

## 2.7. LAND DEGRADATION

There are many forms of land degradation, some are obvious (eg weeds, accelerated erosion), and some are not (eg soil compaction, sheet erosion, fertility decline, soil salinity). The causes of land degradation can include poor road design and construction; inappropriate fire regimes; inappropriate land management; poor groundwater management; and feral animal impacts. Many causes stem from poor environmental awareness and practices. The most basic cause of land degradation is the mismatch between land activities and land suitability.

Land resources are made of discrete environmental units. Land suitability and management requirements vary across these units. Human boundaries do not always reflect local land suitability realities and often impose inappropriately uniform practices over land units with differing needs. This is the heart of many land degradation problems.

While much of the Mitchell catchment system is in pretty good shape, land degradation continues to occur. Roadside erosion due to drainage problems and past management of borrow areas is common. Many soils found in the catchment are prone to erosion problems. Soils formed on a geologic base of alluvium and sediments, sodic duplex soils, and river frontages form the greatest management problems. Typically river frontage soils easily turn to bulldust. The river frontages are exposed to the double impact of grazing and the erosive power of water flow, especially the confluence zone where the main tributaries join the Mitchell.

Some caution must be taken in assessing soil erosion within the Mitchell River Watershed. Some areas show signs of massive erosion occurring on a geological time scale. Accelerated erosion is also a common sight. Care must be taken to recognise them both. Unfortunately when natural events such as flooding occur, erosion from this may be aggravated by management practices such as over grazing or hot fires leaving no ground cover.

Many in the grazing industry complain of woody weed invasions and the general thickening of the vegetation. Woody weeds provide a good visual example of the more subtle forms of land degradation. Detection can be difficult over time except with the help of some form of monitoring program. Soil compaction and nutrient decline provide similar problems in production systems.

Modern technology is constantly improving our ability to understand the land around us. Aerial photography and satellite imagery now allow us to look at land resources in ways never before possible.

Geographic Information Systems (GIS) can help us bring together a wide array of land resources information. We now are able to define and work in tandem with environmental units as never before. Applying these emerging technologies will require a major learning process for land managers, but the rewards should be worth it in improved land management capabilities.

A group of cattle producers in the Mitchell and Coastal Plains have recently come together to form a Local Consensus Data Group (LCD). In a process facilitated by the DPI's Beef Production Unit, producers working that land describe local land types and their management. This process leads to examination of best management practices, and ultimately to producers developing property management plans. It is a fine example of cooperative management in action to avoid land degradation.



Photo courtesy of Mitchell River Water and Environmental Quality Project

**Figure 13** *Current improvements in irrigation and land management practices will see a decline in this type of water quality degradation*



**Figure 14** *This training workshop run by the MRWVG educated council workers on ways of preventing excessive land degradation during roadside works*

## **Goal:**

*To arrest continuing land degradation  
through the improvement of landuse planning  
and management practices*

## **Objectives:**

- To improve community understanding of land degradation processes
- Initiate best management practices in catchment resource management
- Monitor catchment health throughout the watershed
- Improve the information base for decision making in land management and planning
- Improve land management and planning capabilities of land managers

## **Strategies:**

### *Education*

**LD1.** Prepare educational material highlighting the causes and consequences of land degradation

### *Information and Communication*

**LD2.** Identify and promote best management practices in catchment resource management

### *Improving Resource Management*

**LD3.** Develop simple long term condition monitoring programs throughout the watershed

**LD4.** Develop the ability to make land management planning decisions based on assessment of land suitability and capability

### *Adopting a Cooperative Approach*

**LD5.** Encourage and support land managers in the watershed to develop their land management capabilities

## **Outcomes:**

Achievement of these strategies will provide the following outcomes:

- Informed decision making for land management and planning
- Best management practices adopted by land manager and within landuse planning processes
- A community aware of land degradation problems, causes and solutions.

**Strategy LD1.**

Prepare and extend educational material highlighting the causes and consequences of land degradation

Actions	Stakeholders	Performance Indicators	Priority	Cross Reference to
Assess and compile current educational material	MRWVG, DPI, DNR		★	
Prepare displays and present them at field days	MRWVG	2 field days/year	★★	
Prepare media stories for publishing/presenting	MRWVG, DPI, DNR	1 radio interview/yr; 4 newspaper/year; quarterly newsletter	★	
Encourage Mitchell River based education activities in schools and TAFE	MRWVG, EQ, TAFE QLD	1 school/year	★★★	CH1
Involve land managers in workshops on best management practices and environmental technology	MRWVG, DPI, DNR	1per year	★★	

**Strategy LD2.**

Identify and promote best management practices in catchment resource management

Actions	Stakeholders	Performance Indicators	Priority	Cross Reference to
Hold field days on properties where best land management is practised	MRWVG, Landholders	1 fieldday/yr	★★	WE4 FA1 AG LD5
Prepare media articles for publishing in local newspapers	MRWVG	2/year	★	
Organise a bus tour of properties where best land management is practiced	MRWVG, DPI, DNR, EPA, LCG, other stakeholders	2/year	★★	

**Strategy LD3.**

Develop simple long-term condition monitoring programs throughout the watershed

Actions	Stakeholders	Performance Indicators	Priority	Cross Reference to
Identify land environmental units for photo points	DNR, EPA	20 points- 4 photos /year	★	AG3
Identify pasture sampling sites	Graziers, DPI		★	FM3 WE3
Investigate available satellite data information and compare bi-annually	Remote Sensing, MRWVG	2/year	★★★	
Lobby for all new developments to require long term monitoring programs	Lgov, MRWVG		★★	

**Strategy LD4.**

Develop the ability to make land management decisions based on assessment of land suitability and capability

Actions	Stakeholders	Performance Indicators	Priority	Cross Reference to
Prepare extension information for landholders on assessment of land suitability and capability	DNR, EPA		★	AG4
Encourage University students to research land suitability and capability	MRWVG, Universities	1 research project /2years	★★	
Investigate funding possibilities for land management projects	NHT, State Govt, Private Sector		★★	

**Priorities Achieved By:**

★ 1 - 2 years

★★ 2 - 3 years

★★★ 3 - 5 years

**Strategy LD5.**

Encourage and support land managers in the watershed to develop their land management capabilities

<b>Actions</b>	<b>Stakeholders</b>	<b>Performance Indicators</b>	<b>Priority</b>	<b>Cross Reference to</b>
Hold workshops on properties where best land management is practised	MRWMG, DNR, EPA, landholders	1/year	★	AG2 GM3 LD2
Investigate financial support and tax incentives for landholders to develop their land management techniques	MRWMG, Futureprofit		★★	AG8

**Priorities Achieved By:**

★ 1 - 2 years

★★ 2 - 3 years

★★★ 3 - 5 years