that recreation is in harmony with cultural and environmental values.	Medium	
d) Develop mechanisms for resolving conflicts between competing users.	Low	
e) Improve coordination associated with the planning, management and development of outdoor recreation.	Low	
f) Establish legislation requiring the formal recognition of approved catchment management strategies in relation to commercial/government development planning for tourism and recreation purposes.	Medium	

# Waste Management

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## *Overview*

Waste is the generic term for a by-product of a production system with no defined use. All land occupiers and land users are waste producers.

Wastes are produced in all areas of human activity, including: domestic, commercial, industrial, demolition and construction, clinical, and agricultural situations.

Priorities for management of these wastes vary according to urban/rural situations, economies of scale and environmental impact.

Waste streams can be divided into four categories:

- Waste streams that can be re-used with minimal adverse environmental impact. e.g. stable manure, household green waste)
- Waste streams requiring processing before reuse with minimal adverse environmental impact (e.g. abattoir, dairy factory waste)
- Waste streams which cannot be re-used readily and /or have an adverse environmental impact (e.g. plastic mulch, pesticide drums)
- Toxic waste streams requiring intensive processing to counteract adverse environmental impacts(nuclear, scheduled wastes)

The potential for on-site reuse or processing of waste depends on the volume, biological reactivity, land capability and the management focus of the landholder.

## *Current Condition*

Waste management is a local government responsibility and a high priority issue for a number of state agencies and all Councils in the Condamine Catchment.

There are a number of national and state level waste management programs aimed at reducing gross pollutants, pressure on landfill sites and improving community amenity value. Other States have also developed comprehensive strategies that could be adapted to the needs of local governments in the Condamine Basin.

Many wastes are 'mobilised' by water. The Condamine River flood plain is regularly inundated, and flash flooding occurs sporadically across the catchment. All major population centres experience severe flooding every 5-10 years, adding gross pollutants, heavy metals, oils, fertilisers and pesticides to the waste stream. The dumping of category 3 and 4 wastes in the Condamine Catchment should be strongly discouraged.

Current internal reports and DPI sources highlight the increasing levels of intensive animal industry applications in recent months. This is primarily due to increasing opportunities for pork exports and current market prices for cattle. The Intensive Livestock Environmental Management Services section of DPI carefully assess each application based on current levels of knowledge.

## *Future Trend*

- Growth in intensive livestock industries has slowed. Farms are increasingly implementing waste management plans.

## *Priority Areas*

Across the entire catchment.

### Performance Indicators

- Trend in total quantity of urban waste disposed of as landfill.
- Trend to continually increasing the recycling of oil, paper, metal, glass and plastics.

### Waste Management (WM) Priority Catchment Strategies

**Objective 1:** Minimise all wastes and their impact on the soil, water and vegetation of the Condamine Catchment.

Strategies	Priority	Desired Outcomes
a) Identify sub-catchments with Hotspots of Waste producers and then identify Regional Transfer Opportunities (cumulative loads).	High	<ul style="list-style-type: none"> <li>▪ Increased levels of use and demand of recycled products.</li> <li>▪ Appropriate disposal processes established and monitored.</li> </ul>
b) Promote the waste hierarchy of "avoid, reuse, reduce, recycle, dispose" and encourage all stakeholders to adopt.	Medium	
c) Improve the location of waste producing / processing enterprises to minimise adverse environmental impacts.	Low	
d) Develop management plans for waste disposal (wastes that cannot be recycled or processed any further) and promote their implementation.	Low	
e) Match waste processors with potential end users and promote new waste processing ventures.	Low	

**Objective 2:** To promote personal responsibility for waste management and waste minimisation by all sectors of the catchment community.

Strategies	Priority	Desired Outcomes
a) Divert greenwaste from landfill sites.	Low	<ul style="list-style-type: none"> <li>▪ Increased levels of use and demand of recycled products.</li> <li>▪ Appropriate disposal processes established and monitored.</li> </ul>
b) Encourage waste producers to audit on-site practices for environmental, social and economic sustainability.	Low	
c) Encourage use and appropriate management of septic and dry toilet systems and water conservation appliances, roof tanks etc.	Low	

## Water Access, Use and Management

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### *Overview*

The hydrology of the catchment is highly variable. Annual average stream flows vary widely, few with permanent flow and many streams and aquifers are fully or over committed. Overland flows are a significant component of the water resource within the catchment with the number of development increasing considerably in recent years. Water resources are under pressure from increasing demands for an expansion of irrigated agriculture, as well as industrial and urban development. The reuse of wastewater is currently being investigated.

The Department of Natural Resources and Mines are currently progressing a number of planning initiatives in conjunction with key stakeholders to address many of the water management issues in the catchment. One of the key mechanisms to implement change will be via a Resource Operations Plan (ROP). These plans will essentially define, for each part of the basin, the rules that will be applied in the day-to-day management of streamflows and water infrastructure in order to achieve water management objectives.

### *Current Condition*

- Continued uncontrolled development and extraction of overland flows is impacting on the performance of the catchment's streams and affecting established water rights.
- Over-utilisation of surface and shallow ground water supplies (e.g. urban, stock and domestic supplies vs. irrigation) is a threat to the reliability of this resource.
- There are many areas in the catchment where groundwater supplies are limited due to natural constraints of aquifer type, depth, thickness, recharge and storage/transmission characteristics.
- There is a lack of knowledge relating to environmental flow requirements and ground water resources across the catchment.
- Aquifer recharge is affected by stream siltation.
- There is increasing competition for available groundwater supplies.
- There is a high reliance placed on groundwater as the mainstay source of water supply for stock, domestic, irrigation, industrial and a number of urban centres in many parts of the catchment.

### *Future Trend*

- Water sharing, water trading, compensation and pricing are emerging issues
- Demand for water from the Great Artesian Basin (GAB) is an issue but present Government Policy restricts use of GAB water.

### *Identified Gaps*

- There is a need for increased understanding of environmental flow requirements for the entire catchment, including groundwater contributions.
- Increased monitoring is required to improve the accuracy upon which current planning initiatives are being based.
- There is a need to consider social and economic impacts as part of water planning processes.
- Increased monitoring to better understand yield limitations of many aquifer and stream systems in the catchment.

### *Existing Priority Areas*

Groundwater:           Condamine Groundwater Management Area, Oakey Creek  
                                  Groundwater Management Area, Cambooya Basalts, Nobby Restricted  
                                  Licence Area, Eastern Downs Basalts, Upper Condamine River and  
                                  Tributaries Alluvium , Eastern Surat Basin Sediments, South Myall Creek,

Brigalow Jimbour Floodplains, Yamsion/Rangemore, Gomaren/Doctors Creek.

Surface Water: Across the catchment.  
Overland flows: Condamine Floodplain.

### *Performance Indicators*

- Completion and implementation of the Condamine Balonne Water Allocation and Management Plan.
- Number and extent of implemented groundwater management plans.
- Licensing trends: number, type, allocation, area and impact on surface and groundwater.

### *Water Access, Use and Management (WAM) Priority Catchment Strategies*

**Objective 1:** To have a balance between consumptive and environmental use of water within the catchment, based on fair and equitable distribution of the resource.

Strategies	Priority	Desired Outcomes
a) Determine flow sharing requirements for the Condamine Catchment.	High	<ul style="list-style-type: none"> <li>▪ Whole of catchment approach when making water resource management decisions.</li> <li>▪ Sustainable use of catchment water resources.</li> <li>▪ Information needs on catchment water resources are addressed.</li> <li>▪ Water more effectively and efficiently used within the sustainable yields of catchments to achieve a balance between consumptive and environmental needs.</li> </ul>
b) Gain extensive knowledge of the water resources of the catchment and the relationships between them.	High	
c) Support programs to increase the efficient use of water resources in urban, rural and industrial areas.	High	
d) Determine long-term sustainable ground and surface water access and quantity.	Medium	

**Objective 2:** Develop and implement an overall plan addressing management and allocation issues associated with all uses of surface (including overland and instream flows) and ground waters to achieve sustainable use.

Strategies	Priority	Desired Outcomes
a) Implement appropriate plans and actions to achieve long-term sustainable groundwater use.	High	<ul style="list-style-type: none"> <li>▪ Whole of catchment approach when making water resource management decisions.</li> <li>▪ Sustainable use of catchment water resources.</li> <li>▪ Information needs on catchment water resources are addressed.</li> <li>▪ Water more effectively and efficiently used within the sustainable yields of catchments to achieve a balance between consumptive and environmental needs.</li> </ul>
b) Implement appropriate plans and actions to achieve long-term sustainable surface water use.	Medium	

# Water Quality

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## *Overview*

Suitable water quality is the foundation for agriculture, urban and industrial development as well as being vital for ecological considerations. Further information on suitable water quality for different uses can be found in the ANZEC guidelines.

The Condamine Catchment is highly populated and supports a diverse range of agricultural, social and recreational activities. Consequently, there are many pressures on maintaining water quality. Increasing levels of pollution in the Condamine River and its' tributaries is a major community concern.

Water quality guidelines advise the required level of protection or the level of water quality required for the environmental value under consideration. The Australian and New Zealand Environment and Conservation Council (ANZECC) *Water Quality Guidelines for Marine and Fresh Waters* (ANZECC 1992) is generally accepted as the reference document for assessing water quality in Australia. CBWC are progressing the development of appropriate water quality objectives which are specific to the catchment. These objectives should be available late 2001.

## *Current Condition*

- Turbidity levels generally increase with distance downstream. In the uplands, turbidity was less than 100 NTU, and less than 5 NTU for a significant proportion of the time. In the upper floodplain, turbidity was usually in excess of 10 NTU. In the uplands higher turbidity is generally associated with erosive flooding events. In the upper floodplain turbidity is influenced by the upstream sediment load from both 'natural' and artificial sources associated with the development of the catchment.
- Total phosphorus concentrations generally increase with increasing distance downstream. In the uplands total phosphorus concentrations were usually less than 1.0 mg/L. In the upper floodplain total phosphorus concentrations were usually less than 1.0 mg/L, with lower concentrations (less than 0.1 mg/L) occurring for up to 15% of the time. Very high concentration of total phosphorus (generally above 1.0 mg/L) are only found on small volume tributaries, and are associated with runoff from the larger urban centres and sewage treatment plants.
- Conductivity in the uplands was usually less than 300 ms/cm, but appears to be increasing. In the upper floodplain conductivity was usually less than 800 ms/cm and less than 300 ms/cm at most sites for at least 25% of the time. Higher conductivity (frequently exceeding 800 ms/cm) tributaries include Hodgson, Oakey and lower Allora creeks.

*Source: Water Quality in the Condamine-Balonne Catchment report, 1999*

*\* Uplands – Condamine River upstream from Warwick, upper part of tributary systems between Warwick and Dalby.*

*\* Upper Floodplain – Condamine River between Warwick and Chinchilla, lower reaches of associated tributary systems.*

## *Future Trends*

- There is a need for greater interaction between indicators of river health and water quality monitoring programs.
- Increased interest in the water resources for agricultural industry and urban usage has lead to increased pressure on maintaining water quality and quantity.

## *Identified Gaps*

- There is no process to address water quality with regard to environmental flows.
- There is no permanent source of funding for water quality monitoring in the catchment.
- There is limited monitoring of groundwater quality issues.

### Existing Priority Areas

Across the entire catchment.

### Performance Indicators

- Trends in measured biological, physical and chemical parameters for surface and groundwater.
- Trend in nitrogen, phosphorus, electrical conductivity, pesticides and organic chemicals in surface water, groundwater and soils.
- Community skill development and attitudinal change.

### Water Quality (WQ) Priority Catchment Strategies

**Objective 1:** To protect water quality for agricultural, urban, industrial and environmental uses, including protection of ecosystems.

Strategies	Priority	Desired Outcomes
a) Encourage ongoing research and development to review the movement of pesticides and chemicals across the landscape.	High	<ul style="list-style-type: none"> <li>• Catchment river health is maintained and where possible enhanced.</li> <li>• Local water quality objectives are consistently met.</li> <li>• Access to water quality information is easily accessible and interpreted.</li> <li>• Cumulative and downstream impacts on water quality are core considerations considered during planning processes at all scales.</li> <li>• Improved management of landscapes and land uses which contribute excessive (volumes/amounts) nutrient and sediment runoff into streams.</li> </ul>
b) Encourage the implementation of land use and water management practices, which would result in the achievement of acknowledged environmental flow and ecological requirements.	High	
c) Ensure water quality (surface and ground) is adequately considered and addressed in all planning and approval processes.	High	
d) Provide information to enable all members of the catchment community to understand the effect of their activities on water quality.	Medium	
e) Encourage active community participation in programs such as Waterwatch by all community members.	Medium	
f) Identify hot-spots and develop specific plans to implement best management practices for the protection of water quality.	Medium	
g) Support community participation in the development of Resource Operation Plans (ROPs).	Medium	
h) Support action planning and incentives relating to water quality improvements associated with land management practices.	Medium	

**Objective 2:** Develop and implement a permanent water quality monitoring program to reliably assess and report on water quality condition and trend.

Strategies	Priority	Desired Outcomes
a) Develop a database that encompasses all available relevant water quality information, including flow information, and is accessible to the wider community.	Low	<ul style="list-style-type: none"> <li>• Catchment river health is maintained and where possible enhanced.</li> <li>• Local water quality objectives are consistently met.</li> </ul>
b) Secure ongoing funding for a permanent (surface and ground) water quality monitoring and reporting program which addresses local water quality objectives for the Condamine-Balonne catchment.	Low	<ul style="list-style-type: none"> <li>• Access to water quality information is easily accessible and interpreted.</li> <li>• Cumulative and downstream impacts on water quality are core considerations considered during planning processes at all scales.</li> </ul>
c) Encourage local water quality monitoring to assist in monitoring and evaluation activities associated with integrated action planning.	Low	<ul style="list-style-type: none"> <li>• Improved management of landscapes and land uses which contribute excessive (volumes/amounts) nutrient and sediment runoff into streams.</li> </ul>

### 3 TARGETS FOR THE CONDAMINE CATCHMENT

In order to protect the health of the Condamine catchment and its sub-catchments, the Condamine Catchment Management Association is encouraging the active participation by all sectors of the community in the development of targets for our NRM systems.

The Association will over time, work with the community to set targets for each of the key issues identified within this strategic plan. Many of these will be developed via input into wider regional planning processes (State/Commonwealth level) with the opportunity to identify key needs within the catchment community.

All sectors of the community have varying levels of interest in the future management of our natural resources. Past actions have caused changes to the landscape, to our land, water and other significant resources. Now we must look to the future and seek to balance our use of these resources for the benefit of future generations acknowledging that we all share responsibility for the health of the catchment.

There are a number of recent NRM initiatives at a state and federal level that will affect the use of our catchment resources. They include the:

- National Action Plan for Salinity and Water Quality (NAPSWQ).
- Murray-Darling Basin Ministerial Council's policies "Integrated Catchment Management in the Murray-Darling Basin 2001-2010" and the "Basin Salinity Management Strategy 2001-2015"

#### 3.1.1 Why do we need to set targets?

The Condamine-Balonne-Maranoa catchment is one of four Queensland catchment regions identified as 'highly affected' under the NAPSWQ. Agreed targets and standards will need to be set between the Commonwealth and the States/Territories in consultation with the relevant community to ensure effective use of Commonwealth funding. Specifically, management systems need to be developed that allow communities and government at all levels to work together for both public and private good.

Queensland has agreed with the above mentioned initiatives. Two measures that have been implemented at a state level that will contribute towards the setting of targets are the:

- Queensland Vegetation Management Reforms
- Queensland Water Reforms

#### 3.1.2 What targets will be required?

Specifically over the next decade the Murray-Darling Basin Ministerial Council will develop Basin-wide strategies for the following areas:

- *water quality*: reducing or stabilising in-stream salinity (by 2003) and reducing the threat of algal blooms (by 2003).
- *water sharing*: establishing flow regimes that provide an appropriate balance between consumptive and in-stream, wetland and floodplain water requirements (by 2006).
- *riverine ecosystem health*: maintaining/re-establishing viable populations of native species and integrity of ecological communities throughout their range within floodplain, wetland, riparian, in-stream and estuarine ecosystems (by 2006).
- *terrestrial biodiversity*: maintaining key ecological processes; maintaining or re-establishing viable populations of native species and integrity of ecological communities (especially vegetation); and controlling threats to biodiversity (by 2006).

- *catchment health*: a system of 'core signals' will be developed for each catchment to assess trends in the health of the catchment and pressures on the water, land and other environmental resources of the catchment. These core signals will incorporate the targets for water quality, water sharing, riverine ecosystem health and terrestrial biodiversity (by 2008).

### 3.1.3 Target setting in the Condamine

The target-setting process within the Condamine catchment will allow all members of the community to participate in the definition of minimum standards and targets for the management of our natural resources. These targets will provide a benchmark against which progress can be measured over time.

To be of value, targets must be:

- measurable
- at appropriate scales
- comparable across sub-catchments
- meaningful, clearly reflecting outcomes sought
- set in specific locations, relative to valuable assets
- time-bound, with achievable targets moving progressively closer to agreed outcomes
- based on best available science and knowledge
- clearly linked to management actions

### 3.1.4 Information required to set targets

Recognising that knowledge is and will continue to be imperfect, the setting of targets will be on an action-learning basis. Ideally the target-setting process will:

- identify assets for which protection is necessary and beneficial
- determine targets for those assets based on the level of protection sought
- build targets into relevant NRM plans
- involve all partners in developing targets
- begin with interim targets
- set targets which can be delivered in a reasonable timeframe
- evaluate and refine targets as knowledge improves
- be accountable for the way in which targets are set and refined

### 3.1.5 Options for target implementation

A range of mechanisms will be considered for the achievement of targets. The CCMA will actively support the innovative use and appropriate mix of mechanisms for implementation.

Possible options include:

- reforms to the institutions which manage natural resources and the way they interact
- regulations, such as planning controls, licensing industry use of natural resources and covenants (land management agreements, binding on successive land managers)
- market mechanisms to attract investment in environmental protection and sustainable industries and to incorporate environmental costs in the costs of production
- protection of assets through direct investment, including incentives
- provision of knowledge and promotion of understanding
- support for communities undergoing difficult change.

## 4 APPENDICES

### Appendix A Membership of the Condamine Catchment Management Association Inc

#### *Community Members*

- |  |   |
|--|---|
| <b>Bobbie Brazil<br/>(Brookstead)</b>          | <ul style="list-style-type: none"><li>▪ Farmer and lawyer</li><li>▪ Qld representative on the Australian Landcare Council</li><li>▪ Chair of Land and Water Australia</li><li>▪ Condamine representative on the Community Advisory Council to the Murray Darling Basin Ministerial Council</li><li>▪ Upper Condamine Floodplain and RiverReach Steering Committees</li><li>▪ Cotton Research and Development Corporation and Australian Cotton CRC Boards.</li><li>▪ Queensland Farmers Federation and formerly National Farmers Federation Environment committees.</li></ul> |
| <b>David Brown<br/>(Allora)<br/>Vice Chair</b> | <ul style="list-style-type: none"><li>▪ Feedlotter</li><li>▪ Veterinary surgeon</li><li>▪ Meat Research Corporation Board</li><li>▪ Australian Feedlotters Association</li><li>▪ Rotary</li><li>▪ Warwick River Improvement Trust</li></ul>   |
| <b>Pam Postle<br/>(Pittsworth)</b>             | <ul style="list-style-type: none"><li>▪ Primary Producer</li><li>▪ Pittsworth Landcare Group</li><li>▪ Former Pittsworth Shire Councillor</li><li>▪ Hodgson Creek Catchment Group</li><li>▪ QMDC representative</li></ul>   |
| <b>John Armbruster<br/>(Junabee)</b>           | <ul style="list-style-type: none"><li>▪ Dairy Farmer</li><li>▪ Condamine Headwaters Landcare Group</li><li>▪ South region representative on Landcare &amp; Catchment Management Council</li><li>▪ Deputy Condamine representative on the Community Advisory Council to the Murray Darling Basin Ministerial Council</li></ul>   |
| <b>Inez Rosser<br/>(Killarney)</b>             | <ul style="list-style-type: none"><li>▪ Former teacher and librarian</li><li>▪ Primary producer</li></ul>   |
| <b>Ben Wilshire<br/>(Toowoomba)</b>            | <ul style="list-style-type: none"><li>▪ Agforce</li><li>▪ Plant Biologist / Soil Scientist</li></ul>  |
| <b>Dr Peter Wylie<br/>(Dalby)</b>              | <ul style="list-style-type: none"><li>▪ Senior Consultant, Horizon Rural Management</li><li>▪ Director, Conservation Farmers Inc.</li></ul>   |
| <b>John Matthews<br/>(Jondayan)</b>            | <ul style="list-style-type: none"><li>▪ Former Jondaryan Shire Councillor</li><li>▪ Primary Producer</li><li>▪ Director and Company Secretary, Jondaryan Woolshed Association</li><li>▪ QMDC representative</li></ul>   |
| <b>Lady Barbara<br/>Jephcott<br/>(Warwick)</b> | <ul style="list-style-type: none"><li>▪ Veterinary Surgeon</li><li>▪ Agforce</li></ul>  |
| <b>Jim Parke<br/>(Toowoomba)</b>               | <ul style="list-style-type: none"><li>▪ Lawyer</li><li>▪ Councillor, Toowoomba City Council</li></ul>   |

### *Special Members*

- Bernie O'Donohoe (Clifton)**      ■ Darling Downs Local Government Association  
                                 ■ Councillor, Clifton Shire Council
- Dianne Thorley (Toowoomba)**      ■ Eastern Downs Regional Organisation of Councils (EDROC)  
                                 ■ Mayor Toowoomba City Council
- Dr George Smith**      Department of Natural Resources & Mines  
                                 Darling Downs District Manager, Toowoomba
- Glen Brown**              Environmental Protection Agency, Toowoomba  
                                 Environment Planning
- Phillip West**              Department of Primary Industries  
                                 Snr. Project Officer, Toowoomba

### *Associate Membership*

- |                             |              |
|-----------------------------|--------------|
| ■ Mr Andrew Baldwin         | Chinchilla   |
| ■ Mr JL Bender              | Chinchilla   |
| ■ Mr RJ Boshammer           | Chinchilla   |
| ■ Mr Kim Bremner            | Bowenville   |
| ■ Clifton Shire Council     | Clifton      |
| ■ Mr Stuart Copeland MP     | Pittsworth   |
| ■ Mrs Margot Cory           | Warwick      |
| ■ Mr Ben Cory               | Warwick      |
| ■ Mr Dennis Dickman         | Chinchilla   |
| ■ Mr Matthew Durack         | Toowoomba    |
| ■ Mr EG Fuhlbohm            | Pittsworth   |
| ■ Mr Anthony Green          | Thane        |
| ■ Mr Scott Greensill        | Pittsworth   |
| ■ Mr Steve Hanlon           | Cecil Plains |
| ■ Mr John Hasted            | Toowoomba    |
| ■ Mr Ian Hayllor            | Dalby        |
| ■ Mr Howard Hobbs MP        | Charleville  |
| ■ Mr Mike Horan MP          | Toowoomba    |
| ■ Mr Bill McCutcheon        | Brigalow     |
| ■ Mr Brian Mclean           | Pittsworth   |
| ■ Ms Sarah Moles            | Allora       |
| ■ Mr Ian Nielsen            | Warwick      |
| ■ Mr Michael Peter          | Morningside  |
| ■ Mr John Porter            | Toowoomba    |
| ■ Mr Kevin Roberts          | Dalby        |
| ■ Mrs Johannes Roellgen     | Brookstead   |
| ■ Mr Kerry Shine MP         | Toowoomba    |
| ■ Mr Alastair Silcock       | Pittsworth   |
| ■ Mr J Speed                | Oakey        |
| ■ Mr Mike Spence            | Toowoomba    |
| ■ Mr Lawrence Springborg MP | Stanthorpe   |
| ■ Mr Peter Thomas           | Brookstead   |
| ■ Mr Graham Vellnagel       | Warra        |
| ■ Mr Bob Walker             | Toowoomba    |
| ■ Mr NL Wirth               | Dalby        |
| ■ Gary Alcorn               | Toowoomba    |

- Marge Alcorn Toowoomba

*Former CCMA Community Members*

- Michael Spence Toowoomba
- Sarah Moles Allora
- Steve Hanlon Cecil Plains
- Graham Vellnagel Warra
- Beth Searle Clifton
- Lorraine Clewett Toowoomba
- Ken Stallman Pittsworth
- John Lovelace Toowoomba
- Bill McCutcheon Brigalow
- Peter Bligh Brookstead
- Geoff Hewitt Dalby
- Stan Edwards Jandowae
- Des Cooper Warwick
- Des Rinehart Condamine
- Lyn Brazil Brookstead
- Chris Cameron Chinchilla
- George Ezzy Millmerran
- Ian McClement Toowoomba
- Ian Knight Toowoomba
- Malcolm McDonald Toowoomba
- Sandy Speed Oakey
- Chris Kennard Felton

*Support Staff*

**Catherine Potter** Catchment Coordinator  
**Pam Harris** Catchment Support Officer

**Former CCMA** Kym Witney-Soanes  
**Coordinators** David Carberry

## Appendix B Review of Condamine Catchment Strategic Plan (1996-2000)

Condamine Catchment Strategic Plan has been an integral tool for NRM in the catchment since 1996. Since then a number of achievements have been made as detailed below.

### *Communication Education and Awareness*

- Increased community input into the planning processes of local and state government.
- Regular distribution of 'Catch-up with the Condamine' newsletter to highlight key issues, opportunities and events relating to natural resource management.

### *Water access, quantity and environmental flows strategy*

- The WAMP process is underway to quantify available water resources and establish a management plan.
- End of valley flow regimes providing for instream and downstream obligations are being investigated.
- Local management options to secure sustainable groundwater use are being developed.
- CCMA held a water forum to promote discussion between key stakeholders on the WAMP process.

### *Land use and Management Strategy*

- Increased levels of implementation of appropriate land conservation management techniques.
- The Upper Condamine Floodplains project has provided direction for the implementation of appropriate run-off water management techniques.
- The sub-catchment action planning process has created a coordinated approach in addressing land degradation issues.

### *Water Quality*

- A Water Quality Management Plan is now in draft form identifying management practices for sub-catchments throughout the Condamine-Balonne catchment.
- Waterwatch has continued to expand throughout the catchment.

### *Weeds*

- Priority locations of weeds have been identified at a catchment and sub-catchment level and substantial links between local government and Landcare have been made to address this issue.
- APEC project dealing with Parthenium has been initiated and Jondaryan Shire council is a local case study in implementing the recommendations.

### *Nature Conservation*

- CCMA has secured funding for a 3-year project entitled 'Implementing Vegetation Management on a Catchment Basis'. To date some 267 000 hectares of land have undergone integrated property planning for effective vegetation management.

### *Riparian Zone Management*

- The RiverReach project has assisted 11 sites in the Condamine Catchment to address riverine issues.

## Appendix C Strategic Plan Consultation Process

The key priority issues were derived following:

- extensive distribution through the catchment of a draft version (1999) seeking community input
- a 2 day workshop held at Adora Downs with stakeholder representatives in 1998
- a written survey of government, community and industry groups conducted by the CCMA in 1995
- further community consultation undertaken by the CCMA in 1994
- initial community consultation conducted for the Murray-Darling Basin Commission in 1992
- ongoing feedback provided by the catchment community

Stakeholders consulted include

- State Government departments
- Local Government
- Industry groups (e.g. Agforce, Condamine River Basin Irrigators' Association)
- Community groups (e.g. Landcare, Condamine-Balonne Water Committee, Greening Australia, Toowoomba and Region Environment Council)

This strategy underwent an interim review in October 1998 in keeping with the needs of the community. Significant changes to note include the:

- addition of the floodplain management, waste management, minerals and energy, tourism and recreation, cultural heritage and economic sustainability strategies
- inclusion of performance indicators and desired outcomes
- inclusion of priority areas within each strategy section

Ongoing consultation on the CCSP will include:

- presentations to the Regional Directors of various State Government Departments
- negotiation to achieve outcomes with parties identified within this strategic plan
- use of mass media to promote the strategy and receive comment from the wider community

The diversity of stakeholders represented on the CCMA is invaluable to the strategic planning process. Views are represented on the CCMA from local government and state agencies, industry, environmental and Landcare groups. Other organisations regularly consulted include Greening Australia, University of Southern Queensland, Eastern Downs Regional Organisation of Councils, Land and Water Australia, Department of Agriculture, Fisheries, and Forestry Australia, Environment Australia, Murray-Darling Basin Commission and the Queensland Murray-Darling Committee. All these organisations play a key role in the strategic planning process underway in the Condamine catchment.

The policy decision of the Murray-Darling Basin Ministerial Council in June 1996 "that as far as possible all natural resources management initiatives in the Basin be incorporated in regional strategies and action plans to reflect the Murray-Darling Basin Commission's and Ministerial Council's focus on integrated catchment management" and the development of the Basin Sustainability Program, has been a driving force for planning at the catchment level.

## Appendix D An Example of an Action Plan

Strategy (PAW)	Actions	How to implement	Indicators	Who does it		Where	When	Funding Required	Funding Source
				Lead	Stakeholders				
<b>Objective</b> A strategic catchment plan addressing weed and pest animal management to maintain or enhance environmental values, agricultural production and catchment health.									
Raise community awareness of the appropriate management and impacts of major pest plants (declared and environmental) and animals.	Support existing education and extension programs								
	Seek new opportunities (electronic & print media, corporate sponsorship) to promote best practice weed and pest animal management.								
	Target key groups (e.g. harvesters, nurseries, Telstra etc) to seek improved ID and awareness of high profile weeds								
	Support the restriction, importation and sale of potentially invasive plants								
	Promote the value of native trees, shrubs and grass species to landscaping and nursery industries.								
	Develop protocols to prevent high impact weeds and pests entering the Condamine catchment								

## Appendix E Memorandum of Understanding Proforma

To Whom it May Concern,

Re: Condamine Catchment Strategic Plan

I write on behalf of the Condamine Catchment Management Association to seek your endorsement of the Condamine Catchment Strategic Plan.

This document has been drafted after various forms of consultation with the members of the Condamine catchment community and has been written in accordance with the Queensland guidelines for Integrated Catchment Management.

Upon consideration of the relevant strategies, please find enclosed a copy of the Strategy and a draft letter of endorsement to be returned to the Condamine Catchment Management Association. The Memorandum of Understanding provides written agreement of support from your agency.

Your endorsement of this Strategy will benefit sustainable resource management in the Condamine Catchment.

Your commitment will assist in setting direction for sustainable natural resource management, in particular nature conservation and the maintenance of biodiversity. I look forward to your positive response.

Yours sincerely

Chair – Condamine Catchment Management Association Inc.

---

Dear

### MEMORANDUM OF UNDERSTANDING

I write on behalf of (organisation name) to provide our endorsement of the Condamine Catchment Strategic Plan.

Our organisation supports the principles of Integrated Catchment Management in the Condamine catchment.

We support this Strategy as a positive initiative which aims to achieve sustainable natural resource management goals.

Our organisation is willing to endorse this document and accept responsibility for the following actions identified in the Strategy:

*Issue:*  
*Strategy/s:*

Yours sincerely

XXXXX

## Appendix F The Action Planning Process

The steps below outline a way that groups can prepare an action plan on a sub-catchment scale to identify and address NRM issues.

1. Use a topographic map with plastic overlays. Identify the boundaries where work is to focus.
2. Indicate each catchment issue with different colour marker on separate overlays. Show areas within the sub-catchment area where the problem areas are and describe the current situation each in detail regarding weeds, nature conservation and condition of riparian zones for example. Use the catchment issues as a guide. Pre-existing documentation should be utilised e.g. *Weeds of the Eastern Darling Downs Uplands*, and so on.
3. Identify the real causes of the problems.
4. Discuss options for management that will best address the causes, including existing management practices.
5. Establish benchmarks by describing and photographing current situation prior to any on-ground action being commenced.
6. Build up a picture of "hotspots" where several issues overlay each other.
7. "Hotspots" may help to prioritise the issues and identify potential projects within the sub-catchment. One particular area may have three issues needing management. Ameliorating one issue may indirectly assist managing another, for example replanting a riparian zone with local native species may improve water quality, decrease the opportunity for weeds and expand habitat area for nature conservation.
8. Provide indicative costs associated with the management options and identify related initiatives, potential partnerships and possible funding sources to implement works. The cost sharing arrangements should consider public versus private benefits.
9. Move from developing the action plan to implementing on-ground work.
10. Monitor progress against set benchmarks.

## Appendix G Landcare in the Condamine Catchment

Landcare has been active in south-west Queensland since the 1980's. It is a voluntary community program, driven by landholders and supported by all levels of government. Landcare encourages participation by all sectors of the local community with the goal of achieving sustainable land use.

Landcare groups use local knowledge to solve local problems and lead by example. As Landcare has developed, groups have started looking to progress action in their local district as well as on their own properties. Many Landcare groups look at both the property level and at their local area, including sub-catchment areas. There are approximately 60 landcare and sub-catchment action planning groups across the Condamine catchment.

### *Condamine Headwaters Landcare Group*

#### On-ground works and projects

- Implementing Catchment Strategies into On-ground Action (project officer employment)
- Glengallan Creek Riparian Zone Rehabilitation Project
- To Preserve and Improve Land, Water and Vegetation Resources of the Head Catchment
- To Integrate Sustainable Land Management and Nature Conservation in the Kingsford's Ridge / Hermitage Catchment
- To Preserve and Improve Land Resources and Management of the Elphinstone Railway Bridge Catchment.
- Restoring the Balance Between Production and Sustainability in the Licking Holes Catchment
- Restoring Stability and Sustainability to the Freestone Catchment
- Thanes Creek and Byron's Gully Mother of Millions Eradication
- Agroforestry trials have been set up on several properties in the area and there is further interest in establishing new plots

#### Sub-catchment action plans

Sub-catchment action plans in the Condamine Headwaters are located in the following areas:

##### *Freestone Creek*

The Freestone Creek catchment is located north-east of Warwick and is centred on the locality of Freestone. There are approximately 30 local landholders involved in this project which aims to address soil erosion, salinity, stock access to riparian zones, pasture improvement, weed control, and to establish areas of native vegetation. The local school has been involved in propagating trees for planting along the major roads in the area and the project aims to continue the school's involvement in Landcare issues in the area.

##### *Elphinstone Railway Bridge catchment*

The Elphinstone Bridge sub-catchment covers an area of approximately 2754 hectares and consists of 20 individual landholdings. Many problems within this catchment arise from the coordination of overland flow, whereby receiving properties downslope experience a variety of problems associated with water movement. Key issues being addressed are: gully and waterway erosion, erosion on contoured and uncontoured land, salinity, soil erosion, pasture decline, machinery conversion, weeds (lippia), roadway and railway problems, stock shade and education and awareness.

##### *The Head*

The Head catchment is located 13 km north-east of Killarney. Landholders within this catchment are addressing a variety of land management and conservation issues ranging from steep slope erosion, revegetation, watercourse protection, weed control and nature conservation.

### *The Kingsford Ridge – Hermitage*

The Kingsford Ridge – Hermitage catchment is located 6km east of Warwick. The project group is tackling a variety of issues including soil erosion from water and wind, nature conservation, weed control, riparian zone restoration and education and awareness.

### *Licking Holes Catchment*

The Licking Holes catchment covers an area of approximately 2800 ha and is made up of properties varying diversely in size and land use. The catchment is located 3.5km northeast of Allora. The group is tackling problems associated with soil erosion from water and wind, nature conservation, salinity control, weed control and elimination and promotion of activities through an education and awareness program.

### *Central Downs Landcare Group*

Central Downs Landcare comprises four Landcare Groups:

- Pittsworth Landcare Group
- Cambooya Landcare Group
- Clifton Landcare Group
- Millmerran Landcare Group

Landholder and community participation in activities of the Central Downs Landcare Group are strong, with approximately 660 active members taking part.

### Sub-catchment action plans

#### *Linthorpe Catchment Group*

Key issues being addressed by the Linthorpe Valley project include soil erosion, silt deposition, concentration of flood flows, gully erosion, declining soil fertility and structure, minimum tillage, vegetation management, soil salinity, and weed control

#### *Ashall Creek Group*

The Ashall Creek project area is located upstream of the Oakey-Cecil Plains railway line and comprises 6430 hectares of upland and about 1000 hectares of plain country. Major issues addressed by the project include land degradation, nature conservation and social issues.

#### *Rocky Creek Action Plan*

The Rocky Creek project area is located on the Condamine floodplain, west of Pittsworth. The key issue is soil erosion which has resulted from gulying effects of water flows from the upland areas to the floodplain. Measures such as strip cropping, fence removal and pasture establishment/regeneration are being undertaken, as well as education and awareness activities regarding management of water flows within the Rocky Creek landscape.

#### *Felton Valley Landholder Group*

Key issues being addressed by the Felton Landholder Group include soil erosion, weed management, feral animal control, groundwater quality/quantity, salinity, riparian zone/riverine health, fish habitat, and nature conservation.

#### *Back Creek Catchment Group*

Key issues identified are soil condition, siltation, water quality and quantity, riparian zone management, remnant vegetation, nature conservation, woody and environmental weeds, aquatic habitat, feral animals and education and awareness.

#### *Ryeford Catchment Group*

Key issues being addressed by the Ryeford Catchment Group include nature conservation (flora and fauna information, vegetation management), soil/gully erosion, soil salinity, overland flow coordination, siltation, stream bank erosion, native vegetation in riparian zones, weed management, integrated contour systems, declining soil fertility and structure, and minimum tillage practices.

### *Spring Creek Catchment Group*

The Spring Creek catchment area is located south-south west of the township of Clifton. The project area covers approximately 4900 hectares comprising 2150 hectares of floodplain, 1960 hectares of upland cultivation and grasslands, plus 750 hectares of remnant vegetation. Major issues are erosion/siltation, weeds, loss of vegetation/salinity, and soil structure/nutrient decline.

### *Ned's Gully Catchment Group*

Key issues identified are soil condition, siltation, water quality and quantity, riparian zone management, wood and environmental weeds, aquatic habitat and education and awareness.

### *Bringally and Nicol Creeks*

Key issues are soil conservation, riparian zone management, chemical use, weeds and pest animals, vegetation management, nature conservation, salinity and education and awareness.

### *Hard Setting Soils Group (Rocky, Punch, Back & Grasstree Creeks)*

Soil condition, siltation, overland flows, water quality and quantity, riparian zone management, remnant vegetation, nature conservation, woody and environmental weeds, education and awareness.

## *North-Eastern Downs Landcare Group*

### Sub-catchment action plans

Sub-catchment action plans in the North Eastern Downs are located in the following areas:

#### *Aubigny Catchment*

Located about 20 kilometres west of Toowoomba. Priority issues are soil erosion on cultivated land, gully erosion on sloping country, woody/environmental weed control and management, pasture and vegetation decline and management and community education, communication and awareness of land management issues.

#### *South Myall Creek*

This project area covers approximately 80,000 hectares with the centre of the catchment being located 60 kilometres north-east of Dalby. The catchment has some 840 people pursuing a variety of farming activities. Priority issues include soil erosion, declining underground water supplies, poor surface water supplies, salinity, nutrient and chemical runoff, iron bacteria in water, farm viability, weed control and management, nature conservation and education and awareness.

#### *Yamsion/Rangemore*

Located at the foothills of the Bunya Mountains, the Yamsion/Rangemore project area covers some 18000 hectares, with a population of 130. Continual dry seasons and economic pressures were targeted as the major factors in the decline of natural pasture and increasing soil erosion. As pastures and soil structure decline, woody weed species invade the grazing land, resulting in increased soil erosion, disfigurement and production losses. This has resulted in the siltation of streams and rivers, contamination of water reserves, increased risk of flash flooding and creek erosion. The Yamsion/Rangemore group is addressing these priority issues.

#### *Gomaren/Doctors Creek*

Key issues include water quantity and quality, farm viability, loss of production and invasion of introduced plant species.

### *Lagoon Creek*

The Lagoon Creek is a non-permanent drainage system, rising in the hills about 25 kilometres north of Oakey. The priority issues of the catchment are soil erosion of cultivated land, eroded waterways, eroding creek banks, weeds, dryland salinity, fertility decline, farm viability, remnant vegetation and tree decline.

### *Wambo Shire Uplands*

Priority issues are woody weeds (lantana, mother of millions, tree pear, green cestrum, African boxthorn and black cypress), land-use and management (pasture decline, poor property layout, soil erosion, fertility decline, poor infiltration, and inappropriate farming/ grazing management practices), water quality and quantity (declining underground supplies, effluent potential from the Bunya mountains and lack of water sharing policy), vegetation management (regrowth, remnant vegetation, feral animals and nature conservation), economic sustainability (improved management skills, farm viability, access to training programs) and community education and awareness.

### *Brigalow Jimbour Floodplains Group*

Current membership includes 500 participating landholders and land managers.

Local committees within each sub-catchment area set priorities, direct activities and manage their own work-plans. As well as encouraging participation and allowing all stakeholders to share in ownership and commitment to the project, this structure has been very successful in addressing a key challenge for the project – the need to “stay local” within a large project area (300,000 hectares), as well as addressing the diversity of activity and landscapes within that area. On-going project monitoring and evaluation has shown that a major attraction to new group members has been BJFG’s reputation for delivering measurable benefits to participants. BJFG stands on its record as a “can-do group with a have-done reputation” and seeks to actively represent its members in the dynamic environment of sustainable farming practices and NRM.

### Catchment action plan

The BJFG Strategic Plan represents the views of people living within the project area regarding the future of the community and the management of natural resources. It has specific goals, objectives and detailed work plan to implement.

### *Objectives*

- To implement Community Developed Integrated Catchment Action Plans.
- To Improve Economic & Environmental Sustainability.
- To Encourage Greater Cooperation Within And Across Communities.
- To Improve Land And Business Management Skills.
- To Improve Planning And Development Skills Of The Rural Community.
- To Promote Latest High Technology Farming Practices & Business Management Tools.
- To Continually Improve Weed Management.
- To Promote Farming As A Positive Career Path.
- To Access Funding To Support Prioritised On Ground Works In Line With Action Plans.
- To Improve Water Quality.
- To Ensure Minimum Diversion Of Overland Water Flows.
- To Continually Improve Vegetation Management.
- To Access Funding To Support Nature Conservation And Habitat Protection.
- To Promote Self Directed Information Seekers.
- To Improve Ecosystem Management For Stream & Riparian Zones.
- To Empower The Community To Enhance Integrated Action Planning.

Issue	Goals	Actions
Land Use and Management	<ul style="list-style-type: none"> <li>▪ To implement coordinated land management plans to address degradation and improve economic sustainability.</li> <li>▪ To improve the balance between economic viability, community development and environmental use of natural resources within the sub-catchment.</li> </ul>	<ul style="list-style-type: none"> <li>- Facilitate the development of integrated community catchment plans.</li> <li>- Fine tune integrated run off management on Brigalow Floodplains working closely with Chinchilla &amp; Wambo Shires &amp; environmental/technical extension staff &amp; farmers.</li> <li>- Implement community developed run off management plans for the Jimbour Floodplains which promote equitable sharing of overland flows.</li> <li>- Implement catchment action plans in the uplands &amp; river floodplains.</li> <li>- Access funding for cost sharing of priority on-ground works in line with plans.</li> <li>- Promote recent advances in sustainable farming practices &amp; business management tools.</li> <li>- Provide information on best management practices to prevent salinity outbreaks &amp; assist with tree planting programs in affected areas.</li> </ul>
Economic Sustainability	<ul style="list-style-type: none"> <li>▪ To create opportunities for greater cooperation between farmers which will enhance economic viability in the rural community.</li> </ul>	<ul style="list-style-type: none"> <li>- Improve the planning &amp; development skills of the rural community by linking to the South Region Future Profit PMP workshop series.</li> <li>- Encourage greater cooperation within the community to promote economic sustainability by better utilisation of machinery, human &amp; natural resources.</li> <li>- Accelerate the adoption of industry "best practices" by linking industry to the established BJFG networks.</li> <li>- Actively pursue areas for cooperation &amp; marketing/purchasing with the aim to improve farm viability.</li> <li>- Encourage the adoption of R &amp; D outcomes to improve farming systems.</li> </ul>
Communication, Education & Awareness	<ul style="list-style-type: none"> <li>▪ To facilitate a process for improving management skills which enhance the opportunity for achieving the vision of this project.</li> <li>▪ To provide an information process which enhances high levels of community understanding and knowledge of integrated catchment management.</li> </ul>	<ul style="list-style-type: none"> <li>- Continue quarterly newsletters, which provide technical information and allow community people to pass on their knowledge and experience.</li> <li>- Ensure the local community is actively involved in the development of all strategies &amp; action plans within their resource area.</li> <li>- Encourage active participation of schools &amp; the wider community.</li> <li>- Ensure the effective use of media is maximised.</li> <li>- Develop &amp; present information that reflect the positive &amp; challenging view of farming &amp; promotes farming as a positive career path.</li> </ul>
Riparian Zone Management	<ul style="list-style-type: none"> <li>▪ To improve ecological values of stream and riparian zones.</li> <li>▪ To investigate &amp; develop effective management techniques to rehabilitate stream &amp; riparian zone habitat's.</li> </ul>	<ul style="list-style-type: none"> <li>- Improve habitat management by developing best management practices at the farm level involving the community.</li> <li>- Set up best management demonstration site on 3 meanders along the Condamine River &amp; monitor cost effectiveness.</li> <li>- Access funding to encourage &amp; support implementation of best management practices within the riparian zone.</li> <li>- Document local experiences &amp; best management practices as case studies.</li> </ul>

Issue	Goals	Actions
Water Quality & Quantity	<ul style="list-style-type: none"> <li>▪ To improve the quality of waters flowing into the Condamine River and the Murray Darling System.</li> <li>▪ To improve water efficiency and the ecologically sustainable use of this resource throughout the sub-catchment</li> </ul>	<ul style="list-style-type: none"> <li>- Ensure overland flows, move across floodplains with minimum diversion &amp; interference.</li> <li>- Increase surface cover &amp; improve infiltration to minimise erosion.</li> <li>- Liaise &amp; cooperate with Condamine Balonne Water Committee re water testing &amp; monitoring.</li> <li>- Initiate an awareness program highlighting guidelines in relation to chemical application.</li> <li>- Investigate the opportunity to develop &amp; implement a local ground water management plan.</li> <li>- Cooperate with industry to establish objective benchmarks for efficient water use.</li> </ul>
Nature Conservation	<ul style="list-style-type: none"> <li>▪ To improve biodiversity by balancing nature conservation management with productive systems.</li> <li>▪ To improve habitat management and integrated management of vegetation.</li> </ul>	<ul style="list-style-type: none"> <li>- Encourage voluntary community participation in determining areas with high nature conservation value &amp; develop an inventory of such areas within the riverine, floodplains &amp; uplands environments.</li> <li>- Develop local best practice, strategies &amp; guidelines for the management of remnant vegetation.</li> <li>- Commence a process to develop a vegetation management plan relevant to different enterprises across land tenures within the riverine, floodplains &amp; uplands environments &amp; incorporate these plans into catchment planning activities.</li> <li>- Facilitate a process of cooperation between farmers, conservation groups &amp; agencies to develop a better understanding of the values of nature conservation in productive systems.</li> <li>- Access funding to implement vegetation management plans &amp; link areas of remnant vegetation or habitat significance.</li> <li>- Encourage tree planting's on farms which have the potential to provide income diversification as well as environmental advantages.</li> </ul>
Weeds	<ul style="list-style-type: none"> <li>▪ To manage weeds in a strategic manner within the sub-catchment.</li> <li>▪ To minimise the impact of weeds on the natural ecosystem.</li> </ul>	<ul style="list-style-type: none"> <li>- Develop a detailed inventory of potential &amp; emerging problem species by a process of community consultation.</li> <li>- Investigate &amp; develop best management control practices.</li> <li>- Develop an extensive integrated weed management plan for riverine, floodplains &amp; uplands.</li> <li>- Initiate an education &amp; awareness program at the farm level highlighting strategies &amp; overall control plans.</li> <li>- Access funding to encourage &amp; support on ground works.</li> </ul>

Issue	Goals	Actions
Community Development	<ul style="list-style-type: none"> <li>▪ To encourage greater cooperation &amp; attitudes of “working together” within the community to improve farm efficiency &amp; reduce the demands on the natural resources.</li> <li>▪ Adopt approaches to encourage participation &amp; sharing &amp; ensure group development is ongoing.</li> <li>▪ To improve community spirit &amp; positive community development.</li> </ul>	<ul style="list-style-type: none"> <li>- Adopt processes to maximise participation &amp; involvement of the community in BJFG activities.</li> <li>- Plan activities to increase the level of communication within the farm unit &amp; the farming communities &amp; promote community spirit.</li> <li>- Set in place a process that empowers the community in partnership with other stakeholders to share the responsibility of managing natural resources in the context of social fairness &amp; equity.</li> <li>- Adopt processes &amp; approaches to ensure maintenance of existing groups &amp; further group development is ongoing and self-directed.</li> </ul>
Evaluation	<ul style="list-style-type: none"> <li>▪ To monitor &amp; evaluate the performance &amp; achievements of the project on an annual basis.</li> <li>▪ To review the strategic plan every three years.</li> </ul>	<ul style="list-style-type: none"> <li>- Determine the level of participation of community members in the project activities.</li> <li>- Monitor project outcomes &amp; the long-term effects &amp; impacts on natural resources within the sub-catchments.</li> <li>- Evaluate the project’s impact on the level of change in knowledge, attitudes, skills &amp; aspirations &amp; subsequent changes in on-farm practices and community cohesion.</li> <li>- Review the strategic plan every three years</li> </ul>

## *Chinchilla Landcare Group*

### Sub-catchment action plans

#### *Kogan, Wambo, Braemar catchments*

Key issues identified and addressed include erosion, pasture decline and vegetation management. The Kogan sub-catchment group covers an area of in excess of 19,000 hectares and contains the headwaters of the Kogan, Braemar and Wambo Creeks. On ground action in the area has included the fencing of conservation and cultural heritage sites, implementation of structures to reduce erosion threats, remedial work on erosion sites, and the establishment of permanent species on old cultivation land.

#### *Hopeland*

The Hopeland group covers an area of approximately 4,000 acres with all the properties adjacent to the Condamine River. Key issues identified are gully erosion (paddock and riparian zone), sheet erosion, declining soil fertility/structure, pasture decline, sucker control, weeds (Bathurst burr, noogoora burr, stromonium, lippia, turnip, roly poly, mexican poppy, harisia cactus), riparian zone management, water quality (chemical contamination and siltation), nature conservation, communication education and awareness.

#### *Darr Creek and Burri Burri Creek*

Key issues identified include road drainage, regrowth management, weeds (mother of millions, tree pear, burrs and stromonium), wind and water erosion, fertility decline, pasture decline, Condamine couch, feral animals, creek siltation. Extensive pasture trials conducted in the area have been highly beneficial to the establishment of persistent pasture mixes that address soil fertility and structure issues.

#### *Riverine group*

Key issues include erosion, weeds (cultivation weeds, Mexican poppy, castor oil plant, turnip, noogoora burr, Bathurst burr, lippia), poor water quality, salinity, pest animals and hard setting soils.

#### *North Moonie*

Key issues are suckers, gully erosion, soil erosion, soil structure decline, weeds (limebush, mother of millions, tree pear) and regrowth management.

#### *Red Hill*

Key issues faced by the Red Hill sub-catchment group include declining soil structure and fertility, cultivation weeds and erosion as a result of past farming practices and the highly sodic soil characteristics of the area. The group has recently been successful in gaining funding to implement on-ground works to remedy these issues. A large part of their project will focus on the protective measures for, and linkages between, remnant vegetation areas.

#### *Greenswamp*

The Greenswamp sub-catchment group is one of Chinchilla's oldest and most active sub-catchment groups. The area comprises a mix of grazing, dairy and cultivation enterprises bordering the Condamine River downstream of the Chinchilla Weir. Issues that are faced by the group include weed control (lippia, parthenium, mother of millions, woody weeds and several common cultivation weeds) gully and soil erosion and hard setting soil characteristics. Past successful activities accomplished by the group include the establishment of permanent pasture species (mixed grass and legume) after extensive trials, cooperative control of overland flow, and remedial erosion-control activities.

## Appendix H Legislation, Policies and Plans Influencing NRM

### Commonwealth

#### *Environment Protection and Biodiversity Conservation Act 1999*

The objects of this Act are:

- a) to provide for the protection of the environment, especially those aspects of the environment that are matters of national environmental significance; and
- b) to promote ecologically sustainable development through the conservation and ecologically sustainable use of natural resources; and
- c) to promote the conservation of biodiversity; and
- d) to promote a cooperative approach to the protection and management of the environment involving government, the community, land-holders and indigenous peoples; and
- e) to assist in the cooperative implementation of Australia's international environmental responsibilities; and
- f) to recognise the role of indigenous people in the conservation and ecologically sustainable use of Australia's biodiversity; and
- g) to promote the use of indigenous peoples' knowledge of biodiversity with involvement of, and in cooperation with, the owners of the knowledge.

#### *National Strategy for Ecologically Sustainable Development*

The Guiding Principles are:

- Decision making processes should effectively integrate both long and short-term economic, environmental, social and equity considerations.
- Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.
- The global dimensions of environmental impacts of actions and policies should be recognised and considered.
- The need to develop a strong, growing and diversified economy which can enhance the capacity for environmental protection should be recognised.
- Cost effective and flexible policy instruments should be adopted, such as improved valuation, pricing and incentive mechanisms.
- Decisions and actions should provide for broad community involvement on issues which affect them.

#### *National Strategy for Conservation of Australia's Biological Diversity*

Guiding principles:

- Biological diversity is best conserved in-situ.
- Although all levels of government have clear responsibility, the cooperation of conservation groups, resource users, indigenous people's, and the community in general is critical to the conservation of biological diversity.
- It is vital to anticipate, prevent and attack at source the causes of significant reduction or loss of biological diversity.
- Processes for and decisions about the allocation and use of Australia's resources should be efficient, equitable and transparent.
- Lack of full knowledge should not be an excuse for postponing action to conserve biological diversity.
- The conservation of Australia's biological diversity is affected by international activities and requires actions extending beyond Australia's national jurisdiction.
- Australians operating beyond our national jurisdiction should respect the principles of conservation and ecologically sustainable use of biological diversity and act in accordance with any relevant national or international laws.
- Central to the conservation of Australia's biological diversity is the establishment of a comprehensive, representative and adequate system of ecologically viable

protected areas integrated with the sympathetic management of all other areas, including agricultural and other resource production systems.

- The close, traditional association of Australia's indigenous peoples with components of biological diversity should be recognised, as should the desirability of sharing equitably benefits arising from the innovative use of traditional knowledge of biological diversity.

## State

### *Water Act (2000)*

The Water Act (2000) has many explicit purposes. The purpose of most relevance to this strategic plan is:

- to advance sustainable management and efficient use of water and other resources by establishing a system for the planning, allocation and use of water.

### *Environmental Protection (Waste Management) Policy 2000*

The purpose of this Policy to achieve the objective of the Act in relation to waste management.

### *Environmental Protection (Waste Management) Regulation 2000*

The object of this Regulation is to protect the environment by – minimising the impact of waste of the environment, including in particular, the impact of waste so far as it affects human health; and, establishing an integrated framework for minimising and managing waste under the principles of ecologically sustainable development.

### *Vegetation Management Act (1999)*

The purposes of this Act are to regulate the clearing of vegetation on freehold land to-

- a) Preserve the following-
  - i) Remnant endangered regional ecosystems;
  - ii) Vegetation in areas of high nature conservation value and areas vulnerable to land degradation; and
- b) Ensure that the clearing does not cause land degradation; and
- c) Maintain or increase biodiversity; and
- d) Maintain ecological processes; and
- e) Allow for ecologically sustainable land use.

### *Environmental Protection (Water) Policy 1997*

The purpose of this Policy is to achieve the object of the Act in relation to Queensland waters.

### *Integrated Planning Act (1997)*

The purpose of this Act is to seek to achieve ecological sustainability by –

- a) Coordinating and integrating planning at the local, regional and State levels; and
- b) Managing the process by which development occurs; and
- c) Managing the effects of development on the environment.

### *Environmental Protection Act 1994*

The object of this Act is to protect Queensland's environment while allowing for development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes upon which life depends ("ecologically sustainable development")

## Regional

Examples of regional strategies and plans include:

- Natural Resources Management Strategy for the Queensland Murray-Darling Basin, 1998
- Regional Landuse Strategy, 1996 prepared for the Eastern Downs Regional Organisation of Councils
- Water Allocation and Management Plan for the Condamine-Balonne (DRAFT)
- Water Quality Management Plan for the Condamine-Balonne (DRAFT)
- Water Quality Objectives for the Condamine-Balonne (DRAFT)

## Local

Examples of local strategies and plans include:

- Local Area Plans developed by Councils detailing areas of concern.
- Local Government Planning Schemes
- Sub-catchment action plans (refer to Appendix G)

## Appendix J Rare and Threatened Species

### Plants

Botanical Name	Classification	Common Name
<i>Acacia chinchillensis</i>	vulnerable	Chinchilla wattle
<i>Acacia handonis</i>	vulnerable	Hando's wattle
<i>Cadellia pentastylis</i>	vulnerable	ooline
<i>Eucalyptus argophloia</i>	vulnerable	Chinchilla white gum
<i>Eucalyptus curtisii</i>	rare	Plunkett mallee
<i>Eucalyptus scoparia</i>	vulnerable	Wallangarra white gum
<i>Picris evae</i>	vulnerable	
<i>Stemmacantha australis</i>	vulnerable	
<i>Thesium australe</i>	vulnerable	toadflax

### Animals

Species	Habitat
black necked stork	Temporary and permanent wetlands. Ranges widely in search of suitable feeding areas.
paradise parrot	Grassy eucalypt woodlands, scrubby grasslands, ironbark low woodlands.
Alberts lyrebird	Dense subtropical rainforests and scrub. Ranges behind Warwick only.
glossy black cockatoo	In forests, woodlands, and timbered watercourses. Nest in layer of woodchips in large high tree hollows. Open forest with bulloak in the east of catchment.
powerful owl	Pairs occupy large permanent home range in mountain forests and gullies. Sparser hilly woodlands, tall open forest on range east of catchment only.
black breasted button quail	Leaf litter in dry forests, vine thickets, scrubby woodlands of eucalypts, sheoaks, bottlebrushes, brush box, brigalow, and lantana thickets.
regent honeyeater	Dry open forests, woodlands, especially red ironbark, yellow box, yellow gum, mistletoe or river oaks. Eucalypt woodland - granite hills or alluvial plains.
bull oak jewel butterfly	Remnant roadside bulloak ( <i>Casuarina leuhmannii</i> ) trees.
spotted-tailed quoll	Open forests in eastern ranges.
Hastings River mouse	Riparian areas with bracken understorey with open forest on ranges in south east of Catchment.
long legged worm skink	Eucalypt forests in eastern ranges or eucalypt woodlands on alluvial plains.
freckled duck	Large well vegetated swamps, moves to open lakes when dry.
Dunmall's snake	Open forests and woodlands, particularly brigalow on cracking black clay and clay loam soils. Either rare or very secretive, with very few having been recorded.
Fleay's barred frog	Recorded in rainforest streams along eastern escarpment, including Cunningham Gap area.

## Appendix K Bibliography

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## Appendix L Glossary of Terms

### Action Plans

A set plan which overcomes a certain issue or problem in the catchment by stating specific policies and work programs to be undertaken by a nominated individual or organization.

### Alluvial

Material created or deposited by water

### Aquifer

A subterranean water bearing reservoir capable of yielding enough water to satisfy a particular demand.

### Biodiversity

The variety of all life forms: the different plants, animals and micro-organism, the genes they contain and the ecosystems they form. The term is often considered at three levels: genetic diversity, species diversity and ecosystem diversity.

### Catchment

Region or drainage basin which collects all water within it and directs it into a river, stream or watercourse.

### Ecologically sustainable development

Development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends.

### Ecosystem

A dynamic complex of plant, animal and microorganism communities, including dead organic matter, and inorganic environment, all interacting as an ecological unit.

### Efficient

Effective in the use of energy and other resources to ensure that net benefits to society are maximised from the use of limited resources. The proper assessment of efficiency includes all costs of using a resource – economic, environmental, social and off-site, and including wastes and other by-products.

### Equitable

Fair, impartial and just. In relation to resources use and management this refers to fairness of access to resources and of sharing the costs associated with using them.

### Exotic

Any plant or animal not indigenous to a region.

### Extension

A term commonly used in government departments, it means to provide official support to community groups. It involved a range of techniques, including advice, access to departmental expertise, workshops, training and education, information and a range of other support materials.

### Floodplain

An area of land subject to inundation from a watercourse during a flood event.

### Integrity

In environmental terms, the state of being whole, entire or undiminished; of sound, unimpaired or perfect condition.

**Pest animal**

An animal, usually exotic, which threatens crops/stock/native species, or requires some form of control measure.

**Productivity**

Measure of fertility of the soil by way of biomass produced.

**Remnant Vegetation**

Relatively small pockets of vegetation which remain after land-use practices and which represent the original plant community.

**Resource condition and trend**

A term commonly used in government departments, it refers to observing and measuring the state of health of the environment, using a range of indicators, and, by comparing current findings and earlier data, calculating whether the health of the environment under consideration is declining, static or improving. Environmental indicators may include, for example, degree of contamination, acidity levels, degree of natural vegetation cover, number and density of flora and fauna species and their range, and the complexity of ecosystems or parts of ecosystems.

**Riparian Vegetation**

Vegetation of streams and riverbanks.

**Riparian Zone**

The interface between the terrestrial and aquatic ecosystems. The spatial extent of the interface is defined as that area between the low flow level of the watercourse and the highest point of transition between the channel and the floodplain, that area in which the vegetation influences the instream ecology.

**Salinity**

Salting of the land caused by sea-water intrusion and upland seepage.

**Sedimentation**

The process of deposition of weathered or eroded materials in river systems.

**Sustainability**

Used interchangeably with the term 'ecologically sustainable development'.

**Weed**

A plant out of place.

## Appendix M Acronyms

ABS	Australian Bureau of Statistics
AFFA	Department of Agriculture, Fisheries and Forestry Australia
BJFG	Brigalow-Jimbour Floodplain Group
BMP	Best Management Practices
CBWC	Condamine-Balonne Water Committee
CCMA	Condamine Catchment Management Association Inc.
CCSP	Condamine Catchment Strategic Plan
CFI	Conservation Farmers Inc
CRBIA	Condamine River Basin Irrigator's Association
CRC	Cooperative Research Centre
CSIRO	Commonwealth Scientific & Industrial Research Organisation
DDLGA	Darling Downs Local Government Association
DDV2000	Darling Downs Vision 2000
DLGP	Department of Local Government and Planning
DNRM	Department of Natural Resources and Mines
DPI	Department of Primary Industries
EDROC	Eastern Downs Regional Organisation of Councils
EPA	Environmental Protection Agency
ESD	Ecologically Sustainable Development
GAQ	Greening Australia Queensland
GIS	Geographic Information System
HOPE	Householders Options to Protect the Environment
ICM	Integrated Catchment Management
LGA	Local Government Authority
LWA	Land and Water Australia
MDBC	Murray Darling Basin Commission
MDBMC	Murray-Darling Basin Ministerial Council
ML	Megalitres
MRD	Main Roads Department
NAPSWQ	National Action Plan for Salinity and Water Quality
NHT	Natural Heritage Trust
NRM	Natural Resource Management
PMP	Property Management Planning
QMDB	Queensland Murray Darling Basin
QMDC	Queensland Murray Darling Committee Inc
QRail	Queensland Rail
RAP	Regional Assessment Panel
RIT	River Improvement Trust
RLPB	Rural Lands Protection Board
ROP	Resource Operations Plan
RSC	Resource Sciences Centre
SGAP	Society for Growing Australian Plants
SIQREDO	Southern Inland Queensland Regional Economic Development Organisation
TAG	Technical Advisory Group
TREC	Toowoomba & Region Environment Council
TSN	Threatened Species Network
UCFPP	Upper Condamine Flood Plain Project
UQ	University of Queensland
USQ	University of Southern Queensland
WAMP	Water Allocation & Management Plan