SOUTHERN NEW ENGLAND
STATE OF THE ENVIRONMENT REPORT
2008-2009

Incorporating the local government areas of
Armidale Dumaresq, Guyra, Uralla and Walcha

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICIES

A Climate Change Action Plan – Climate Change Risk Adaptation Table
B Climate Consensus Project Recommendations
C Drought Affected Areas of NSW During 2008-2009
D Armidale Dumaresq Mineral Resource Audit Map
E Guyra Mineral Resource Audit Map
F Uralla Mineral Resource Audit Map
G Walcha Mineral Resource Audit Map
H Southern New England Landcare Activities for 2008-2009
I Summary of Climate Change Impacts
J New England Tableland Bioregion Locality Map
K Threatened Species Recorded in the Southern New England Region
L Citizens Wildlife Corridors Armidale Inc. – Final Report (2009) – NSW Environmental Trust Grant
M Uralla local recommendations from Climate Consensus Project

EXECUTIVE SUMMARY

The 2008-2009 Southern New England State of the Environment Report has been prepared in accordance with reporting requirements of the *Local Government Act 1993* for the four local government areas of Armidale Dumaresq, Guyra, Uralla and Walcha.

The 2008-2009 Southern New England State of the Environment Report follows a similar format to the comprehensive Southern New England Tablelands Region State of the Environment Report completed in 2003-2004 and subsequent supplementary reports prepared for the New England Strategic Alliance of Councils. This Report provides up-dated data for environmental indicators identified for the eight key environmental sectors within the natural and built environment for the 2008-2009 reporting period, and examines trends in this data from the previous reporting period and since the 2003-2004 comprehensive State of the Environment Report.

A brief summary of the eight environmental sectors discussed in the Report is outlined below:

Land

Work has continued during 2008-2009 on the Draft New England Development Strategy which will guide future development in the region for the next 25 years and provide a planning context for the preparation of a single local environmental plan. In August 2008 the Draft Strategy was endorsed by the NSW Department of Planning, and following public exhibition, was adopted by all four Councils during April or May of 2009.

During 2008-2009 the NSW Rural Fire Service endorsed up-dated bush fire prone land maps for each of the Councils and prepared a New England Bush Fire Risk Management Plan applying across the region. Catchment Management Authorities operating in the region and Southern New England Landcare continue to be active in land management and conservation projects across the region.

Air and Climate Change

During 2008-2009 the four Councils of the Southern New England Region were involved in various projects with a focus towards climate change and its potential impacts on the local environment and its people. These projects include the Local Adaptation Pathway Project, Climate Consensus Project and development of a New England Sustainability Strategy.

Although air quality complaints have generally declined across the region during 2008-2009, wood smoke in Armidale City continues to be the main air pollution issue in the Region. Armidale Dumaresq Council has implemented a number of measures to address wood smoke, including continued financial assistance for installation of alternative heating and monitoring of air quality using a portable DustTrak™ Aerosol Monitor.

Home owners across the region have also taken advantage of various government rebates during 2008-2009 to improve the environmental performance of their

dwellings, such as rebates for installation of insulation, solar hot water systems and solar photovoltaic systems, including the successful Solar New England Project.

Water

Monitoring of Dumaresq Creek by Armidale Council has shown a slight improvement in water quality at testing locations over the period since 2005, while monitoring of the Apsley River by Walcha Council has found water quality during the current reporting period to be relatively consistent with previous recordings. Blue-green algae in Malpas Dam has continued to be a problem during 2008-2009, however its impact on potable water supplies has been off-set by Armidale Dumaresq Council's new ozonation BAC facility at the Water Treatment Plant.

Average water consumption per connection has generally declined across the region during 2008-2009, with only a slight increase being experienced at Uralla.

Uralla Shire Council has continued with implementation of projects under its Uralla Sub-Catchment Management Project during 2008-2009, while all Councils in the Region have continued to work with Catchment Management Authorities and Landcare to implement on-ground works to improve the health of waterways.

Biodiversity

The number of threatened flora and fauna species recorded in the Southern New England Region has increased since reporting of numbers commenced in 2006-2007, and the Region now contains six (6) endangered ecological communities as listed under the *Threatened Species Conservation Act 1995*.

The collection of timber from road reserves and travelling stock routes has again been identified as a significant concern to biodiversity across the region, along with the threat of invasive noxious weeds.

On a positive note, during the 2008-2009 it was announcement that Armidale Dumaresq, Guyra Shire, Uralla Shire and Walcha Councils had been successful in obtaining a grant of $2 million from the NSW Environmental Trust for Urban Sustainability. This project, called HiCUB (previously known as Biodiversity in High Country) will occur over two and a half years and provide community education, monitoring and evaluation, technical studies and on-ground rehabilitation works across the Region.

Waste

All Councils are actively involved in the Northern Inland Regional Waste Group and have undertaken programs to encourage greater recycling and improve waste management efficiencies.

Since 2003-2004 recycling levels per capita have remained relatively stable across the region, with the exception of Uralla Shire Council which has seen distinct improvements in recycling levels since 2005-2006. Mixed results have been achieved in relation to the rate of domestic waste per capita since 2000-2001, with general improvements at Armidale and Walcha (i.e. low generation per capita) while slightly higher rates of domestic waste generation per capita have been reported in both Uralla and Guyra.

Work has continued on the planning phase of a new regional landfill during 2007-2008.

Noise

Barking dogs continued to be the major source of noise complaints across the Southern New England Region during 2008-2009, again contributing to 71% of all noise complaints received by Councils.

All Councils have maintained accurate records of noise complaints received during the reporting period and continue to respond to complains as necessary.

Aboriginal Heritage

During 2008-2009, the Aboriginal Heritage Office (North Sydney) prepared an Aboriginal Site Management Report and Aboriginal Potential Areas Report for Armidale Dumaresq Council. These are significant documents that outline strategies and recommendations for Council staff to ensure that Aboriginal heritage is properly considered during the planning stage of development, legislative responsibilities for Aboriginal heritage management, criteria for assessing Aboriginal heritage potential and to assist in identify and defining areas of potential Aboriginal archaeological heritage.

The NSW Department of Environment and Climate Change advised that during 2008-2009, 23 sites were added to their Aboriginal Heritage Information Management System (AHIMS) across the Southern New England Region.

Non-Aboriginal Heritage

All Councils continued to be involved in non-Aboriginal heritage projects during 2008-2009 including commencement of a community based heritage study in Uralla, continued preparation of a heritage study at Walcha, completion of a review of items identified in the former Dumaresq Shire Heritage Study by Armidale Dumaresq Council and implementation of recommendation .

All Councils have continued to provide advice to the community via their respective Heritage Advisors and continued operation of various museums across the Region.

SECTION 1 - INTRODUCTION

1.1 STATE OF THE ENVIRONMENT REPORTING – OVERVIEW

The NSW *Local Government Act 1993* requires all Councils to produce a State of Environment Report as part of their annual reporting requirements. Comprehensive reports must be prepared for the year ending after election of councillors for the area. Local Government elections were held in September 2008, and as such, the four Councils of Armidale Dumaresq, Guyra Shire, Uralla Shire and Walcha have agreed to prepare a regionally based comprehensive state of the environment report for 2008-2009.

State of the Environment reporting is intended to provide timely and accurate information on the condition of the local environment and an outline of activities and their resulting impacts on the environment of the region. The information contained in this State of the Environment Report should contribute to the management activities and decision making processes of Council across all sectors of activity, and enable planning to avoid or mitigate adverse impacts.

1.2 ECOLOGICALLY SUSTAINABLE DEVELOPMENT

The role of NSW local government in the implementation of ecologically sustainable development (ESD) principles has been formally recognised by incorporating the principles of ESD in the NSW *Local Government Act 1993* and by requiring councils to manage their regulatory and service functions in an ecologically sustainable manner (Department of Local Government, *Environmental Guidelines – State of Environment Reporting by Local Government* – December 1999).

Ecologically sustainable development means an approach to using, conserving and enhancing natural resources so that ecological processes, on which all life depends, are maintained, and the total quality of life, now and in the future, is improved (COAG, 1992).

State of the environment reporting is recognised as a key mechanism for identifying and evaluating sustainability issues for local government, assessing progress towards sustainability and informing the decision making process and management activities of Council.

The following State of the Environment Report includes data that examines the effectiveness of the Councils' environmental management strategies and allows the performance of those strategies to be reviewed to determine gaps in the planning, delivery and management of services.

1.3 REPORTING FRAMEWORK

1.3.1 Pressure – State – Response Model

The Southern New England State of the Environment Report adopts the pressure – state – response model consistent with Commonwealth, State and Territory reporting.

The pressure – state – response model is based on the concept of causality, i.e. human activities exert pressures on the environment which change its state, or condition. Society then responds to this change of state by developing and implementing policies and/or actions, which complete the cycle and influence the activities that exert pressure on the environment.

In the context of the Southern New England State of the Environment Report, the pressure – state – response model enables reporting on:

- the pressures that human activities place on the environment – positive or negative effects;
- the state or condition of the environment – identifying changes or trends in the environment, quantifying the impact of activities and the effectiveness of responses; and
- the response of councils, government agencies, business and the community to the pressures on, and state of, the environment.

It should be noted that the pressure – state – response model does have some shortcomings. The implied cycle of cause and effect is simplistic and often there is not clear evidence linking pressures with changes in environmental state. It is not always easy to categorise indicators, as they may reflect aspects of state, pressure or response, depending on the way the issue is approached. (Department of Local Government, *Environmental Guidelines – State of Environment Reporting by Local Government* – December 1999).

1.3.2 Environmental Themes

Section 428A(3) of the *Local Government Act 1993* requires State of the Environment Reports to:

(a) establish relevant environmental indicators for each environmental objective; and
(b) report on, and update trends in, each such environmental indicator; and
(c) identify all major environmental impacts (being events and activities that have a major impact on environmental objectives).

The 2008-2009 Southern New England State of the Environment Report examines data and trends for various environmental indicators based on the following broad environmental themes:

- land
- air
- water
- biodiversity
- waste

- noise
- aboriginal heritage
- non-aboriginal heritage

These environmental themes are consistent with those that have been reported in previous state of environment reports for the region and allow for comparison of information collected since the last Comprehensive State of the Environment Report in 2004.

1.3.3 Environmental Indicators

The Pressure-State-Response model involves the measurement of a number of environmental conditions (indicators) to provide a picture of the environment. The criteria adopted in choosing these indicators is as follows:

- relevance - usefulness for users
- reliability - level of completeness, consistency, and accuracy of data
- timeliness - availability of data at a time suitable for reporting purposes
- sensitivity - able to show trends over time
- reproducible - well founded technically and able to take into account availability of resources
- policy linkage - linked to strategic goals
- utility - ability to be reproduced, over time, nationally and regionally.

The indicators identified in the Report are intended to be consistent with National, State and Regional indicators and be consistent over time. This intends to allow for monitoring results from national and state-based authorities to be included within the report (where relevant or available), ensure the report's relevance to national and state reporting processes and allow for environmental trends to be identified with greater reliability.

1.4 AIMS

The aims of the 2008-2009 Southern New England State of the Environment Report are to:

- compile and present data on the current state of the environment for previously identified environmental indicators across the four local government areas of Armidale Dumaresq, Guyra, Uralla and Walcha;
- identify trends and report on changes in the environment from previous reports;
- satisfy the reporting requirements of the Local Government Act 1993;
- identify new or emerging issues within the Region;
- provide a basis for informing future Council Management Plans.

1.5 METHODOLOGY

The 2008-2009 Southern New England State of the Environment Report examines several environmental indicators grouped into eight key environmental themes, as outlined above.

Data for each of the environmental indicators has been obtained from the four Councils of Armidale Dumaresq, Guyra Shire, Uralla Shire and Walcha, relevant State Government agencies, local community based organisations, local environmental groups and members of the public. Searches of the Internet were also conducted to collect relevant information.

Data gaps are identified within the report and are generally the result of an absence of any data, an inability of the relevant organisations to provide data within the period available, a lack of response or the relevant environmental indicator being a new or emerging issue. The response rate from several sources was lower in 2008-2009 than for previous years, which has resulted in a number of unexpected data gaps throughout the report.

Information presented in this report is generally defined by the boundaries of the respective local government areas. In some cases the local government boundaries do not correspond with Government agency boundaries (e.g. Catchment Management Authority boundaries) or other significant environmental areas. References are provided, where appropriate, to outline the relevance of information to the respective Council areas.

Where possible, data is presented to illustrate:

- the current state of the environment, with regard to particular environmental indicators, within each local government area during 2008-2009; and
- trends and changes that have occurred in relation to the respective environmental indicators within each local government area and across the broader region over time.

1.6 COMMUNITY CONSULTATION AND IDENTIFICATION OF ISSUES

Community consultation for the 2008-2009 Southern New England State of the Environment Report was undertaken by placing advertisements in locally circulating newspapers and Council newsletters, and notices on the Council's web site, inviting members of the public to make submissions for inclusion in the State of the Environment Report.

Letters were also written to key local community organisations and local environmental groups inviting their submissions. These community organisations and local environmental groups were also invited to provide details of any activities or projects they had undertaken during 2008-2009 in relation to the local environment or heritage, details of any environmental monitoring conducted during 2008-2009 and outlining and new or emerging issues affecting the local environment that they were aware of.

In addition to the above requests for community input, the four Councils have also participated in various projects during 2008-2009 which have involved consultation and workshops with community members, agency representatives and Council staff. These projects include the Local Adaptation Pathways Program, Nature

Conservation Council of NSW Climate Consensus Project and development of the New England Sustainability Strategy Foundation Report. Each of these projects have been instrumental in engaging with interested local participants and identifying issues which are likely to impact on the local environment into the future. Further details of these projects are outlined below.

1.6.1 Local Adaptation Pathways Program

The New England Strategic Alliance of Councils (NESAC) Climate Change Adaptation Action Plan project was funded by a grant from the Australian Government's Local Adaptation Pathways Program (LAPP) and by the New England Strategic Alliance of Councils through a cash and in-kind contribution. The Australian Government's LAPP was established to provide local government with resources to assist in assessing risks from climate change and developing an Adaptation Action Plan. The former New England Strategic Alliance of Councils was one of the first groups of Councils across Australia to prepare a coordinated regional strategy to respond to risks associated with climate change.

This project and development of the Action Plan, undertaken by consultants Sinclair Knight Merz, consisted of two stages, being:

(1) identification of key risks to local government functions and service delivery associated with climate change (risk identification); and

(2) identification of strategies which respond or adapt to risks associated with climate change (adaptation planning).

The Plan focuses on addressing extreme and high level risks resulting from climate change identified through the risk identification process. The Plan indicates that risks identified as extreme should have action taken to address these as a matter of priority, while high risks are less urgent but still require action to make the risk as low as reasonably achievable.

Risk Identification

The risk identification stage of the project involved a series of workshops with relevant Council staff across a range of disciplines based on a climate change scenario developed by the Australian Government Department of Climate Change for the New England region for 2050 and CSIRO climate change projections for the region. The climate change scenario suggests that the New England region is likely to become warmer, with more hot days and fewer cold nights. Increased rainfall is projected in spring, summer and autumn with reduced rainfall in winter.

The risk identification workshops identified, analysed and evaluated climate change risks based on the three themes of:

- planning and environment
- infrastructure and infrastructure services; and
- corporate and community services.

The extreme and high risks identified through the workshop sessions (being the focus of the Plan) are summarised below in Table 1.

Table 1: Climate Change Adaptation Action Plan Risk Assessment Summary – Extreme and High Risks

Themes	Sub-Themes	Risks	Risk Rating
Planning and Environment	Water	changes in water table impacts on quality and security of water supply	Extreme
		increased algal blooms in water supply	High
		reduction in non-reticulated water supply for rural / domestic use	High
		reduction in surface water available for agricultural use	High
	Waterways	reduced health of waterways due to sedimentation and eutorophication	Extreme
	Flooding	increased flooding in low lying developed areas and extension of flood range	High
	Ecosystems	loss of aquatic ecosystem services / values	High
	Biodiversity	loss of biodiversity	Extreme
	Weeds	increased weed infestation	Extreme
	Vegetation	loss of non-urban vegetation	Extreme
	Species Composition	change in species composition of local environment	Extreme
	Bush Fire	increased bush fire risk due to settlements and infrastructure	High
Infrastructure and Infrastructure Services	Dams	increased risk of dam failure	Extreme
	Bridges	reduced structure stability of timber bridges with heightened chance of failure	Extreme
	Pipes	increased cracking of pipes	High
	Buildings	increased noise complaints due to growth in air-conditioner use	High
		increased expenditure on up-grades to insulation / cooling systems and building storm water systems	High
	Roads	increased damage to road surfaces	High
		increased damage to unsealed roads	High
	Stormwater	inadequate stormwater infrastructure capacity resulting in larger floods	High
		increased stormwater infiltration into sewerage system	High
Corporate and Community Services	Agricultural Production	increased agricultural production pressure with negative environmental impacts	Extreme
	Air Transport	reduced reliability of air transport services	High
	Health	increased demand for mental health services	High
		increased potential for water borne diseases	High
		increased heat stress on staff and residents with potential for increased mortality	High
		increased storm related injury and death	High
	Economic Development	failure to identify and take advantage of emerging markets	High
		climate driven economic crisis	High
	Infrastructure	reduced reliability of power supplies	High

Adaptation Planning

Climate change adaptation planning is described as:

> *Adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects which moderates harm or exploits beneficial opportunities. Various types of adaptation can be distinguished, including autonomous and planned adaptation:*
>
> - *autonomous adaptation – adaptation that does not constitute a conscious response to climatic stimuli but is triggered by ecological changes in natural systems and by market or welfare changes in human systems – also referred to as spontaneous adaptation.*
>
> - *planned adaptation – adaptation that is a result of deliberate policy decision, based on an awareness that conditions have changed or are about to change and that action is required to return to, maintain or achieve a desired state.*
>
> - *Reactive adaptation – adaptation that takes place after impacts of change gave been observed.*
>
> (Australian Greenhouse Office, 2007)

Climate change adaptation planning is a method by which local government can respond to community concerns regarding climate change and to increase community awareness about climate change and community capacity to respond to climate change.

The climate change adaptation planning stage of the project (Stage 2) involved holding workshops with key Council officers and Councillors, representatives from other environmental agencies and the University of New England. The workshops involved discussing and developing actions which respond to the impacts / risks associated with climate change identified in stage one of the project.

The focus of the Action Plan is to guide actions which the member Councils can undertake to adapt to risks arising from projected climate change within the Southern New England region over the period to 2050. It is noted that a range of other agencies including the Australian and State Governments, the Northern Rivers, Border Rivers / Gwydir and Namoi Catchment Management Authorities, landcare agencies, the NSW Rural Fire Service and State Emergency Services also have a role in planning for climate change adaptation.

Tables outlining the adaptation actions that were identified in Stage 2 of the project are included in Appendix A. The timeframe for commencement of actions are as follows:

- short term priority – commence within 1-2 years
- medium term priority – commence within 2-5 years
- long term priority – commence within 5-10 years

Finally, the Action Plan recognises that budgetary and resource constraints are potential barriers to its implementation. However, actions have been identified to focus on building on existing Council programs and initiatives to minimise the longer term cost and resource implication to Councils of projected climate change.

1.6.2 Climate Consensus Project

The Climate Consensus Project, coordinated by the Nature Conservation Council of NSW and funded through the NSW Environmental Trust, is a sustainability education program which aimed to create an informed, active and engaged NSW community, working together to reduce their greenhouse gas emissions and actively participate in climate change decision making (Nature Conservation Council of NSW, Community Feedback Report, 2009).

During October and November 2008, twelve local forums were conducted across NSW, including local forums in Armidale, Guyra and Uralla.

As part of the Climate Consensus Project local forums, participants identified community values, a vision of what conditions would be like in 20 to 50 years based on these values, and likely impacts (positive and negative) of climate change at a global, national, state and local level.

The potential local level impacts of climate change (positive and negative) that were identified at the forums are outlined below in Table 2.

Following the identification of community values, a vision and likely impacts of climate change, and with assistance from local experts and facilitators, community members at the forums also explored the key question – *how can we work together to respond to climate change ?*

Participants then developed a series of recommendations to the community, local and state governments. The recommendations for local government arising from the three local forums are included in Appendix B. Each of the Councils involved in the project have committed to considering the recommendations in future planning and decision making processes.

Figure 1: Participants at the Armidale Climate Consensus Forum – one of three local forums delivered across the New England Tablelands of NSW

Table 2: Potential Local Impacts of Climate Change identified at the Climate Consensus Program Local Forums in Armidale, Guyra and Uralla

Local Level Impacts	Forum where issue identified		
Positive	**ADC**	**GSC**	**USC**
potential driver for positive social change – enhance unification and communication of humans, generate local business, local knowledge and local ideas, increase use of renewable energy, better transportation, more social and green places, and promote self sufficiency.	✓	✓	✓
opportunity to lead by example and transform the area into an example of sustainability, through education and investment	✓		
warmer climate: - less frosts and heating requirements - longer growing period for agriculture, allowing increased food production opportunities		✓	✓
"green technology" will bring industry, employment and better building practices		✓	✓
decentralisation will bring new people into the region with increased skills		✓	✓
increased land values			✓
create opportunities to educate for sustainable life and health			✓
Negative			
local population growth in response to sea level rise resulting in negative impact on water resources and cost of food.	✓	✓	
potential decrease in demand for certain areas and resulting decrease in land values	✓		
health and environmental challenges	✓	✓	
dryer climate (drought, higher temperatures) resulting in damage to environment through erosion, loss of native trees and established pasture.			✓
agriculture – decrease in fine wool production, less water available and increased fruit fly infestation			✓
negative state government control and intervention into local issues		✓	
variable and unpredictable weather and economic climate		✓	

1.6.3 New England Sustainability Strategy – Foundation Report (2009)

In August 2008 the New England Strategic Alliance of Councils launched an initiative to develop a sustainability strategy for the New England Region. A new consortium of professionals and organisations, nicknamed NESSiE (New England Sustainability Strategy Executive) were contracted to develop a whole of community New England Sustainability Strategy.

An initial step in developing the New England Sustainability Strategy was a Public Forum held on 22 September 2008 at the New England Regional Art Museum in Armidale. The Forum was attended by 110 delegates reflecting the broad cross section of the community.

After considering SWOC (strength, weakness, opportunities, challenges) Reports on areas of youth, social, environment, economic, government, Indigenous and global, a 100 year vision for the Region was developed and Working Groups were established to identify the priority issues and initiatives for action to achieve the 100 year vision. An illustration of the priorities and initiatives, which form the foundation of the action plan for the New England Sustainability Strategy, is shown below in Figure 2.

Figure 2: **Priorities and Initiatives – New England Sustainability Strategy Foundation Report**

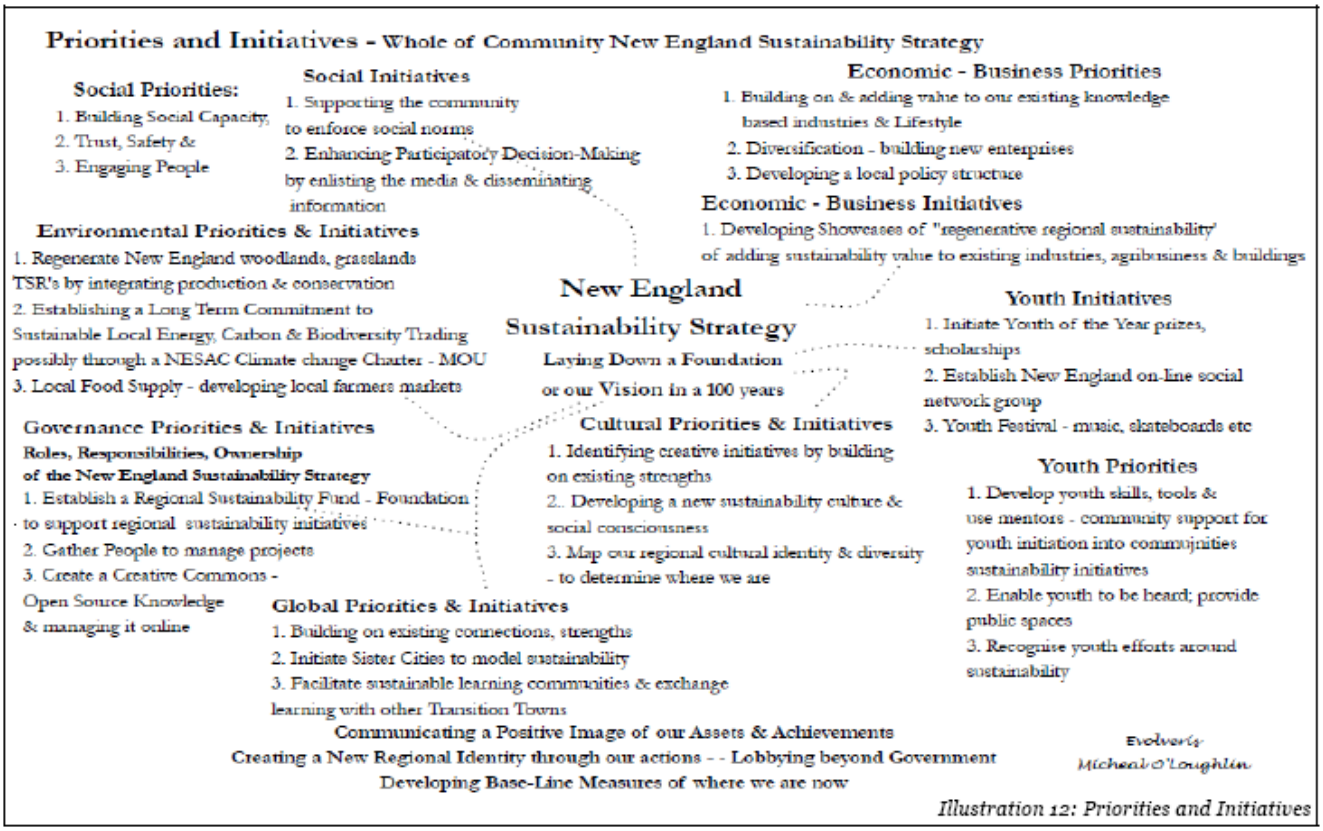


Illustration 12: Priorities and Initiatives

A major objective for this first phase of work has been establishing agreement between key stakeholders, analysis of sustainability issues and opportunities, and establishing the necessary support and resources for the Strategy.

The four Councils of Armidale Dumaresq, Guyra, Uralla and Walcha have made an application under the NSW Environmental Trust – City and Country Environment

Restoration Program for funding to complete the New England Sustainability Strategy. The aims of the projects will be to:

(a) extend and complete the collaborative development of the New England Sustainability Strategy (NESS);

(b) develop a replicable model for the integration of NESS, and other similar initiatives such as the Local Adaptation Pathways and Climate Consensus Projects, into local government planning, management and reporting systems; and,

(c) finalise the governance structure for the New England Sustainability Strategy Executive (NESSiE).

An announcement on funding is expected in November 2009.

SECTION 2 – SOUTHERN NEW ENGLAND REGION PROFILE

2.1 SOUTHERN NEW ENGLAND REGION

For the purpose of this State of the Environment Report, the Southern New England Region is defined as the area covered by Armidale Dumaresq Council, Guyra Shire Council, Uralla Shire Council and Walcha Council (formerly known as the New England Strategic Alliance of Councils or NESAC).

The Southern New England Region forms part of a larger land area better known as the Northern Tablelands of NSW or New England Tablelands of NSW.

Figure 3: Location of Southern New England Region in NSW
Source: NSW Department of Local Government

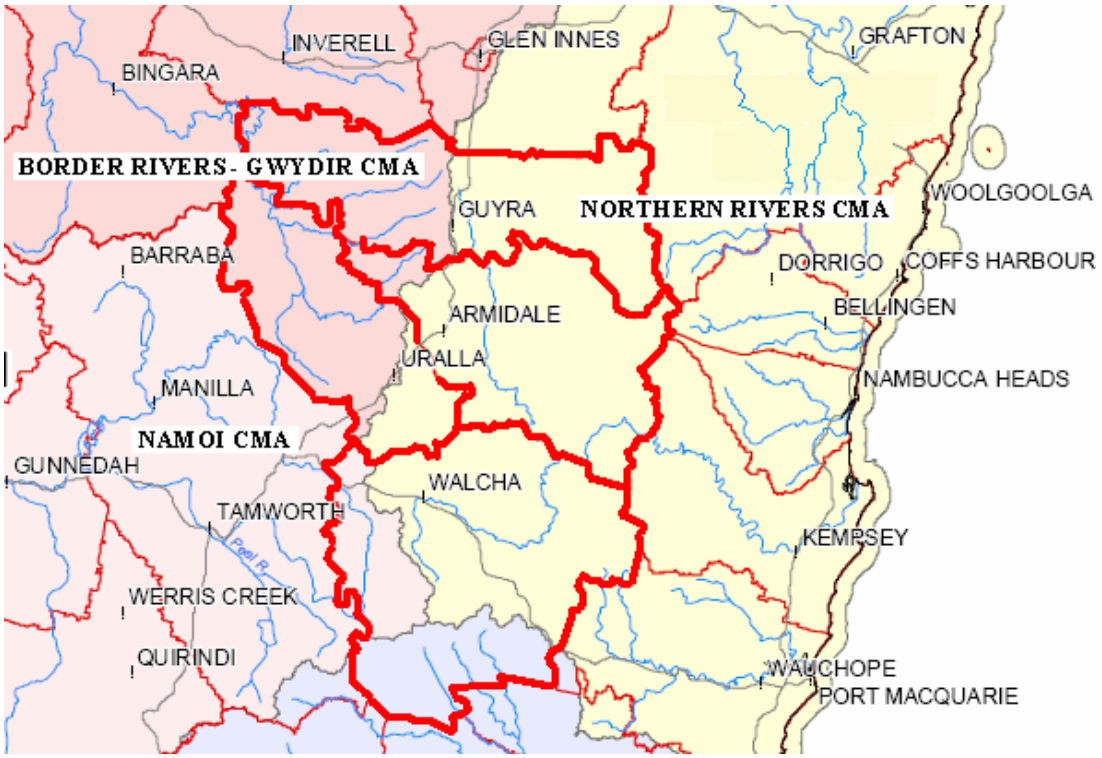
The Southern New England Region covers approximately 18,127 km^2, spanning distances of over 150km east to west and over 200km north to south. The Region has four main urban centres of Armidale, Guyra, Uralla and Walcha, along with numerous villages and settlements, including Ben Lomond, Black Mountain, Bundarra, Ebor, Hillgrove, Kentucky, Kingstown, Llangothlin, Nowendoc, Tingha, Walcha Road, Wandsworth, Wollomombi, Wollun, Woolbrook and Yarrowitch.

Armidale is the main retail, commercial and educational centre within the Region, and is home to the University of New England, the New England TAFE College and three private boarding schools.

The Southern New England Region straddles the Great Diving Range and is part of the New England Tableland Bioregion comprising a stepped plateau of hills and plains with elevations between 600m and 1500m ASL. Rainfall, temperature and soils change with topography and vegetation is very diverse with a high degree of endemism (www.decc.nsw.gov.au). Eastern parts of the Region are home to areas of the Central Eastern Rainforest Reserves World Heritage Area.

The Southern New England Region also contains numerous rivers and tributaries, draining into the Clarence River, Namoi River, Gwydir River and Macleay River Catchments. These catchments are managed respectively by the Northern Rivers Catchment Management Authority, Namoi Catchment Management Authority, Border Rivers-Gwydir Catchment Management Authority and Hunter – Central Rivers Catchment Management Authority.

Figure 4: **Local Government and Catchment Management Authority Boundaries**
Source: CMA NSW (Nov, 2004)



The Southern New England Region is also known for its high quality wool production and as a major production area for both lamb and beef cattle. Other significant industries in the area include forestry, mining and tourism.

Non-indigenous settlers first arrived in the Southern New England Region during the early 1800's, attracted by initial growth in agriculture and mining. Development onwards from this period has left many items of historical importance which exist alongside a rich Aboriginal culture in this unique natural environment.

2.2 POPULATION

The Southern New England Region has a population of 38,386 (ABS estimate at 30 June 2007). The Region experienced a declining population during the 15 year period from 1991 to 2006 (-7.6%), however latest figures suggest this trend may have halted.

Armidale is the main urban centre within the Region, having the largest population and being the principle focus for retail, commercial, education and research facilities. Armidale also has a distinctly different demographic characteristic to other settlements (such as age structure and mobility) due to the presence of the student population associated with the University of New England and boarding schools (Draft New England Development Strategy, 2008).

Table 3: Population Summary for Southern New England Region

LGA	1991	1996	2001	2006	2007*	2008*	Pop. %	Area (km^2)
ADC	26,071	25,198	24,807	24,533	24,819	25,228	64.3	4,235
GSC	4,927	4,474	4,475	4,402	4,436	4,435	11.5	4,395
USC	6,183	6,048	6,099	5,989	6,020	6,081	15.6	3,230
WC	3,711	3,363	3,307	3,327	3,306	3,276	8.6	6,267
Region Total	40,892	39,083	38,688	38,251	38,581	39,020	100	18,127

* estimated resident population at 30 June
(32180.Regional Population Growth, Australia, ABS, 2009)

2.3 CLIMATE

The climate of the Southern New England Region varies markedly between seasons and between locations throughout the Region. Topography is the most important factor that determines local rainfall, temperature and wind patterns. Altitude is closely related to maximum and minimum temperatures, with higher elevations experiencing longer periods between first and last frost and more extremes of cold during winter.

The Southern New England Region is dominated by cool, dry, west to south-westerly air supplied from the continental interior or from the southern oceans during winter, whereas summer months are predominantly easterly flows originating from the Tasman Sea. These airflows are then primarily responsible for the temperature and rainfall that is experienced in the region.

Airflows influence temperatures across the Region. Cold fronts that sweep across the region from the continental interior and southern oceans are responsible for the low temperatures that occur during the winter months, and conversely, the easterly airflow during summer months brings warmer conditions to the region.

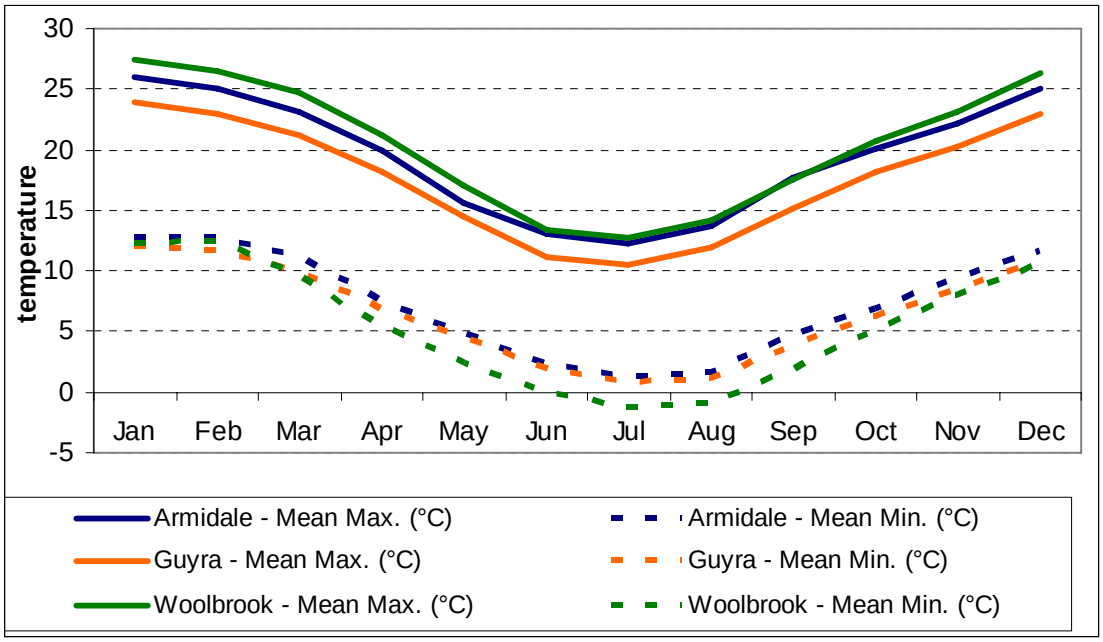
Average minimum and maximum temperatures experienced in the region during summer months range between 12°C and 27°C, whereas the average winter minimum and maximum temperatures are -1°C to 12°C. Frosts are common during the colder months, occurring on an average 100 days per year, the first of which

typically occur around Anzac Day (25th April). There are one to three months of the year with an average temperature greater than 18°C.

The Southern New England Region also lies within a zone of transition from the dominantly summer maximum rainfall areas of northern Australia to the dominantly winter maximum rainfall areas of the south. As such, the area is classified as having a maximum summer rainfall with numerous convectional thunderstorm events occurring as the cool maritime air flows from the east up onto the warmer escarpment causing atmospheric instability. Sixty to seventy percent of the total annual rainfall occurs during the summer months.

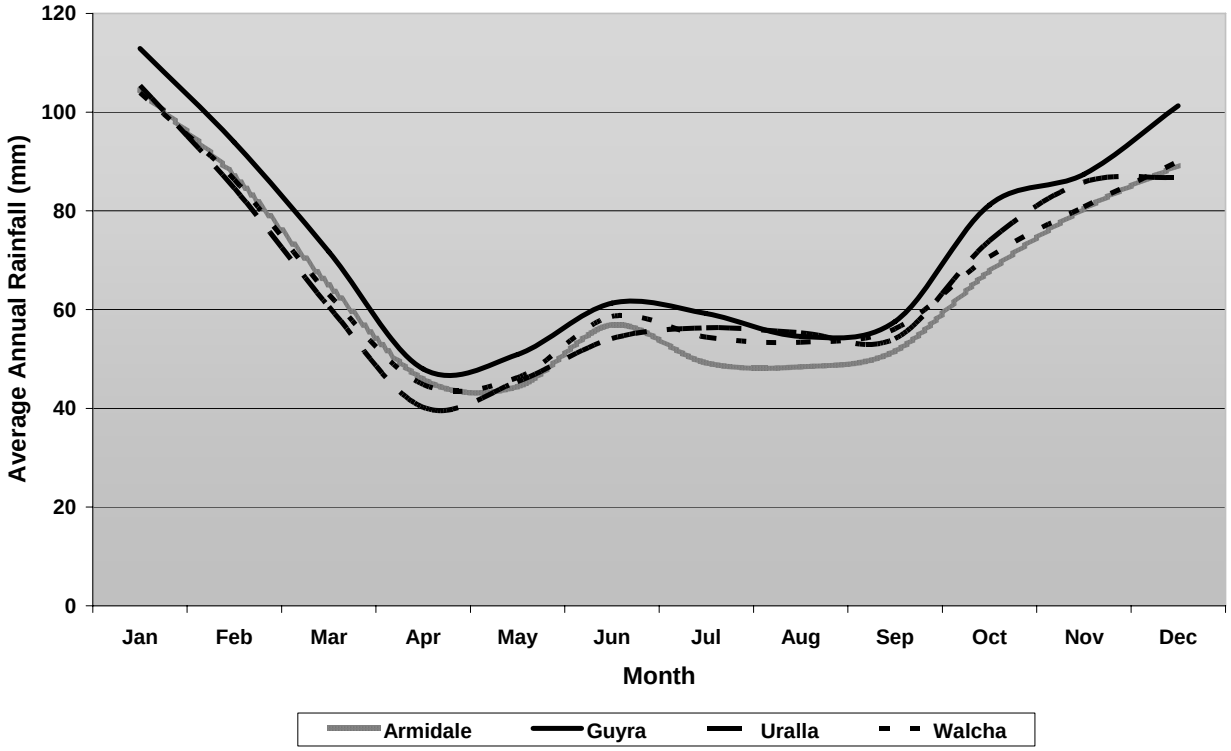
Higher rainfall peaks occur around the higher elevations toward the eastern edge of the escarpment and decrease toward the western areas of the region. Average annual rainfalls on the eastern edge of the region are in the order of 2000mm, decreasing to 700mm in the western region. Snow may often be associated with rainfall during the winter months, but is mainly confined to the higher regions along the eastern edge of the escarpment with an elevation generally in excess of 900m.

Figure 5: **Average Temperatures – Southern New England Region**
Source: Bureau of Meteorology



Weather stations at Armidale (Airport), Guyra (Post Office) and Woolbrook (Danglemah Road).

Figure 6: **Average Annual Rainfall – Southern New England Region**
Source: Bureau of Meteorology



SECTION 3 – LAND

3.1 INTRODUCTION

The Southern New England Region comprises predominantly privately owned land (80%) with the majority used for agricultural grazing purposes. The main agricultural activities are wool and beef cattle production, while forestry also occurs in the east. Less than five per cent of agricultural land is under crops, and irrigated agriculture is minimal. The remaining 20% of land is publicly owned, with uses such as forestry, conservation and travelling stock routes.

3.2 CONDITION OF THE ENVIRONMENT

The environmental indicators outlined below have been identified to assess and monitor the state, or condition of the environment with respect to land use and its management. This section provides up-dated data for the respective environmental indicators for 2008-2009 and outlines any significant trends.

3.2.1 Land Use and Management – Rural

Agricultural Land Use

The stocking rate or carrying capacity of rural properties is a function of many factors including farm management techniques, seasonal variations and land capability. While stock carrying capacity is not necessarily an accurate indicator of soil health, it is included as an environmental indicator for rural land use because higher or increased stocking rates can indicate sustainable and appropriate land management techniques are being employed.

Table 4 shows the stocking rates and trends in carrying capacity for land within the Southern New England Region. Details prior to 2008-2009 are representative of the Armidale Rural Lands Protection Board (RLPB), which was replaced in January 2009 by New England Livestock Health and Pest Authority (LHPA).

Table 4: Stock Numbers in the Southern New England Region

Stock	No. Head 02/03	No. Head 04/05	No. Head 05/06	No. Head 06/07	No. Head 07/08	No. Head 08/09
Beef Cattle	309,027	322,877	357,320	<< DATA GAP >> No details provided by RLPB or LHPA		
Dairy Cattle	1,140	4,253	1,719			
Sheep	2,180,364	1,990,247	1,904,483			
Horses	3,726	4,383	3,862			
Goats	8,507	10,444	8,879			
Deer	213	303	152			
Pig	8,228	6,306	484			
Region DSE / ha	**3.9**	**3.9**	**4.0**			

Drought

As noted above, the use of rural land and management techniques adopted in relation to rural land can be the result of many differing factors, including prevailing climatic conditions. With climate change scenarios predicting a generally warmer and dryer climate across the Region into the future (see Appendix I) it is likely that rural land use patterns and management techniques will also experience modifications to adapt to the changing environment.

Drought and the incident or prevalence of drought conditions has a particularly strong influence on rural land use. Included in Appendix C are a series of quarterly maps produced by the NSW Department of Primary Industries that show the areas of NSW that have been drought affected during 2008-2009. The maps show that varying parts of the Southern New England Region have been identified as being either "in drought" or "marginal" during the different seasons of the reporting year.

The drought maps in Appendix C are prepared from information provided by Livestock Health and Pest Authorities (formerly provided by RLPBs), rainfall details from the Bureau of Meteorology and reports from Department of Primary Industries regional staff.

Drought classification of an area takes into account the following factors:

- a review of historic rainfall records for the area;
- pasture availability;
- climatic events such as frosts; and
- seasonal factors such as pasture growing seasons.

Land Clearing

The Northern Rivers Catchment Management Authority (CMA) did not approve or refuse any applications to clear native vegetation during 2008-2009 and have recorded zero (0) hectares of vegetation clearing, which is consistent with data provided for 2007-2008. No incidents of land clearing were reported by Border Rivers – Gwydir CMA for 2008-2009.

<<*DATA GAP*>> No information was provided by Namoi CMA or Hunter-Central Rivers CMA regarding land clearing within the Southern New England Region during 2008-2009.

Property Vegetation Plans

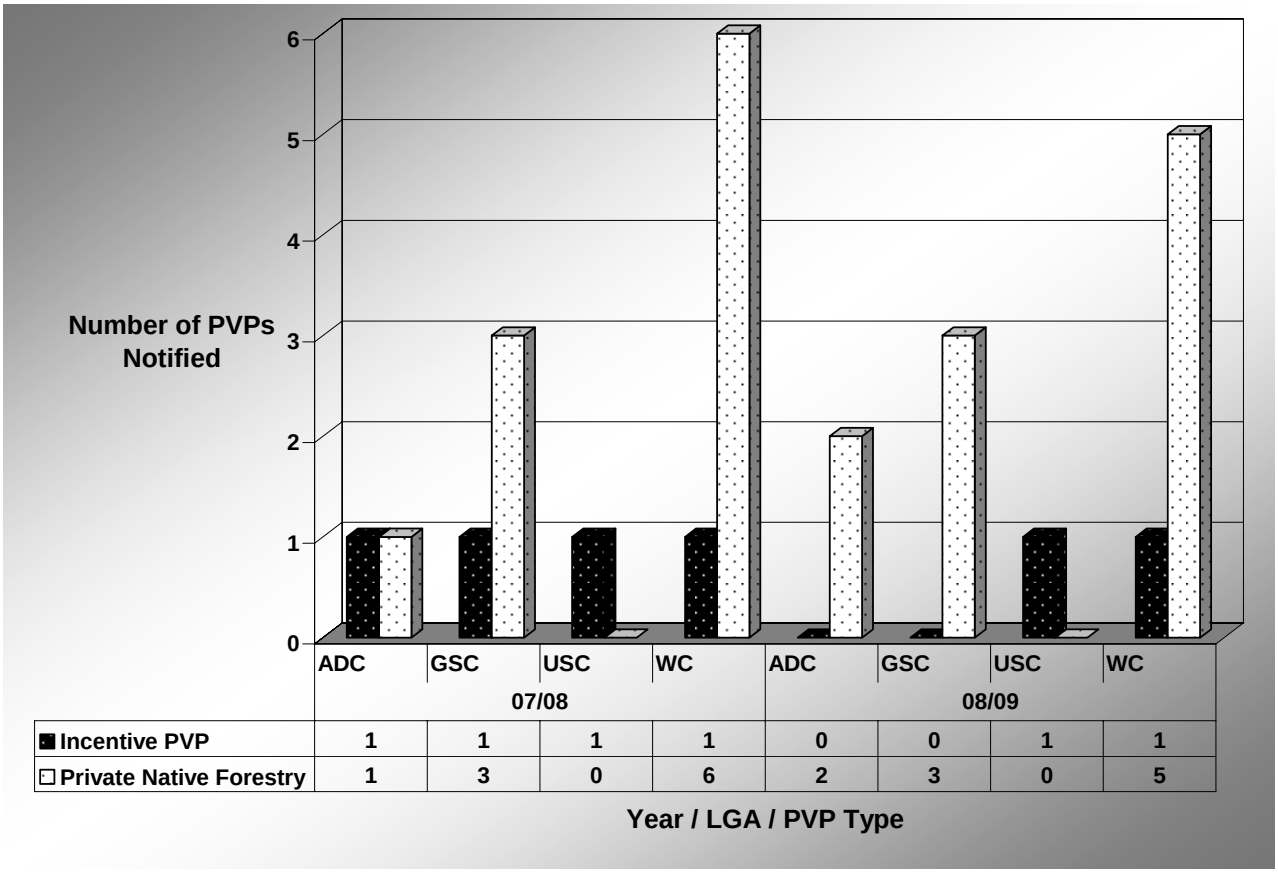
A Property Vegetation Plan (PVP) is a voluntary, legally binding agreement between a landholder and the local Catchment Management Authority, and may be obtained for a number of reasons, including:

- applying for native vegetation incentive funding
- to protect native vegetation for future generations
- to confirm that native vegetation on a property is regrowth, providing a landholder with assurance that they will not need future clearing approval
- to change the regrowth date of native vegetation to an earlier date, provided that proof can be supplied illustrating two previous clearing events associated with rotational farming
- to confirm whether existing rotational farming, grazing or cultivation practices meet the definitions of these in the *Native Vegetation Act 2003* so that clearing approval will not be required
- to obtain clearing approval, and to secure any offsets associated with that clearing.

Following changes to the *Native Vegetation Act 2003* on 1 August 2007, harvesting of timber for the purposes of Private Native Forestry (PNF) requires approval through a private native forestry property vegetation plan (PNF PVP) that ensures environmental outcomes are improved or maintained. A PNF PVP is a legally binding agreement between a landholder and the Department of Environment and Climate Change (www.environment.nsw.gov.au).

The various Catchment Management Authorities operating within the Southern New England Region and the Department of Environment and Climate Change notify the Council when Property Vegetation Plans are approved under provisions of the *Native Vegetation Act 2003* within their local government area. The following Figure shows the number of Property Vegetation Plans that have been notified to the respective Councils during 2007-2008 and 2008-2009.

Figure 7: **Property Vegetation Plans (PVP) Notified to Councils within the Southern New England Region**



	ADC	GSC	USC	WC	ADC	GSC	USC	WC
	07/08				08/09			
Incentive PVP	1	1	1	1	0	0	1	1
Private Native Forestry	1	3	0	6	2	3	0	5

Management of Travelling Stock Routes (TSR)

<<*DATA GAP*>> Information requested from the New England Livestock Health and Pest Authority (formerly Rural Lands Protection Board) regarding travelling stock route use and management, including total area (ha), frequency of use and number of stock using TSR has not been provided for 2007-2008 or 2008-2009.

3.2.2 Land Use and Management - Urban

The use and management of land for urban purposes has been identified as a form of pressure on land resources, particularly prime crop and pasture land. Armidale Dumaresq Council has developed a land monitor during 2008-2009 to track the release of new housing allotments for the purposes of monitoring demand and supply in connection with implementation of the Armidale Dumaresq LEP 2008. Details of the land monitoring will be available in future reports.

Development Approvals

Council development approvals statistics provide an indication of the level of construction activity in the respective local government areas and are included in this report to provide baseline date for future comparison. While the statistics do not directly show the level of pressure for expansion of the urban area into surrounding agricultural or semi-agricultural land, they should over time, provide an indication of development trends in the likely demand for new housing in the respective urban areas. The following information has been obtained from Local Development Performance Monitoring Reports published by the NSW Department of Planning.

Figure 8: **Development Approval Summary Data – Armidale Dumaresq Council**

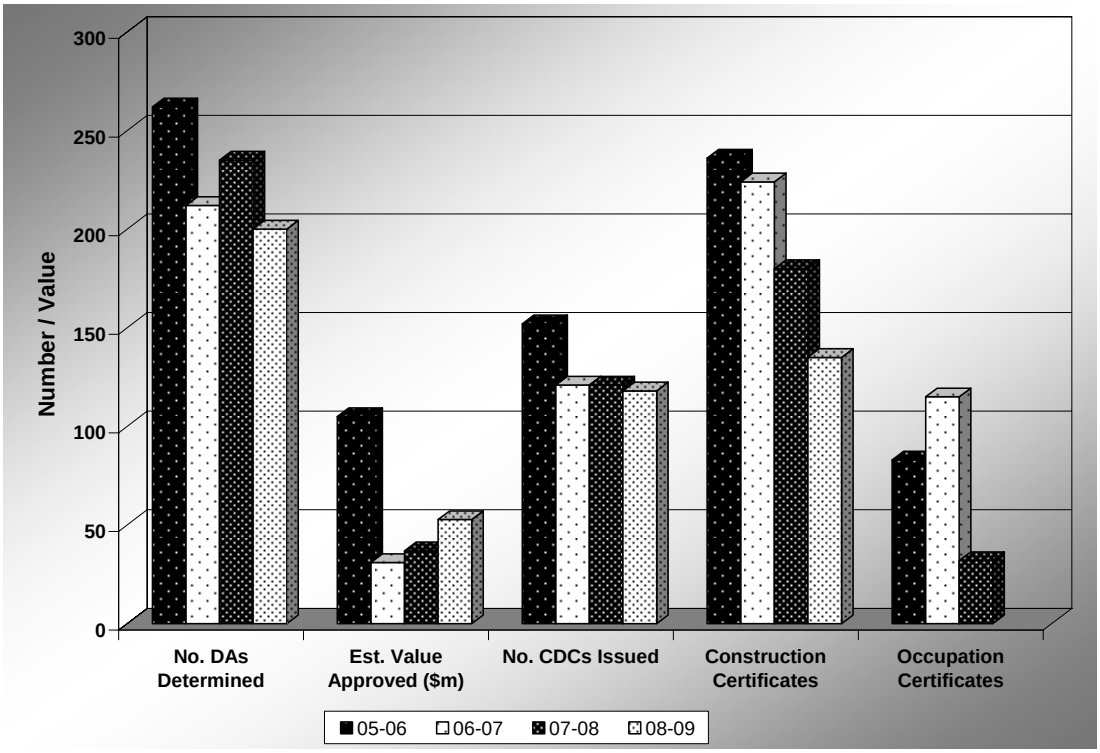


Figure 9: **Development Approval Summary Data – Guyra Shire Council**

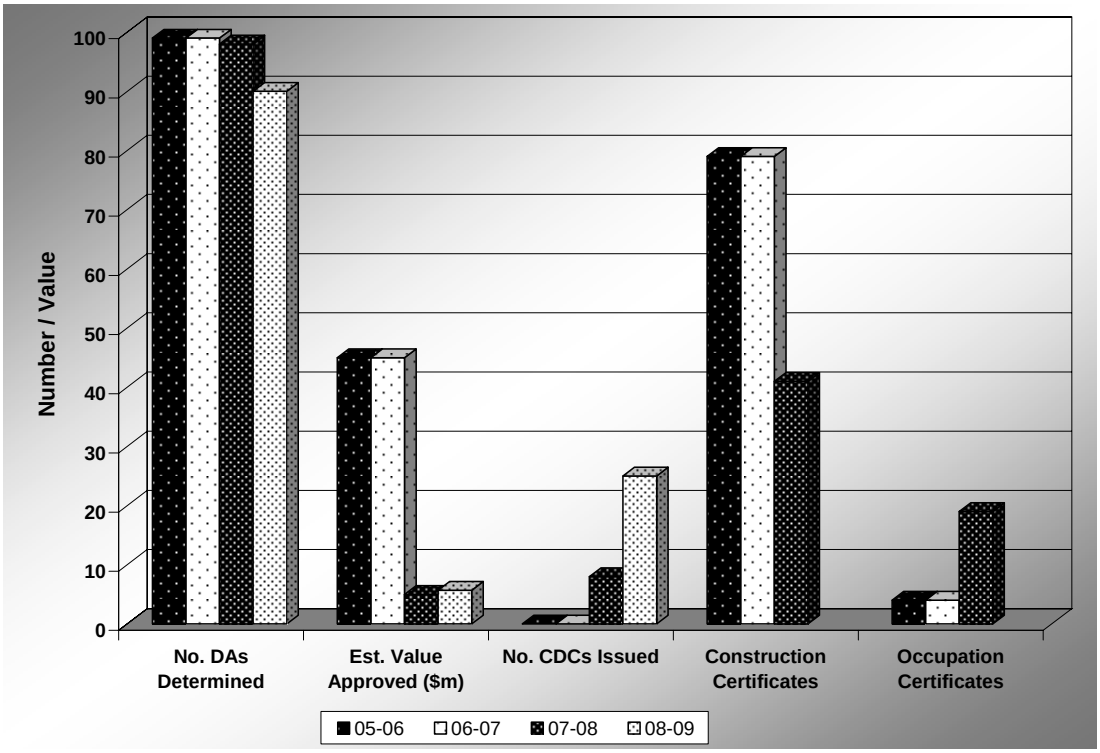


Figure 10: **Development Approval Summary Data – Uralla Shire Council**

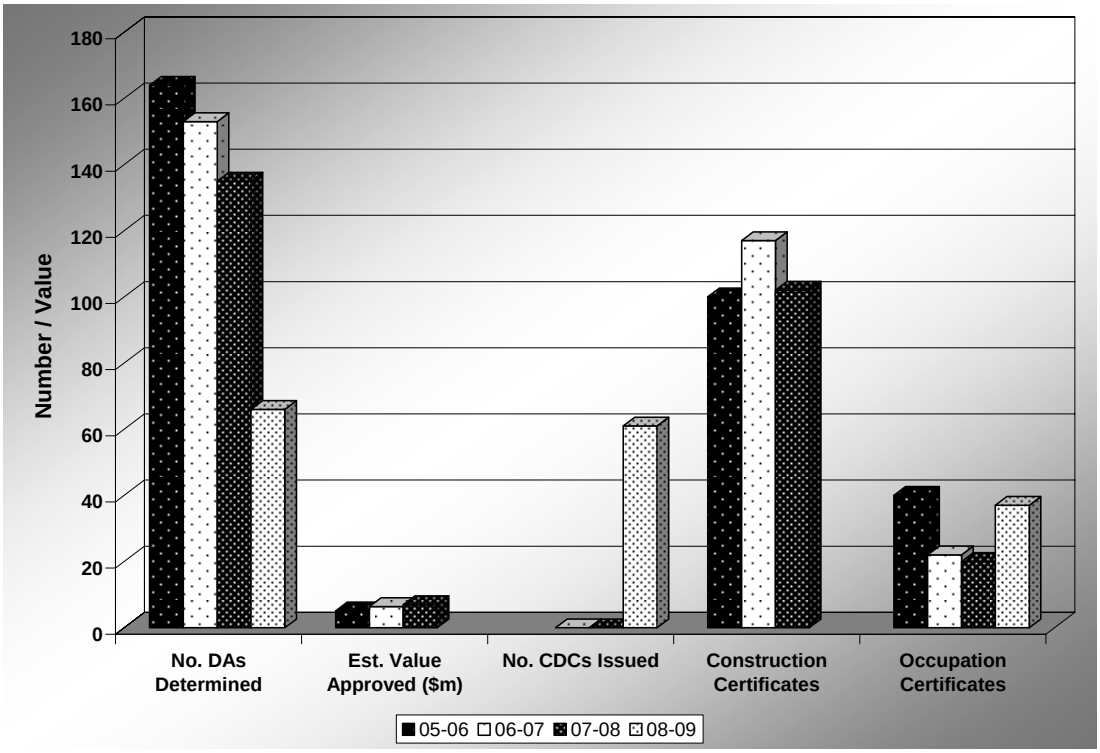
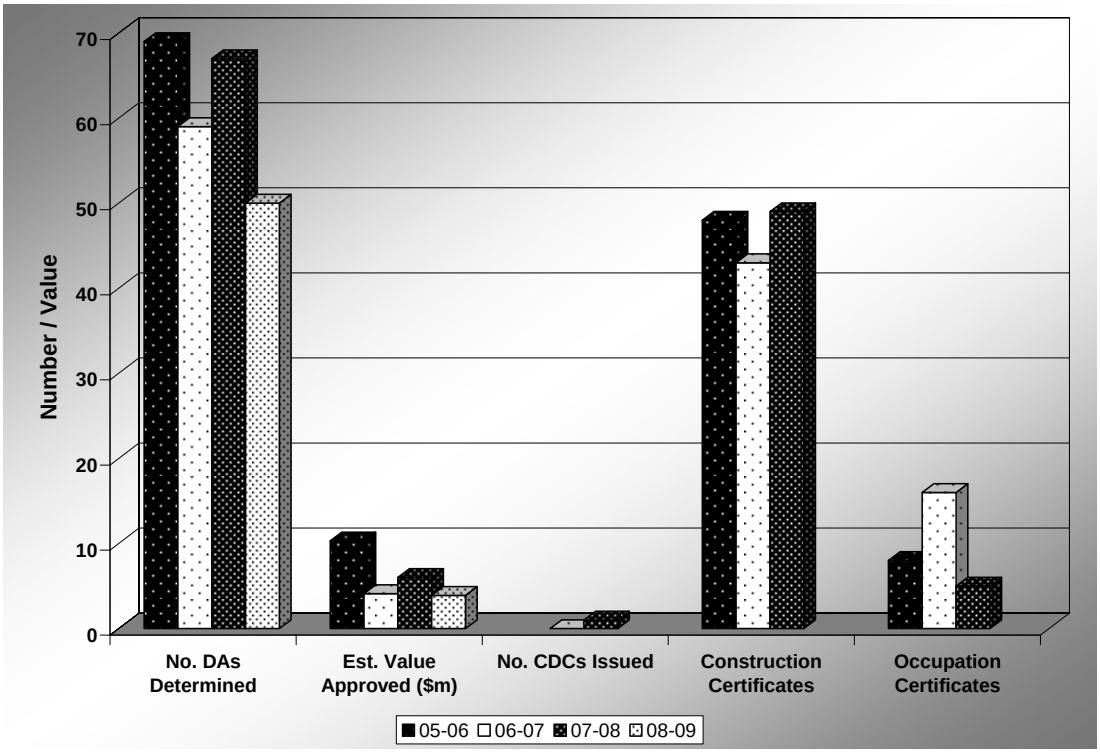


Figure 11: **Development Approval Summary Data – Walcha Council**



3.2.3 Bush Fire

Bush fires are recognised as a natural and recurring phenomenon that influence the environment and play a potentially significant role in the evolution and maintenance of both natural and cultural heritage values. Fires can also pose a significant threat to human life, property and the environment. Uncontrolled high intensity fires and a high frequency of fires have the greatest potential to harm the environment.

Bush fire management in rural areas of the Southern New England Region is carried out by the NSW Rural Fire Service – New England Zone (RFS). The National Parks and Wildlife Service and NSW Forests also carry out bushfire management on land under their control. Following is a brief summary of bush fire activity and management by the RFS in the New England Zone during 2008-2009. Comparative data for 2006-2007 and 2007-2008 is outlined where available.

Incidents / Fires Attended

During 2008-2009 the RFS responded to 271 incidents of which 159 (59%) were classified as fire/explosion. This number of incidents is relatively similar to 2007-2008 when the RFS responded to 266 incidents of which 149 (56%) were classified as fire/explosion. In 2006-2007, 414 incidents were responded to, of which 279 (68%) were identified as fire/explosion. Some of the other incidents types contributing to the total number of incidents in 2008-2009 included false alarms (4), good intent calls (26), hazardous conditions (8) and motor vehicle accidents/rescue/emergency (69).

Area Burnt

The total area burnt by bushfires across the Southern New England Region during 2008-2009 was approximately 3000ha, which is significantly lower that the 39,274ha burnt in 2007-2008.

Fire Permits
A total of 1213 fire permits were issued across the Southern New England Region during the 2008-2009 bush fire danger period, compared to 1219 in 2007-2008.

Hazard Reduction
Approximately 4900 hectares of land was subject to hazard reduction activities in 2008-2009.

Community Education
During 2008-2009 the RFS conducted 21 community education programs aimed an increasing community awareness and preparedness for bush fires. A similar number of programs were conducted in 2007-2008.

3.2.4 Extractive Industries

Resource Audit
In 2009, the NSW Department of Primary Industries issued local government area based Resource Audit Maps which outlined:

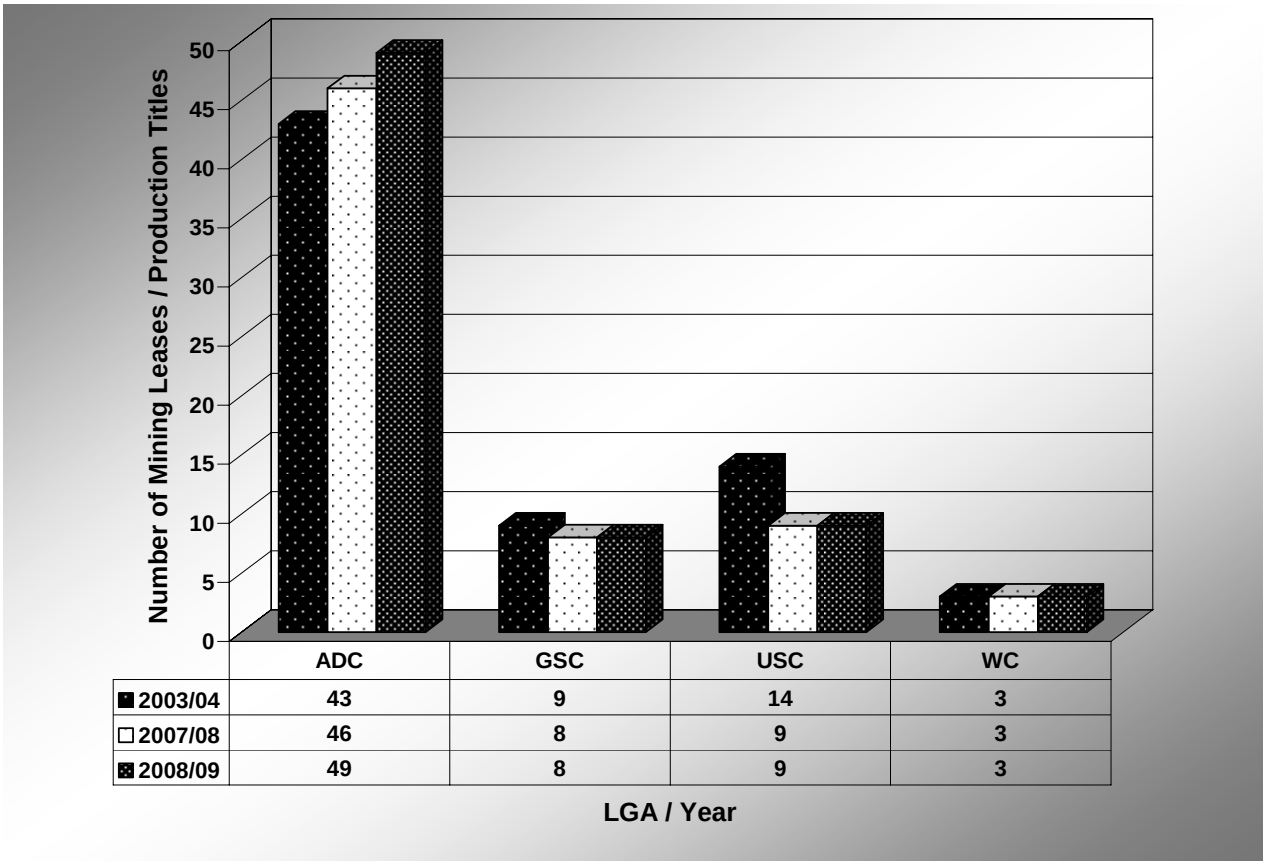
- identified resources – areas containing existing quarries, mines and/or identified resources;
- potential resources – areas containing potential mineral and/or extractive resources; and
- buffer zones.

The maps provide a spatial summary of known and potential mineral resources in each local government area and are intended to guide future land use planning decisions. Copies of the maps for the Armidale Dumaresq, Guyra, Uralla and Walcha local government areas are contained respectively in Appendices D, E, F and G.

Mineral Claims, Mining Leases and Production Titles
Details of mining activity in the Southern New England Region has been provided by the NSW Department of Industry and Investment – Minerals and Energy Division for 2008-2009 in relation to 'production titles'. Information relating to mining activity provided for previous reports by the NSW Department of Primary Industries – Mineral Resources related to 'mining leases'. 'Production titles' cover a number of titles, one of which is a mining lease. Other types of titles potentially include dredging leases, gold leases, private mining leases, coal mining leases etc.

During 2008-2009 there were a total of 69 operational mining Production Titles across the Region, compared to 66 mining leases or mineral claims in operation during 2007-2008 and 69 in 2003-2004. Figure 12 below provides a summary of mining activity in terms of the number of active mining leases or production titles by local government area over this period.

Figure 12: **Mining Leases and Production Titles**



Of the 49 production titles active in the Armidale Dumaresq LGA during 2008-2009, 48 were held by Straits (Hillgrove) Gold Pty Ltd or Hillgrove Mining Pty Limited. Similarly in the Guyra LGA, all of the current production titles were held by Cluff Resources Pacific NL or Conrad Silver Mines Pty Ltd, and in Walcha LGA all current titles were held by O.T. Warden. Titles held in Uralla LGA were noticeably different in nature, with the 9 titles being held by 7 separate parties.

The total area covered by current Production Titles in the Southern New England Region during 2008-2009 was 2703.24 hectares compared to 2465.83 hectares in 2007-2008. No figures are available on the area covered by mineral claims or mining leases in previous years. While the total number of active leases or production titles has remained relatively consistent across the Southern New England Region since 2003-2004, the overall area subject to such leases has increased by approximately 10% over the last 12 months. Table 5 below shows the area covered by production titles in the Southern New England Region by local government area for 2008-2009.

Table 5: **Area Covered by Mining Production Titles in 2008-2009**

LGA	No. of Production Titles	Area Covered by Production Titles (hectares)
ADC	49	1694.89
GSC	8	590.55
USC	9	2.22
WC	3	361.13

Exploration Licenses

A total of 43 exploration licenses were current across the Southern New England Region during 2008-2009, compared to 41 in 2007-2008 and 19 in 2003-2004. All four local government areas have experienced an increase in the number of exploration licenses current in their respective areas since 2003-2004.

Table 6: Current Exploration Licences

Exploration Licenses*	Armidale Dumaresq	Guyra	Uralla	Walcha
2003-2004	9	7	2	1
2007-2008	17 (4)	20 (5)	7 (5)	8 (2)
2008-2009	18 (8)	17 (6)	7 (4)	12 (3)

* Table 6 shows the total number of licenses located fully or partly in the respective local government areas, with the number of licenses that cross LGA boundaries shown in brackets

Exploration licenses issued under the Mining Act 1992 are issued for different mineral groups. In the Southern New England Region in 2008-2009, thirty-two (32) exploration licences related to Group 1 metallic minerals, three (3) related to Group 2 non-metallic minerals, five (5) related to Group 6 minerals, one (1) licence was for Group 1 and 6, and two (2) exploration licences were for Group 8 substances.

Following is a summary of the resources covered by the different groups of exploration licence.

Group 1 (Metallic minerals)

antimony, arsenic, bismuth, cadmium, caesium, chromite, cobalt, columbium, copper, galena, germanium, gold, indium, iron minerals, lead, lithium, manganese, mercury, molybdenite, nickel, niobium, platinum group minerals, platinum, rare earth , minerals, rubidium, scandium and its ores, selenium, silver, sulphur, tantalum, thorium, tin, tungsten and its ores, vanadium, zinc, zirconia

Group 2 (Non-metallic minerals)

agricultural lime, apatite, asbestos, barite, bauxite, beryllium minerals, borates, calcite, chert, chlorite, cryolite, diatomite, dimension stone, dolomite, emerald, emery, feldspathic materials, fluorite, garnet, graphite, gypsum, halite (including solar salt), limestone, magnesite, magnesium salts, marble, mica, mineral pigments, olivine, ores of silicon, peat, perlite, phosphates, potassium minerals, potassium salts, pyrophyllite, quartzite, reef quartz, serpentine, sillimanite-group minerals, sodium , alts, staurolite, strontium minerals, talc, topaz, vermiculite, wollastonite, zeolites

Group 6 (Corundum, diamond, ruby and sapphire)

corundum, diamond, ruby, sapphire ,

Group 8 (Geothermal substances)

geothermal substances

Extractive Industries
Table 7 shows the number of extractive industries / quarries registered in each of the Southern New England Region local government areas, which have remained relatively constant over the last three years.

Table 7: Number of Registered Quarries

LGA	2005/06	2006/07	2007/08	2008/09
Armidale Dumaresq	16	16	16	16
Uralla	21	21	21	21
Walcha	28	27	27	27
Guyra	14	52	46	54

3.2.5 Contaminated Land

Number of Sites Subject to Notices or Orders
Table 8 lists sites within the Southern New England Region that are currently subject to notices relating to land contamination. The notices are issued by the Department of Environment and Climate Change (formerly Environment Protection Authority). No new notices were issued during 2008-2009.

Table 8: Current Notices for Contaminated Land
Source: Department of Environment, Climate Change and Water

LGA	Site	Occupier	Notice Type	Issue Date
Uralla	Walcha Road, Uralla	Koppers Australia Pty Ltd	Remediation Order	September 1992
Armidale Dumaresq	Armidale Gas Works	Armidale Dumaresq Council	Note of existence of Voluntary Remediation Proposal	December 2002

Armidale Gasworks
Remediation of the Armidale Gas Works site commenced in 2005-2006 and was completed towards the end of that period. During 2006-2007, validation of the remediation work was carried out by an accredited site auditor and a site validation report was completed.

Since this time, the site has been the subject of on-going monitoring in accordance with a Post Construction Site Environmental Management Plan. A report on the monitoring results is to be provided to Armidale Dumaresq Council in late 2009, and results will be included in the 2009-2010 state of the environment report.

Identification / Remediation of Contaminated Sites
During 2008-2009, the two new sites were identified in Armidale as being potentially contaminated due to the presence of underground fuel storage tanks. During this same period, investigations commenced on one site relating to its former use as a timber treatment plant / storage area and three separate sites were investigated in relation to their former use as depots and/or existence of underground fuel storage tanks. Of the three sites investigated, all were identified as being suitable for

continuing industrial and/or commercial use. Due to the sensitive nature of details relating to potential site contamination, specific details of the properties involved are not included in this report.

3.2.6 Salinity

No specific details or mapping of areas affected by salinity or rising water tables are currently available for the Southern New England Region. However, it is recognised that parts of the Region are affected by salinity and that certain activities do contribute towards increased salinity. Uralla Shire Council and Walcha Council have been involved in projects to address salinity issues within their respective areas, which are outlined below in Section 3.3.2.

3.3 ISSUES AND ACTIONS RELATING TO LAND USE AND MANAGEMENT

3.3.1 Impacts on Land Use and Management

Activities and issues that impact, or create pressure on land resources in the Southern New England Region have been identified in previous State of Environment Reports. These pressures are broadly identified as:

- use and management of rural land
- urban development
- drought
- weeds (see Part 6 – Biodiversity)
- bushfires
- extractive industries
- contaminated land

3.3.2 Council Actions

Each of the Councils in the Southern New England Region continue to implement responses to the issues and pressures outlined above in order to minimise existing and potential impacts on the environment of the Region. Following is a summary of the respective Council actions that were implemented during 2008-2009 in relation to land.

LAND USE AND MANAGEMENT ACTIONS – 2008-2009	
Rural / Urban Land	**All Councils** ***New England Development Strategy and LEP(s)*** In recent years, Armidale Dumaresq, Guyra Shire, Uralla Shire and Walcha Councils have been participating in a project to prepare a Development Strategy and Local Environmental Plan (LEP)(s) for the 4 local government areas. The project is half funded by the NSW Department of Planning's Planning Reform Fund. Consultants WorleyParsons (incorporating Planning Workshop) are preparing the Development Strategy and LEP(s). The Development Strategy will inform the provisions to be included in the LEP(s), which will be based on the Standard LEP 'template' introduced by the State Government in 2006 for all NSW Councils. The LEP(s) will replace the current plans applying to the 4 local government areas.

Rural / Urban Land (continued)	In August 2008 the Department of Planning endorsed the Draft New England Development Strategy (Draft Strategy) for public exhibition. The Draft Strategy was exhibited from 15 September to 27 October 2008. During the exhibition period several community meetings were held across the Region. A total of 55 submissions on the Draft Strategy were received. Consideration of the submissions resulted in some changes being made to the exhibited Draft Strategy. All of the Councils decided to adopt the Draft Strategy at their meetings in April or May 2009. The Councils also decided at their meetings in June 2009 to advise the Department of Planning that each Council supports preparation of a single LEP covering the 4 local government areas. Walcha Council also resolved to reserve the option to prepare a separate LEP. Preparation of a Draft regional LEP will continue during 2009-2010.
Bush Fire	Refer to Section 3.2.3 for activities undertaken by the Rural Fire Service during 2008-2009. **All Councils** ***Bush Fire Prone Land*** Section 146 of the *Environmental Planning and Assessment Act 1979* requires Councils to review their bush fire prone land maps at least every five years. During 2007-2008, a review of the four Council's bush fire prone land maps was commenced in consultation with the RFS New England Zone. Separate up-dated bush fire prone land maps for Armidale Dumaresq, Guyra Shire, Uralla Shire and Walcha Councils were subsequently endorsed by the Commissioner NSW Rural Fire Service during 2008-2009. The up-dated [current] bush fire prone land maps are available for viewing at the respective Councils. ***Bush Fire Risk Management Plan*** In early 2008, the NSW Rural Fire Service New England Zone commenced preparation of a draft Bush Fire Risk Management Plan in consultation with Southern New England Councils and other key stakeholders, such as National Parks and Wildlife Service, Forests NSW and Department of Lands. Community consultation meetings were held in Armidale, Guyra, Uralla and Walcha in March 2008 and the draft plan was placed on public exhibition over January, February and March 2009. The draft plan was subsequently endorsed by the NSW Bush Fire Management Committee on 31 March 2009 and approved by the NSW Bushfire Coordinating Committee on 27 May 2009. The Bush Fire Risk Management Plan is a strategic document that identifies community assets at risk and sets out a five-year program of coordinated multi-agency treatments to reduce the risk of bushfire to those assets.

Extractive Industry	**All Councils** Continue to operate their respective extractive industries (gravel quarries) in accordance with approval conditions
Contaminated Land	**Armidale Dumaresq Council** Armidale Dumaresq Council has commenced a project during 2008-2009 to identify potentially contaminated sites within the former Dumaresq Shire area and incorporate these into Council's existing Information System for Potentially Contaminated Land. It is anticipated that this project will be completed during 2009-2010.
Salinity	**Uralla Shire Council** Uralla Shire Council received funding of $33,000 in 2007-2008 from Border Rivers – Gwydir CMA for a Point Source Salinity Project in Bundarra. The purpose of the project is to assist landholders to remediate their anaerobic septic tank systems where the systems had been inspected and found to operating unsatisfactorily. Implementation of this project commenced and continued during 2008-2009. **Walcha Council** In 2007-2008 it was reported that Walcha Council, in conjunction with the Northern Rivers CMA, Department of Environmental & Climate Change and Southern New England Landcare, were to be involved in a Salinity Strategy Enhancement Program. No further details of this project were available for this report.

3.3.3 Community and Government Agency Actions

Border Rivers – Gwydir Catchment Management Authority
During 2008-2009 the Border Rivers – Gwydir Catchment Management Authority worked with landholders across the local government areas of Armidale Dumaresq, Guyra and Uralla to complete a number of projects. The projects, outlined below, have been grouped together based on common activities and have delivered the following environmental outcomes:

- 118 hectares of native vegetation are being managed for conservation
- 40 hectares of new native vegetation have been established
- 3 kilometres of stream has been fenced to reduce river bank erosion and improve water quality
- 104 hectares of wetland has been protected through improved management;
- 180 hectares have benefited from improved management practices that improve the ability of landholders to withstand the impacts of drought and climate change;
- 410 hectares have been fenced so landholders can manage according to land capability, resulting in improvements in soil health; and
- Racecourse Lagoon at Uralla has been protected through a project that combines feral animal and weed removal, fencing and the erection of interpretive signs.

Additionally, the CMA has held five workshops addressing the issues of environmental education, river management, soil carbon, soils and groundcover, and property planning.

Southern New England Landcare / Northern Rivers Catchment Management Authority

Southern New England Landcare continue to be active in the Region in terms of land management and conservation projects. A summary of their activities across the Southern New England Region during 2008-2009 are contained in Appendix H. The summary of activities in Appendix H includes projects undertaken and funded through the Northern Rivers Catchment Management Authority.

SECTION 4 – AIR AND CLIMATE CHANGE

4.1 INTRODUCTION

The Southern New England Region generally experiences a high level of air quality and relatively low occurrences of atmospheric pollution, due mainly to limited urban development and the presence of few polluting industries. However despite this, isolated air quality issues do still exist, such as wood smoke pollution in Armidale, which are discussed below.

4.2 THE STATE OF AIR IN THE REGION

The following indicators have been established to monitor the state, or condition, of air and the atmosphere within the Southern New England Tablelands Region. This section provides an up-date on the indicators for 2008-2009 and outlines any significant trends.

4.2.1 Environment Protection Licences

There are twelve (12) premises in the Southern New England Region that have environment protection licences issued under Section 55 of the *Protection of the Environment Operations Act 1997* with conditions relating to air discharge or air quality.

The following Table identifies the premises with licence conditions relating to air and any incidents of non-compliance with licence conditions for annual licence returns submitted during 2008-2009.

Table 9: Compliance with Environment Protection Licence Conditions Relating to Air Quality

Licence No.	Activity (Licensee)	Compliance with Licence Conditions
Armidale Dumaresq LGA		
5860	Waste Management Facility (Armidale Dumaresq Council)	complied
1722	Sewage Treatment Plant (Armidale Dumaresq Council)	complied
11319	Armidale Hospital (Hunter New England Health Service)	no longer in force
921	Hillgrove Mine (Straits (Hillgrove) Gold Pty Ltd	complied
12481	Metz Quarry (Boral Resources)	complied

3556	Wardlaw Piggery (Ross Wardlaw)	computer problems / issues following power failures have resulted in an incomplete weather data set
Guyra LGA		
11792	Guyra Quarry (Inverell Aggregate Supplies)	complied
1671	Guyra Waste Water Treatment Plant (Guyra Shire Council)	complied
Uralla LGA		
5899	Landfill (Uralla Shire Council)	complied
1626	Uralla Sewage Treatment Plant (Uralla Shire Council)	complied
Walcha LGA		
6120	Waste Depot (Walcha Council)	complied
5572	Boral Timber Mill (Allen Taylor & Company Pty Ltd)	complied
2613	Walcha Sewage Treatment Plant (Walcha Council)	complied

There were no reported incidences of non-compliance with air quality conditions in relation to annual returns for environmental protection licences in force across the Southern New England Region during 2008-2009. Details of all annual returns were not available for the 2007-2008 State of the Environment Report, however, subsequent searches have also found no reported incidences of non-compliance with licence conditions occurred during this period.

4.2.2 Complaints Register

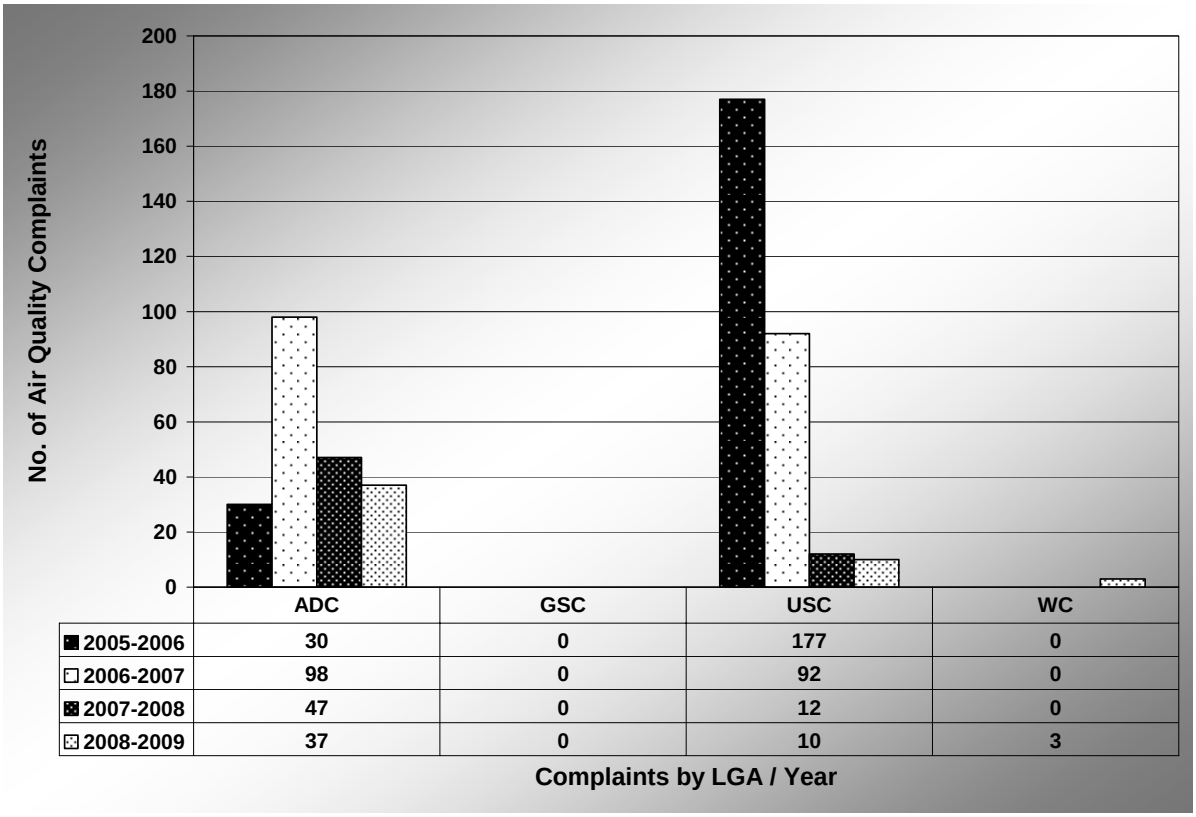
During 2008-2009 Armidale Dumaresq Council received thirty-seven (37) air quality complaints. Complaints regarding smoke from domestic wood heaters or odour were the source of most complaints, accounting for seventeen (17) complaints each, while three (3) complaints were received in relation to dust. The level of recorded complaints received in 2008-2009 is less than the previous two years as shown below in Figure 13 and Table 10.

Wood smoke pollution in Armidale continues to generate resident complaints, however, the overall number of complaints in recent years appears to be decreasing. Further details relating to wood smoke, including monitoring and actions undertaken by Council, are outlined below.

Guyra Shire Council has not received any complaints relating to air quality or air pollution over the past four (4) reporting periods. Walcha Council has only received three (3) dust complaints (2008-2009) over the same period.

Uralla Shire Council received nine (9) odour complaints and one (1) dust complaint during 2008-2009, which also represents a reduction in the level of resident complaints compared to previous years, as shown below.

Figure 13: **Air Quality Complaints Received By Councils in the Southern New England Region**



The following Table indicates the nature of complaints and the corresponding number of complaints that were received by the respective Councils over the last four (4) reporting periods.

Table 10: **Number of Air Complaints by Type by LGA**

	ADC				GSC	USC				WC	
	05-06	06-07	07-08	08-09	05-09	05-06	06-07	07-08	08-09	05-08	08-09
odour	30	3	9	17	nil	117	89	12	9	nil	-
smoke		95	31	17			3	-	-		-
dust		-	6	3			-	-	1		3
other		-	1*	-			-	-	-		-

*complaint related to asbestos

4.2.3 Transport

People within the Southern New England Region remain reliant on motor vehicles as the primary mode of transport due to factors such as distance between urban centres and limited public transport.

The number of registered vehicles in the Region continues to increase annually, as shown below in Figures 14 and 15. For the 12 month period to 30 June 2009, there were 983 more registered vehicles across the Region area than the previous 12 month period. The increase in registered vehicles during 2008-2009 is similar to the additional number of registered vehicles for the previous reporting period, which saw

an increase of 905 over 2007-2008. Although no figures on pollutants associated with or emitted by motor vehicles are available, the trend of increasing vehicle numbers suggests that resulting air pollution and emissions would also be increasing.

The data provided in Figures 14 and 15 are estimates based on the count of registered vehicles by postcode of the garaging address. Registered vehicle types include passenger vehicles, off-road passenger vehicles, people movers, small bus, bus, mobile home, motor cycle, scooter, light truck, heavy truck, prime mover, light plant, heavy plant, small trailer and trailers (NSW Roads and Traffic Authority, 2009).

Figure 14: **Number of Registered Vehicles by LGA**
Source: NSW Roads and Traffic Authority (www.rta.nsw.gov.au)

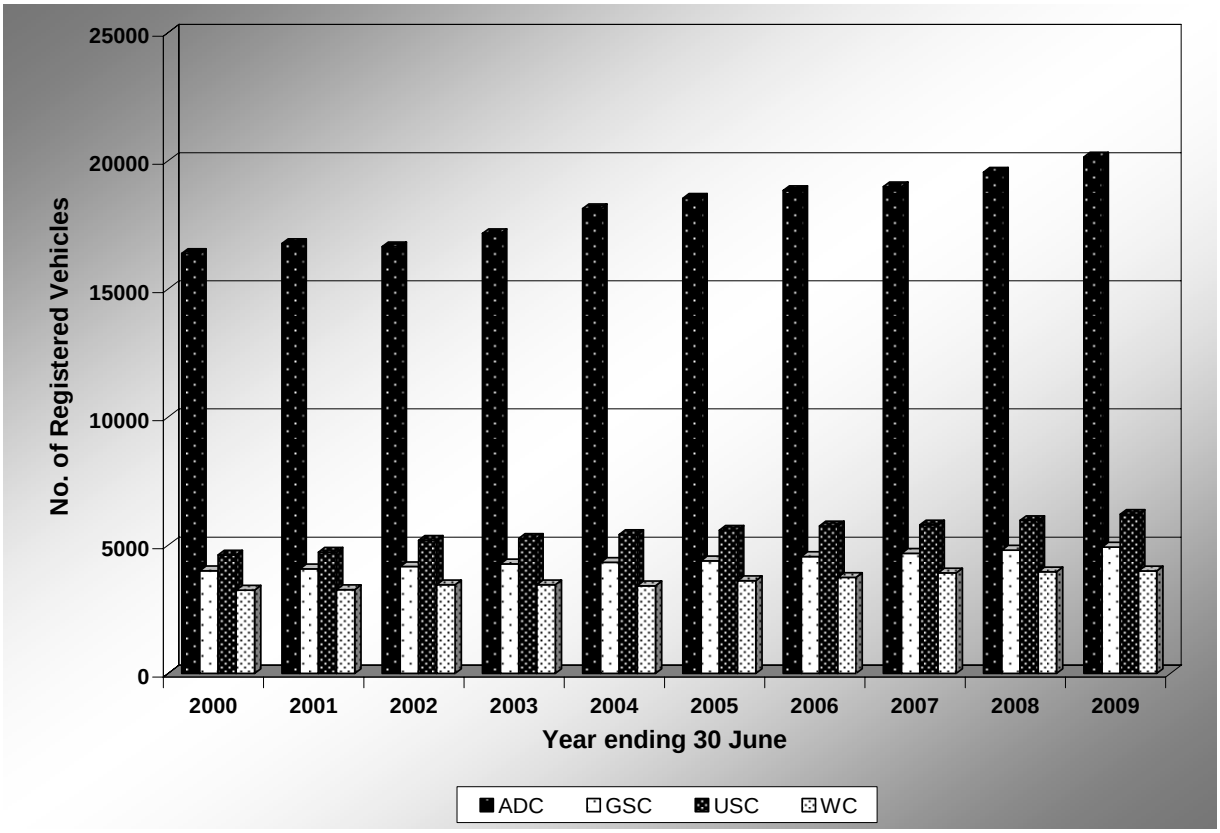
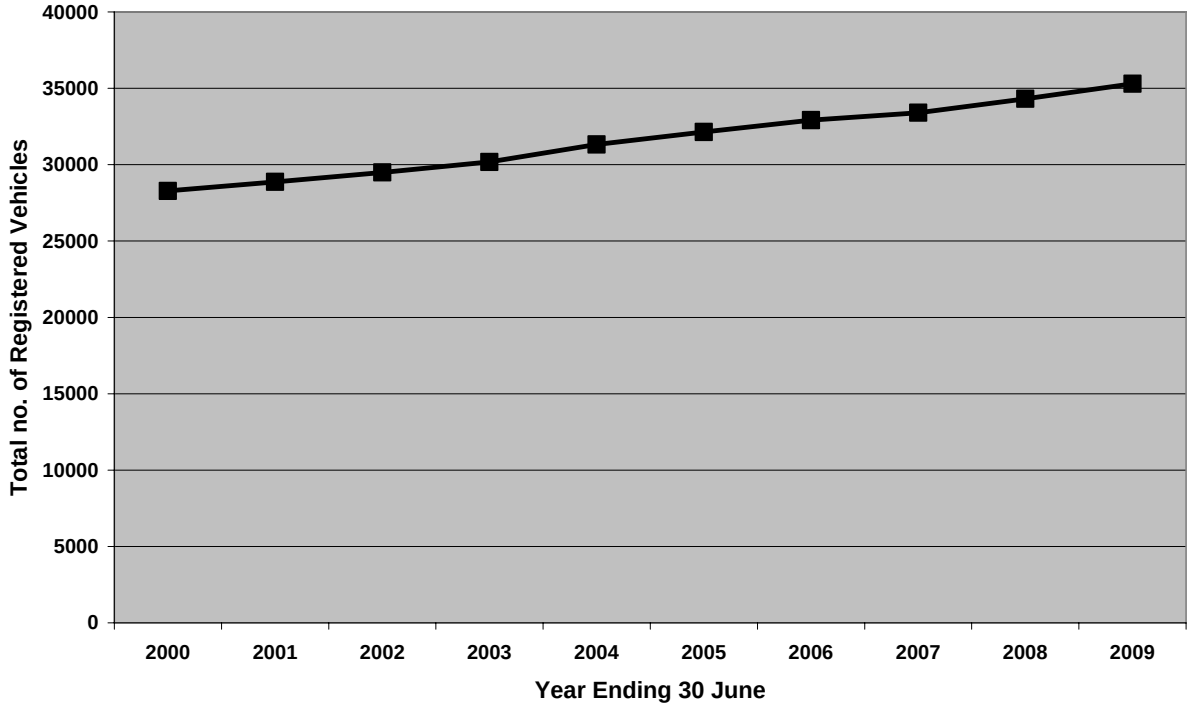


Figure 15: **Total Number of Registered Vehicles Across Southern New England Region**
Source: NSW Roads and Traffic Authority (www.rta.nsw.gov.au)



4.2.4 Road Sealing Program

Unsealed roads have the potential to contribute to air pollution through dust generated by vehicles using these roads. Council road sealing programs help to reduce dust generation. Table 11 outlines the number of kilometres of roads that have been sealed across the Southern New England Region by local government area from 2005-2006 to 2008-2009.

Table 11: **Road Sealing (km) per LGA by Year**

	ADC	GSC	USC	WC	Region (total km)
2005-2006					10.91
2006-2007	0.31	-	3.85	3.24	7.4
2007-2008	2.4	1.58	4.1	-	8.08
2008-2009	2.2	0.14	0.9	2.2	5.44

4.2.5 Air Quality Monitoring

Guyra Shire Council, Uralla Shire Council and Walcha Council did not undertake any air quality monitoring during the 2008-2009 reporting period. Other than an environmental audit of the Phoenix Foundry at Uralla during 2006-2007, no other air quality monitoring has been undertaken by the Councils during the 2006-2007 to 2008-2009 reporting periods.

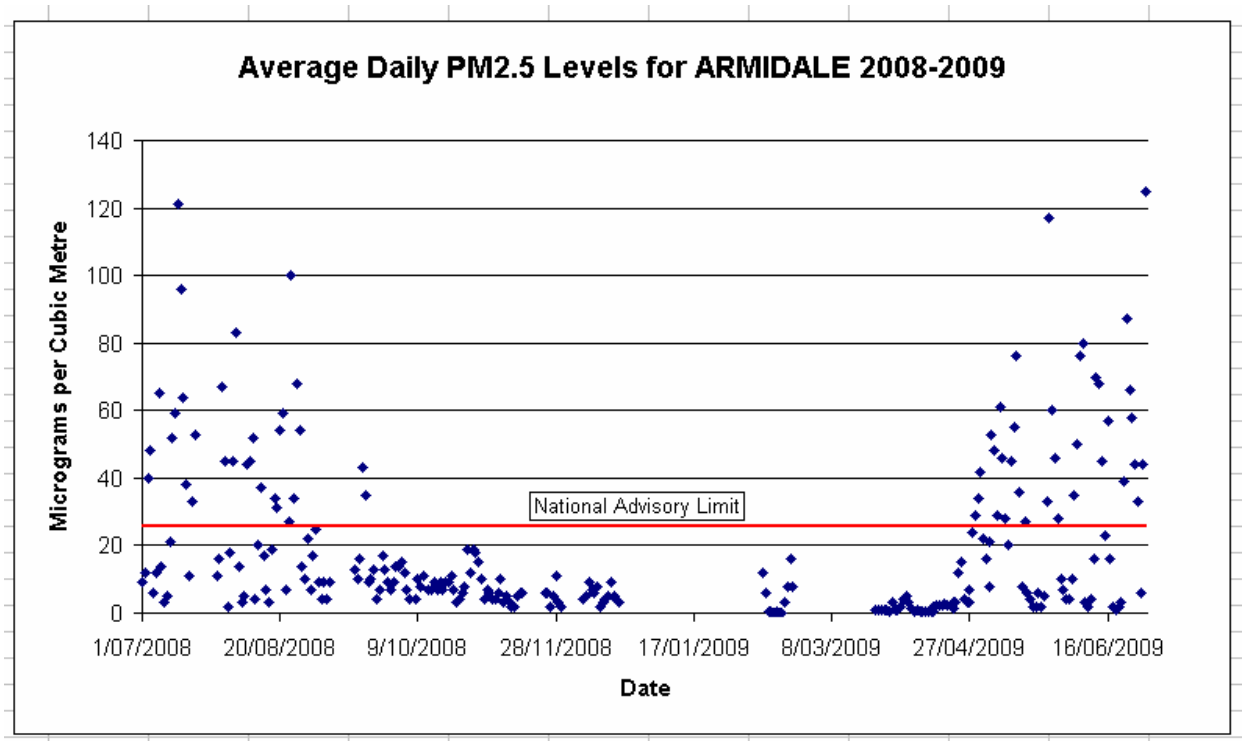
The absence of air quality monitoring by Guyra Shire, Uralla Shire and Walcha Councils is consistent with the relatively low number of complaints received by the Councils relating to air quality or air pollution issues.

Air quality monitoring has been undertaken by Armidale Dumaresq Council during 2008-2009 in relation to wood smoke pollution from domestic wood heaters. Further details relating specifically to wood smoke issues in Armidale are discussed below.

4.2.6 Monitoring of Wood Smoke in Armidale

Monitoring was undertaken by Armidale Dumaresq Council using a portable DustTrak™ Aerosol Monitor (model 8520) which samples air from Council's Civic Administration building roof every five minutes. The monitoring equipment samples for particulate matter measuring 2.5 micrometres. This represents the fine particles in the air most damaging to human health. Wood smoke is characterised by these 2.5 micrometre particles and is reported in micrograms per cubic metre (PM2.5 concentration).

Figure 16: **Scattergram showing daily average measurements of concentration of 2.5 micrometre particles for the period July 2008 – June 2009 inclusive (micrograms per cubic metre)**



The scattergram above indicates an expected rise in pollution concentrations over the winter months. However, it also shows considerable daily variances in levels. The levels exceed the National Advisory Limit for PM2.5 on the majority of winter days.

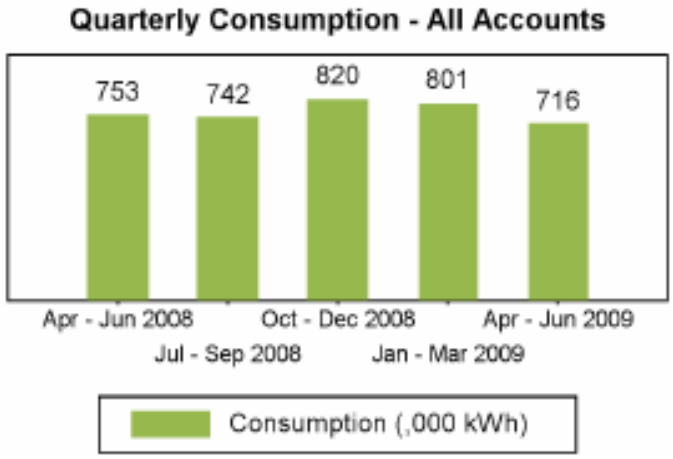
DustTrak™ monitoring results have so far only been collected for the 2008-2009 reporting year. Identifiable patterns and trends of air quality are not expected for several years.

4.2.7 Energy Consumption

Armidale Dumaresq Council
Armidale Dumaresq Council engaged the services of Planet Footprint Pty Ltd during 2008-2009 to provide reports on the performance of Council's operations in terms of energy and water usage.

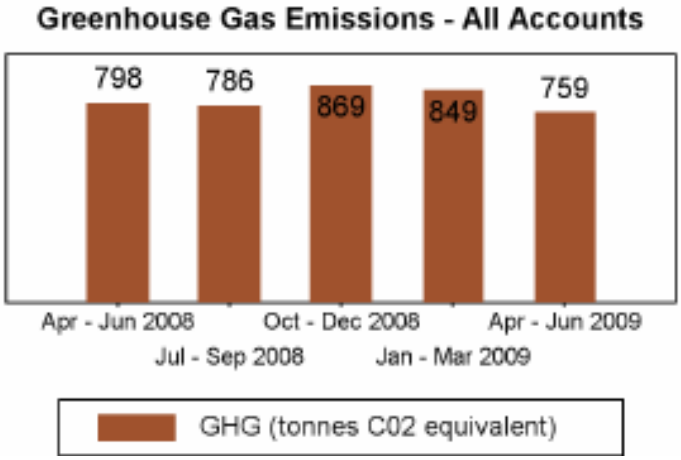
Energy reports from Planet Footprint Pty Ltd provide details of electricity usage for overall Council operations (excluding street lighting) and street lighting separately. The following Figures are taken from the Planet Footprint reports for 2008-2009 and provide a summary of energy use and corresponding greenhouse gas emissions for Armidale Dumaresq Council.

Figure 17: **Armidale Dumaresq Council Electricity Consumption in 2008-2009 (excluding street lighting)**



Total annual electricity consumption by Armidale Dumaresq Council (excluding street lighting) has increased from 2,913,000 kWh in 2007-2008 to 3,079,000 kWh in 2008-2009.

Figure 18: **Greenhouse Gas Emissions from Armidale Dumaresq Council Electricity Consumption in 2008-2009 (excluding street lighting)**



Greenhouse Gas Emissions from Armidale Dumaresq Council's electricity consumption has increased from 3088 tonnes CO2 equivalent in 2007-2008 to 3263 tonnes CO2 equivalent in 2008-2009.

It should be noted that amount shown for the April-June quarter in both the above Figures are 60% complete (i.e. 40% has been estimated).

Figure 19: **Comparative Quarterly Energy Consumption for Street Lighting in Armidale Dumaresq LGA**

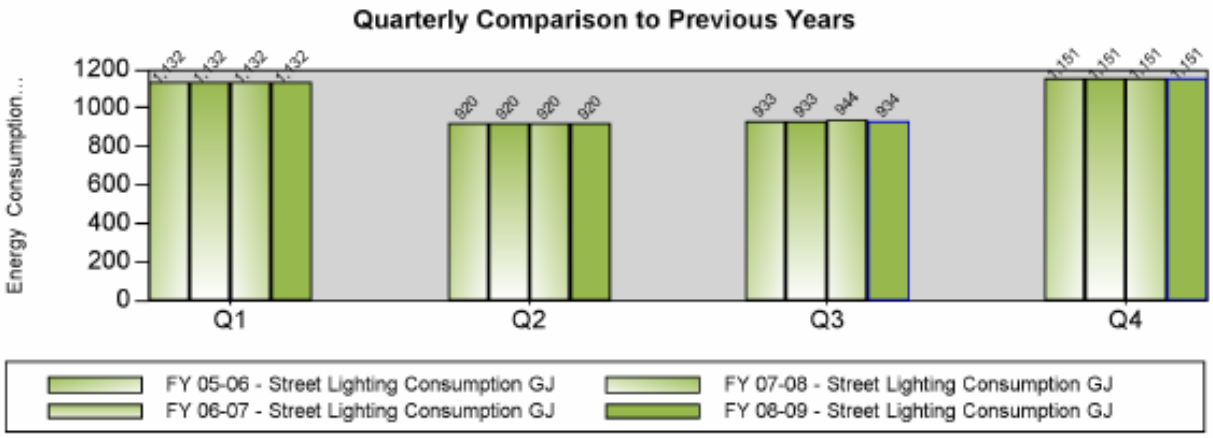
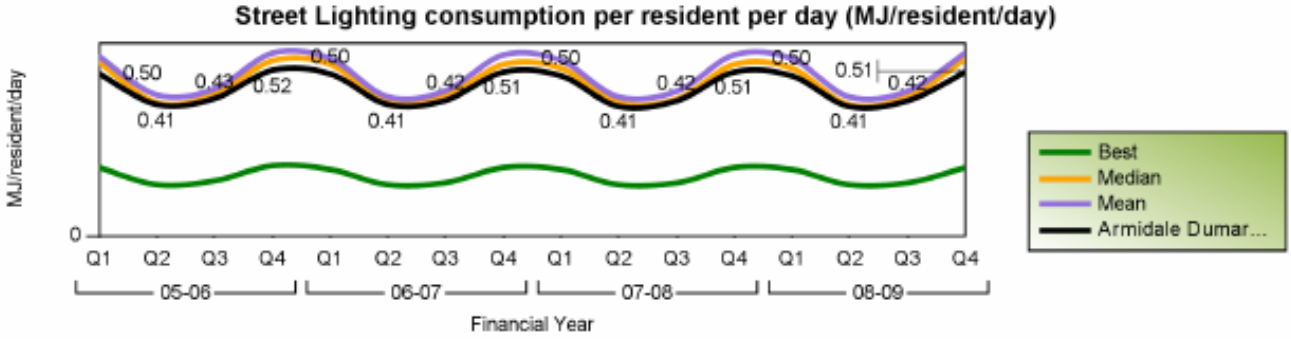


Figure 20: **Street Lighting Energy Consumption - Comparative Data**



Comparative data in Figure 20 shows Armidale Dumaresq Councils energy consumption for street lighting against 100 other Australian Councils that also subscribe to services of Planet Footprint Pty Ltd.

Guyra Shire Council
<< *DATA GAP* >> Council does not have any data available regarding its energy use.

Uralla Shire Council
Uralla Shire Council does not have data for previous years but is in the process of auditing its energy use for 2009-2010-2011.

Walcha Council
Walcha Council does not have definitive data for its energy use, but estimates its annual electricity usage to be in the order of 400MWh

4.2.8 Climate Change

Details regarding the forecast impacts of climate change have been developed by NSW government agencies and the University of NSW, and published by the NSW Department of Environment and Climate Change. A copy of the NSW Government's interim findings, including an assessment of regional biophysical impacts on El Nino / Southern Oscillation, fire, biodiversity, soils, floods and hydrological change are reproduced in Appendix I.

During 2008-2009 the four Councils of the Southern New England Region were involved in various projects with a focus towards climate change and its potential impacts on the local environment and its people. These projects include the Local Adaptation Pathway Project, Climate Consensus Project and development of a New England Sustainability Strategy. Further details relating to these projects are outlined in Section 1.6 of this Report.

4.3 AIR QUALITY ISSUES AND ACTIONS

4.3.1 Air Quality Issues

The primary issues and activities creating pressure on air quality and the atmosphere within the Southern New England Region are broadly identified as:

- particulate matter (e.g. wood smoke, bushfires, dust)
- odour
- greenhouse gas emissions

4.3.2 Issues Identified in Public Submissions

Sustainable Living Armidale (SLA) is a community based organisation that started in May 2007 and Transition Armidale (TA) was set up in March 2008. The two entities merged in August 2008 and operated as an unincorporated association until incorporation at an inaugural AGM in July 2009. Issues relating to transport and climate change that have been identified by SLA include:

Peak Oil
A primary focus for SLA is the issue of the impact of peak oil on this community and the urgent need for oil vulnerability planning, including the impact on food security and transport. SLA see the need for, and would welcome the opportunity to join with Council in addressing this issue and pursuing an energy descent action plan.

Climate Change
SLA appreciates that Council has undertaken studies to assess its vulnerabilities to this issue, and has been pro-active in some areas, however, SLA believes this is an issue that requires dedicated staff positions and a higher level of community engagement.

4.3.3 Council Actions to Address Air Quality Issues

The following section provides a summary of actions that were being implemented by each of the Councils during 2008-2009 in response to pressures identified in Part 4.3.1.

AIR QUALITY ACTIONS IN 2008-2009	
Particulate Matter	**Armidale Dumaresq Council** • education campaigns to address wood smoke: Education material (including best practise information for storage and burning, and an instructional DVD) given to households identified as being excessively smoky (via complaints/observations). Weekly publications in the Armidale News section of the local press of daily average PM2.5 concentrations provide the community with the most recent past week's air quality performance for the city. Council organised a stand and working display of wood heaters, wood and SmartBurn™ devices at the Autumn Festival. Council also presented a special presentation at Sustainable Living Expo on state and local government rebates and energy use, including home heating. • wood fire replacement program: 12 solid fuel heaters replaced in conjunction with 2008-2009 rebate program ($500 rebate for each wood heater removed). The vast majority of replacements were for gas heater and reverse cycle air-conditioning installations. • other actions to address wood smoke: Council actively promoted the accreditation of local wood suppliers with the Australian Firewood Association. Council is an active financial and operational partner in the ARC Linkage Project with the University of New England which is investigating the effectiveness of the use of SmartBurn™ and community education in reducing wood smoke emissions. Regular convening of the Domestic Energy Working Party dealing with the wider issues of wood smoke and energy use in the home. This party makes recommendations for the General Meetings of Council, regarding policy, incentives and other measures. • response to complaints Of the total number of complaints (37), 60% were responded to within 24 hours, 14% were responded to within 48 hours and 26% took longer to respond to (up to 3 weeks due to resourcing/priority/risk). Each of these complaints triggered on-site inspection and assessment. Relevant parties were engaged verbally and the complaints were resolved (Note: some wood smoke complaints took some follow-up actions to address the immediate complaint).

Odour	**All Councils** Council operations with environment protection licences are conducted to comply with licence conditions **Armidale Dumaresq Council** response to complaints (as above) **Uralla Shire Council** In response to odour complaints, staff inspected all incidents and notified the purported source. No further action was needed in relation to these matters.
Greenhouse Gas Emissions	**All Councils** Involvement in climate change related projects (see Section 1.6 for further details): - Local Adaptation Pathway Project - Climate Consensus Project **Armidale Dumaresq Council** Council continued its subscription to Planet Footprint for quarterly reports on water consumption and electricity usage. *Armidale Sustainable Living Expo* The Armidale Sustainable Living Expo was again conducted in September 2008 and included tours showcasing a range of innovative and inspired buildings and gardens with a sustainable focus, the Sustainable Living Expo and community workshops. **Guyra Shire Council** Council has installed a solar system to heat its Civic Centre. Council has State Government rebate Application forms available for collection from customer service staff and information on the rebates available to the public. **Uralla Shire Council** Uralla Shire Council has commenced a process of auditing its energy use for 2009-2010-2011. **Walcha Council** Council provide applications and assistance to residents to complete rebate applications.

Transport	**Armidale Dumaresq Council** During 2008-2009 Armidale Dumaresq Council constructed approximately 850 metres of off-road shared pedestrian/bicycle path alongside Rockvale Road, Armidale. This was surfaced with asphaltic concrete (AC), which provides a smoother ride and greater longevity than a bitumen aggregate finish. The path was identified as a priority route within the Armidale Dumaresq Bicycle Strategy (2004). It completed the final 'missing link' of Armidale's principal bicycle route, which now provides a continuous 14 kilometre length of off-road shared bicycle/pedestrian path. This path links significant residential areas with the CBD, University of New England and the Armidale State Forest. Council's Bicycle Steering Committee considered options for a bicycle network in eastern Armidale to be constructed in conjunction with future residential development of the area. Following identification of preferred options / routes and endorsement by Council, the proposal was placed on public exhibition during 2008-2009. **Guyra Shire Council** 163 metres of new footpath was constructed along Guyra Rd, Tingha as part of Council's Pedestrian Access and Mobility Plan. **Walcha Council** Council's current policy for fleet vehicle change-over allows for preference for fuel efficient 4 cylinder vehicles or diesel fuelled for utilities and larger wagons.

4.3.4 Energy Saving Initiatives / Rebates

Various government initiatives have been in place during 2008-2009 allowing land holders the opportunity to obtain funding, usually in the form of rebates, to improve the environmental performance of buildings. Below is a brief outline of some of these initiatives.

New England Sustainability Strategy – Solar New England Project
The Solar New England Project was the first major initiative coming out of the New England Sustainability Strategy and was conducted during 2008-2009. The project was based on a proposal from AusEnergy to consider a community cluster solar installation project.

A 'community cluster' model means:

- "clusters" of solar systems are purchased and installed together to achieve large scale, highly affordable domestic solar power systems; and,
- "community" networks, organisations and professionals work together to promote the project by word of mouth and contribute key services making the end product to householders highly affordable.

The program was run to coincide with government solar power rebates available at the time of up to $8,000. Installations are still being carried out and details of the final number of systems installed under the program will be available in future reports.

NSW Government's Climate Change Fund

The Residential Rebate Program is part of the NSW Government's Climate Change Fund, established to help people make their homes more water and energy efficient. It provides rebates for rainwater tanks, climate-friendly hot water systems and water-efficient washing machines. The ceiling insulation rebate, which was also part of the Program, finished on 30 June 2009 (www.environment.nsw.gov.au).

Hot Water System Rebates:

Water heating is the biggest energy user in NSW homes. By switching from an electric to a climate-friendly hot water system, you can save up to three tonnes of greenhouse gas emissions each year and $300 on your energy bills. The rebate (up to $1,200) is available for new gas, solar or heat pump hot water systems which replace an electric system (www.environment.nsw.gov.au).

The uptake of hot water system rebates across the Southern New England Region by local government area is shown below:

	ADC	GSC	USC	WC
No. of rebates to 30 June 2009	73	15	29	7

Ceiling Insulation Rebates:

The ceiling insulation rebate program started on 1 October 2007 and finished on 30 June 2009. The uptake of ceiling insulation rebates by local government area to 30 June 2009 is shown below

	ADC	GSC	USC	WC
No. of rebates to 30 June 2009	54	7	11	2

Details relating to rebates for rain water tanks and water efficient washing machines are outlined in Section 5.

Australian Government's Energy Efficient Homes Package

The Australian Government's Energy Efficient Homes Package, administered by the Department of Environment, Water, Heritage and the Arts, aims to install ceiling insulation in many Australian homes and help up to 420,000 households install a solar hot water system.

The non-means tested package includes:

- ceiling insulation worth up to $1,600 for Australian house holders, including owner-occupiers, landlords and tenants of currently uninsulated homes or homes with very little ceiling insulation; or
- a $1,600 rebate for installing a solar hot water system or a $1,000 rebate for installing a heat pump hot water system**,** to replace an electric storage hot water system.

Only one rebate can be claimed per address under the current program. *<<DATA GAP>>* No data is available on the uptake of rebates under this program.

Solar Homes and Communities Plan
The Solar Homes and Communities Plan started helping Australian homes and communities reduce their energy use, help the environment and save on energy bills in 2000. Since November 2007, the program has provided rebates of up to $8,000 for the installation of solar photovoltaic systems.

Statistics provided by the Department of the Environment, Water, Heritage and the Arts indicate that during 2008-2009, 78 solar systems were installed in Armidale Dumaresq, 5 in Guyra, 3 in Uralla and 1 in the Walcha local government area under the Solar Homes and Communities Plan.

4.3.5 Community Actions

Sustainable Living Armidale (SLA)
From July 2008 to June 2009, SLA held 11 monthly public forums with speakers or films related to various aspects of sustainability. Attendances varied from 20 to 85:

July	Energy, carbon trading and Council Waste Management plans for plastic bags
Aug	power point presentation on Transition Armidale
Sept	Film: End of Suburbia
Oct	Woodsmoke emissions
Nov	Permaculture
Dec	end of year picnic on verandah
Feb	accessing local food, Environmental Trust grant to NESAC, Solarshop on hot water; forthcoming farm open day
Mar	Food as Medicine; ideas for Autumn Festival SLA Float
April	Film: Blind Spot
May	Solar Hot water
June	Film: The Future Makers

Home-Grown Garden Tour (7-8 March)
Organised by Armidale Local Food (ALF). An estimated 250 people toured 10 local suburban productive gardens. The gardens presented a range of features including vegetable and fruit growing, chooks, bees, water use, energy use, composting, and preserving/drying.

Autumn Festival
SLA's float, featuring a carbon footprint and ideas for reducing carbon emissions, was awarded the Best Community float in the Autumn Festival Parade and was seen by a large crowd. There was also a stall with a display of a wide variety of locally grown food.

Participation in Sustainable Living Expo 2008

Monthly Information Stall in Mall Markets
Each month, the SLA stall featured a different aspect of sustainability e.g. solar hot water, bottled water, green loans, peak oil.

Submissions to State & Federal Government
SLA made a detailed submission to the Federal Government on their White Paper on "A Carbon Emissions Reduction Scheme" and a detailed submission to the NSW Government on their Proposed Feed-In Tariff for solar electricity.

SECTION 5 – WATER

5.1 INTRODUCTION

The Southern New England Region straddles the watershed of the Great Dividing Range and includes parts of five major river catchments. The Clarence River, Macleay River and Manning River catchments drain to the east and the Gwydir River and Namoi River catchments drain to the west.

The main issues for surface water relate to influences on water quality and river health in the waterways that pass through urban centres or provide drinking water. These waterways include Dumaresq Creek, Uralla Creek, Gara River and the Apsley River.

5.2 THE CONDITION OF WATER IN THE REGION

The environmental indicators outlined below have been used in previous State of Environment Reports to assess and monitor the state, or condition of the environment with respect to water. Periodic monitoring of water quality is one of the main measures used for determining the state of water resources within the Southern New England Region. The following section provides up-dated data for the respective environmental indicators for 2008-2009, including a summary of key water quality monitoring results from testing undertaken by Councils for Dumaresq Creek, Malpas Dam and the Apsley River, and outlines any significant trends.

5.2.1 Water Quality Monitoring – Dumaresq Creek

Armidale Dumaresq Council continues to conduct water sampling of Dumaresq Creek within the Armidale urban area. Table 12 outlines a summary of water monitoring results for Dumaresq Creek from 2005 to 2008-2009. Compared to the period since 2005, water quality in Dumaresq Creek has improved slightly. Dissolved Oxygen levels are slightly higher on average and Thermotolerant Coliform counts were lower in 2008-2009 than in the preceding four years.

Table 12: Summary of Water Monitoring Results for Dumaresq Creek in Armidale

Site	Period	Average Recording During Time Period					
		Colour	Turbid-ity (NTU)	pH	Dissolved Oxygen (mg/L)	Temp (^{o}C)	Thermotole-rant coliforms cfu/100mls
Dumaresq Dam	Jan 05 – Jun 08	62.4	7.6	8.2	7.6	18.1	51.2
	Jul 08 – Jun 09	66.5	7.3	8.1	7.3	18.1	27.3
Niagara St crossing	Jan 05 – Jun 08	136.2	13.5	7.3	2.8	14.8	137.1
	Jul 08 – Jun 09	110.3	12.3	7.4	3.8	15.8	121.0
Upstream of Stephens Bridge	Jan 05 – Jun 08	126.0	10.6	7.6	4.5	15.9	180.8
	Jul 08 – Jun 09	104.8	7.2	7.7	5.1	15.2	135.5

Downstream of Stephens Bridge	Jan 05 – Jun 08	133.6	11.0	7.6	4.3	16.0	212.7
	Jul 08 – Jun 09	100.4	7.1	7.7	5.4	15.1	178.6
Taylor St crossing	Jan 05 – Jun 08	136.8	11.3	7.9	4.6	17.2	215.2
	Jul 08 – Jun 09	106.6	8.0	7.7	5.4	14.7	149.2
Cookes Rd crossing	Jan 05 – Jun 08	82.8	6.6	7.8	5.6	16.3	131.2
	Jul 08 – Jun 09	83.3	5.7	8.0	6.1	14.9	94.8

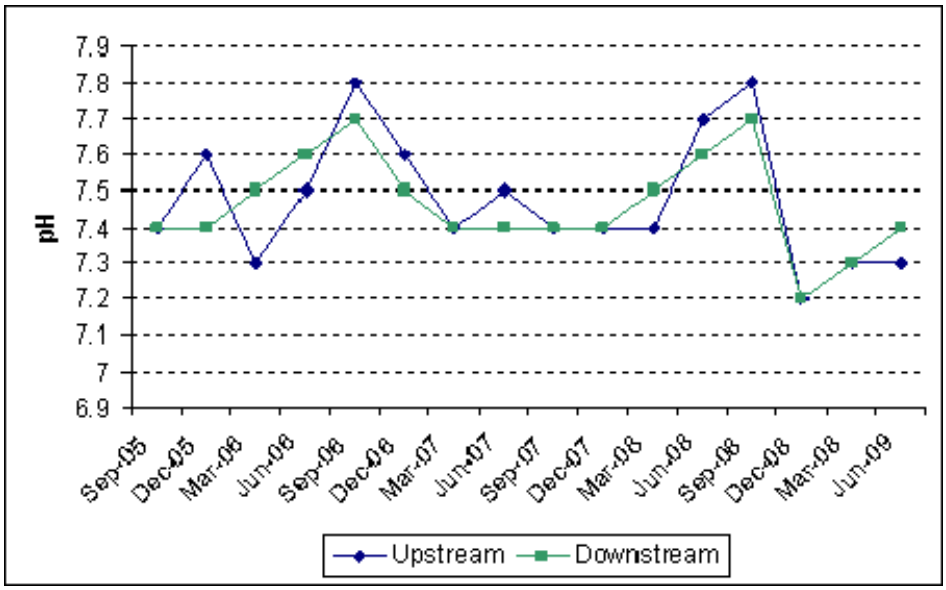
5.2.2 Water Quality Monitoring – Apsley River

Walcha Council undertakes quarterly water quality monitoring at two sites along the Apsley River. One site is located upstream and the other downstream of Walcha township in order to determine the type and level of pollution, if any, that may be generated from the Walcha urban area.

pH

Optimal pH levels for aquatic organisms should be maintained within the range of 6.5 to 8.2. The pH levels within the Apsley River, both up-stream and down-stream of Walcha have been consistently within this range for the last four reporting periods, as shown below in Figure 21.

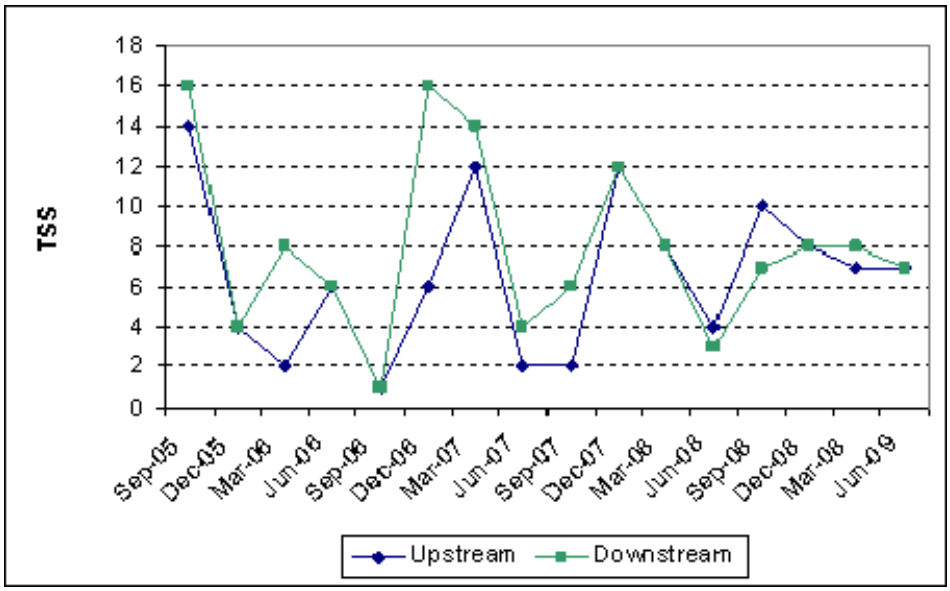
Figure 21: Apsley River pH levels



Total Suspended Solids

Total suspended solids (TSS) have remained at relatively low levels (below 20mg/l) for the reporting periods from 2005-2006 to 2008-2009. Samples up-stream and down-stream tend to follow a similar trend, however downstream measurements are generally slightly elevated. This may indicate that the Walcha urban area contributes to increased TSS levels in the Apsley River.

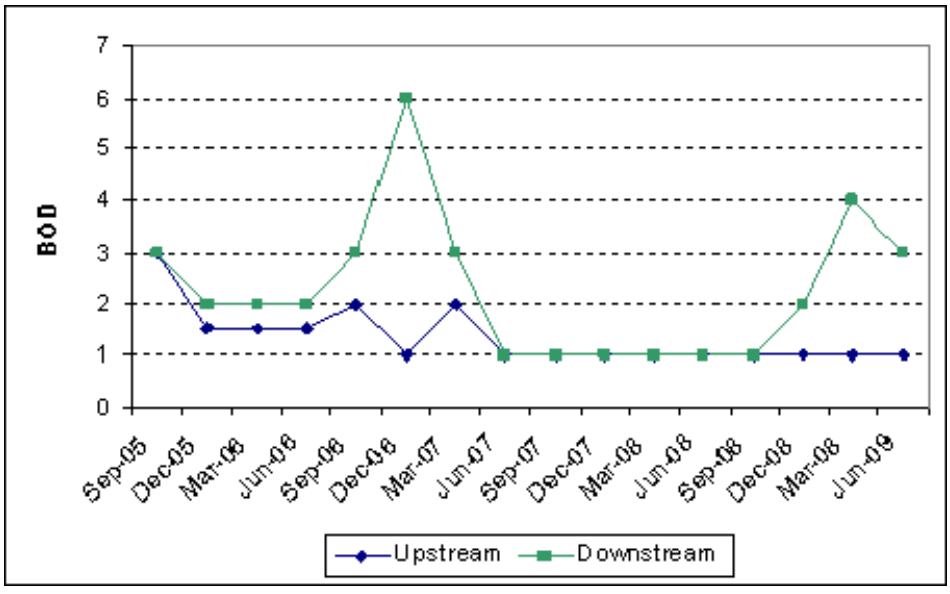
Figure 22: **Apsley River Total Suspended Solid levels**



Biological Oxygen Demand

Biological Oxygen Demand (BOD) levels (mg/l) in the Apsley River up-stream of Walcha have remained at consistently low levels during 2008-2009 indicating that the water is clean with very little biodegradable waste. BOD levels down-stream of Walcha spiked again during the summer months of 2008-2009, similarly to 2006-2007. While there is no correlating data to explain the spike, it is likely that Walcha does contribute to increased BOD levels down-stream of the township.

Figure 23: **Apsley River Biological Oxygen Demand**

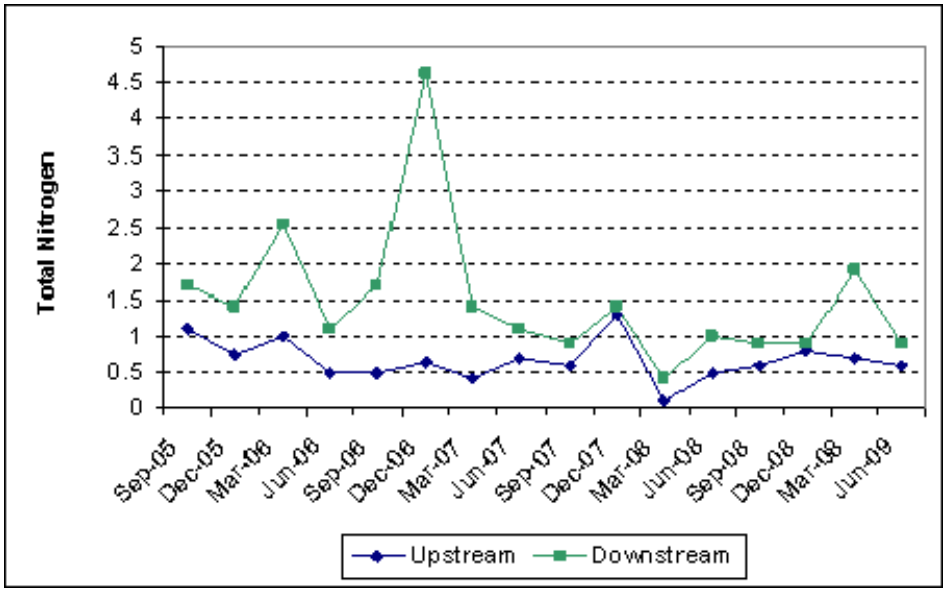


Total Nitrogen

Other than a peak in December 2007, total Nitrogen levels recorded in the Apsley River up-stream and down-stream of Walcha have remained at consistent levels. Similarly to previous years, downstream Total Nitrogen levels tend to be slightly

higher than upstream levels, suggesting that Walcha township may be contributing to increased nitrogen levels in the Apsley River.

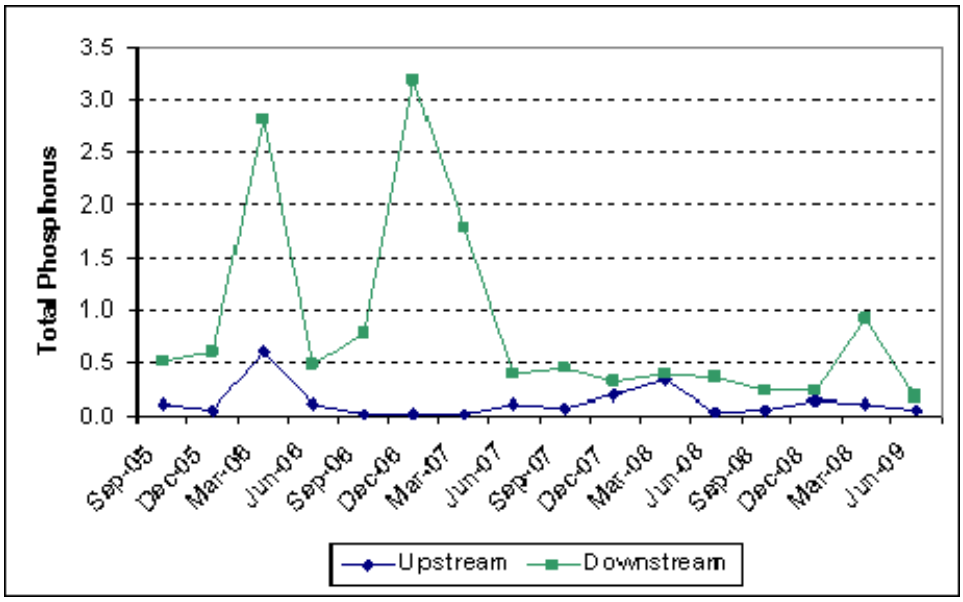
Figure 24: **Apsley River Total Nitrogen levels**



Phosphorus

Total Phosphorus levels in the Apsley River have followed a similar trend to other water quality measures outlined above by being higher down-stream of Walcha compared to up-stream levels, again suggesting that the township impacts on water quality within the river. Total Phosphorus levels down-stream of Walcha spiked during the 2008-2009 reporting period, as in previous years, to levels generally considered to be of concern, however returned closer to trend by the end of the reporting period.

Figure 25: **Apsley River Phosphorus levels**



5.2.3 Water Quality Monitoring – Malpas Dam

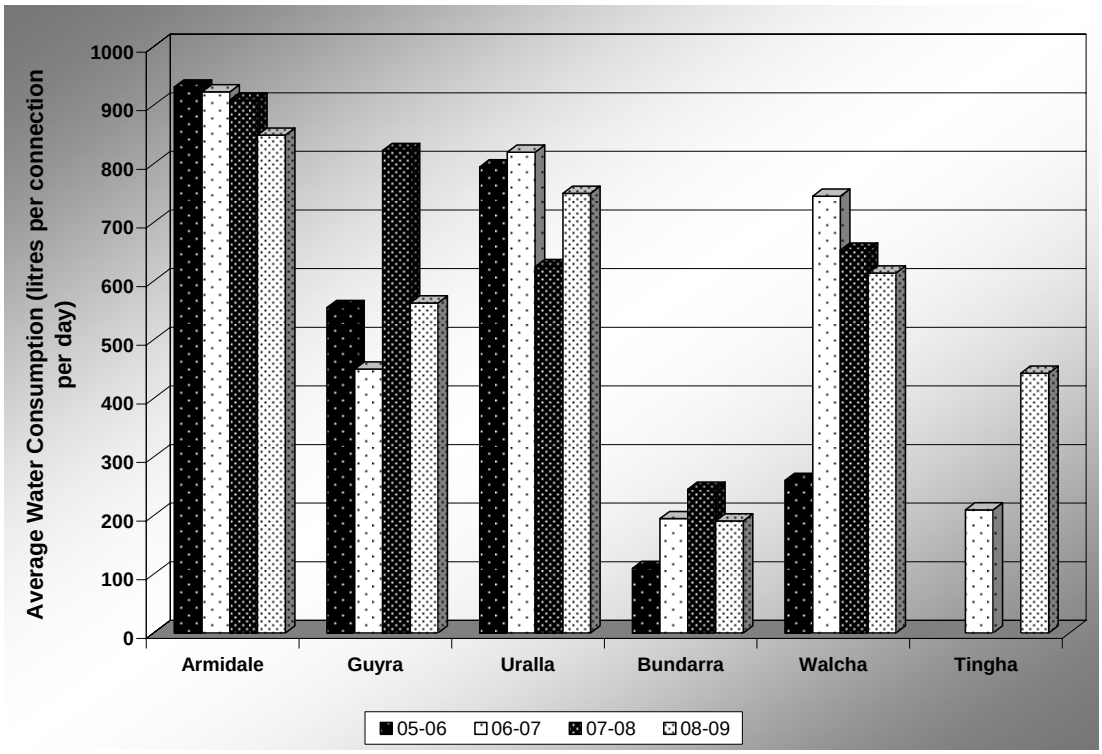
Armidale Dumaresq Council undertakes regular sampling of Malpas Dam which is the primary supply of potable water for Armidale. High levels of blue-green algae have been reported in Malpas Dam since 2006-2007 and continued during 2008-2009, dominated by *Anabaena circinalis* with a short bloom of *Microcystis* species appearing in the summer of 2008-2009. Toxicity testing during 2008-2009 showed no presence of toxins from the blue-green algae. Council has not attempted to apply algaecides to control the algae due to the high cost and also because Council's new ozonation BAC facility at the Water Treatment Plant is effective in removing taste and odour and in destroying algal toxins.

5.2.4 Water Consumption

The consumption of water within the urban environment provides an indication of water conservation and water management practices. It is estimated that the average Australian household uses 650 litres of water per day, with the main use being for watering the garden and other outside uses (35%), flushing toilets (20%, 5-10 litres per flush), showers/bathroom (20%, 200 litres per shower) and washing clothes (15%, 150 litres per load).

Figure 26 shows the average water consumption per connection per day for urban centres within the Southern New England Region. Average water consumption per connection per day has decreased from 2007-2008 to 2008-2009 in Armidale, Guyra, Walcha and Bundarra, while increasing slightly in Uralla.

Figure 26: Average Water Consumption in Southern New England Region Urban Areas



Note: Guyra figures exclude commercial uses such as the Guyra Tomato Farm, which is a large water consumer. Commercial use accounts for approximately 39% of total water consumption in Guyra.

5.2.5 Environment Protection Licences

There are sixteen (16) premises in the Southern New England Region that have environment protection licences issued under Section 55 of the *Protection of the Environment Operations Act 1997* with conditions relating to water.

The following Table outlines the premises with licence conditions relating to water and any incidents of non-compliance with licence conditions for annual licence returns submitted during 2008-2009.

Table 13: **Environment Protection Licences - Water**
Source: www.environment.nsw.gov.au

License Number	Activity / Licensee	Compliance with License Conditions
Armidale Dumaresq local government area		
1722	Sewage Treatment Plant (Armidale Dumaresq Council)	complied
5860	Waste Management Facility (Armidale Dumaresq Council)	complied
921	Hillgrove Gold Mine (Straits (Hillgrove) Gold Pty Ltd)	• exceedance of discharge volume / mass limit at EPL Point 6 (1 incident) • all analytes not determined from EPL Point 24 (1 incident) • all analytes not determined from EPL Point 8 (1 incident)
2821	Water Treatment Plant (Armidale Dumaresq Council)	• not taking required number of samples – no samples taken 24/12/08 for all tests • tests failing or not carried out due to equipment service or failure (8 incidents)
2251	Ebor Trout Hatchery (NSW Department of Primary Industries)	complied
10811	Armidale Saleyards (Armidale Livestock Selling Agents)	complied
5907	Armidale Aquatic Centre (Armidale Dumaresq Council)	complied
3556	Wardlaw Piggery (Ross Wardlaw)	computer problems / issues following power failures have resulted in an incomplete weather data set
Guyra local government area		
5231	Malpas Dam (Armidale Dumaresq Council)	complied

1671	Guyra Waste Water Treatment Plant (Guyra Shire Council)	complied
Uralla local government area		
1629	Uralla Water Treatment Plant (Uralla Shire Council)	complied
1626	Uralla Sewage Treatment Plant (Uralla Shire Council)	high total nitrogen readings due to breakdown of operating systems (2 incidents)
Walcha local government area		
5572	Boral Timber Mill (Allen Taylor & Company Pty Ltd)	monitoring point 4 – no water at monitoring point to gather 6 month samples
2613	Sewage Treatment Works (Walcha Council)	• monitoring point 1 exceeded license concentration limits for pH & TSS. • exceeded license concentration limits for BOD.
6120	Walcha Waste Depot (Walcha Council)	complied
2508	Water Treatment Plant (Walcha Council)	complied

There was an overall increase in the number of non-compliance incidents across the Southern New England Region for environment protection licenses relating to water during 2008-2009 compared to previous years. However, similarly to 2007-2008, the majority of non-compliance incidents related to sampling methodology / conduct, rather than exceeding discharge limits.

5.3 WATER QUALITY ISSUES AND ACTIONS

5.3.1 Pressures on Water and Water Quality in the Environment

The issues and activities identified in previous State of Environment Reports as impacting on water and water quality within the Southern New England Region are:

- urban storm water pollution
- land and waterway management (e.g. riparian areas, point source pollution)
- industry, infrastructure and development
- management of potable water supplies (e.g. blue-green algae blooms, water treatment methods)
- water quantity
- availability of information and resources (lack of community education, specialist technical staff and funding)

The potential for climate change to impact on water and water quality has also been highlighted during 2008-2009 through projects such as Local Adaptation Pathway Program and Climate Consensus Project (see Part 1.6). The Local Adaptation Pathway Program identified the following extreme or high risks relating to water and water quality due to potential climate change in the Region:

- changes in water table – impacts on water quality
- increased algal bloom in water supply
- reduction in non-reticulated water supply for rural / domestic use

- reduction in surface water available for agricultural use
- reduced health of waterways due to sedimentation and eutorophication
- increased flooding in low lying developed areas and extension of flood range
- loss of aquatic ecosystem service / value
- increased risk of dam failure
- inadequate stormwater infrastructure capacity resulting in larger floods
- increased potential for water borne diseases

5.3.2 Council Actions

Each of the Southern New England Region Councils are involved with the management of water, particularly within the urban environment. The following Table provides a summary of the actions that were being implemented by the respective Councils during 2008-2009 in response to pressures identified above.

WATER ACTIONS 2008-2009	
Urban Storm Water	**Armidale Dumaresq Council** Glass Street storm water drainage project valued at approximately $400,000 to up-grade the capacity of storm water infrastructure to reduce the likelihood of flooding of properties in the area during high intensity storms. Council purchased a combination jetting and vacuum truck which has enabled more frequent cleaning of gross pollutant traps around the city. **Guyra Shire Council** 218 metres of storm water infrastructure was upgraded in White Street, Guyra to eliminate minor flooding to residential allotments and roads in the area. **Uralla Shire Council** Aged stormwater pipes were replaced in the urban sub-catchment area of East Street, Uralla to alleviate sediment input into the waterway of Uralla Creek. Council plans to install two further gross pollutant traps in 2010-2011 under the Sub-Catchment Management Project, with further planning for installation of individual catchment baskets in the CBD zone to collect refuse at the point of source prior to discharge. Gross pollutant trap installation is not feasible on the stormwater drain outlets from the CBD into Uralla Creek as these outlets are situated too high from the creek bed and are located within the flood zone. Funding will be sourced to meet the costs of the catchment baskets through the HiCUB project.

Land and Waterway Management

All Councils
Armidale Dumaresq, Guyra Shire, Uralla Shire and Walcha Councils were successful in obtaining a grant of $2 million from the NSW Environmental Trust for Urban Sustainability. This project, called HiCUB (previously known as Biodiversity in High Country) will occur over two and a half years and provide community education, monitoring and evaluation, technical studies and on-ground rehabilitation works across the Region, including riparian restoration works.

Armidale Dumaresq Council
See also Chapter 6 – biodiversity

On-going work by Armidale Urban Rivercare Group (AURG) as part of their riparian restoration works on the urban reaches of Dumaresq Creek includes the removal of woody weeds and on-going control of introduced herbaceous plants such as Wormwood. An increase in support from Council, both financially and in-kind, has seen a corresponding increase in woody weed and herbaceous weed removal with two thirds of the creek passing through the CBD area now under maintenance control. Studies by UNE researcher Dr Darren Ryder on water quality has identified some hot spots that will receive additional efforts by both Council and AURG to remove in-stream willow roots currently causing stream blockages to restore environmental flows. These areas are also identified for tree planting.

By request from New England Weeds Authority, the water level in Gara Dam was lowered during winter 2008 in an effort to kill off the Mexican Lily on the dam by exposing it to frosts. Frosts did kill off the surface vegetation but the succulent roots of the plants survived. Commissioned by the CMA, NEWA and Armidale Dumaresq Council, the University of New England are progressing a project to identify an environmentally safe means of eradicating the Mexican Water Lily.

Uralla Shire Council
Council continued to work closely with Border Rivers – Gwydir CMA, Community Water Grants and Uralla Rivercare Group within the Uralla Sub-Catchment Management Project. Outcomes of on-going work included the completion of a large dam to hold sediment at the headwaters of Uralla Creek, weed removal, planting of native vegetation and maintenance works on Uralla Rivercare Group project sites. The photograph below shows water quality improvement in relation to sediment load during rainfall events pre-dam and post-dam.

Land and Waterway Management (continued)

The Uralla Sub-Catchment Management Project planning document provided recommendations for weed removal, willow control, sediment control and engineering designs from Soil Conservation Services for improvements in water quality and native habitat along the riparian zones within the Uralla urban zone. This project will continue to expand to provide a whole-of-shire plan for the waterways and will greatly contribute to water quality from the headwaters of the Gwydir River.

Council currently has an application for funding with NSW Environmental Trust to sample and collate results from the Kentucky Creek catchment area, which will lead to further sampling programs and appropriate remediation programs as required.

The Uralla Rivercare Group was supported by Council and Green Corps Team with removal of exotic weeds (privet, honeysuckle, blackberry, willow and mint weed) and planting of 800 native trees, shrubs and grasses on some of their project sites. Council also now provides maintenance support on some of the public land previously under the Rivercare Group's control.

Uralla Shire Council has also identified the need for comprehensive water sampling of Uralla Creek.

Walcha Council

The NAMOI Regional Organisation of Councils project, "Green is the New Black" received a grant of $1,998,000 which will include some improvements in the riparian zone. A business Plan is currently being developed for the project.

Industry, Infrastructure and Development	**Armidale Dumaresq Council** In April 2009, Council adopted amendments to Development Control Plan 2007 which included the introduction of requirements / guidelines for on-site detention of storm water run-off and water sensitive urban design in Chapter B7 – Stormwater Drainage Code. Council has produced 'Draft Guidelines for Revegetation of the Urban Reaches of Dumaresq Creek' outlining the value that revegetation work and woody weed removal may have as contributing factors to increased water quality. These include re-establishment of environmental flows by removal of introduced in-stream woody vegetation and increased filtration of sports field and parkland run-off through areas of re-established native plants. **Uralla Shire Council** Data previously used from sampling taken of areas abutting Blackfellows Gully / Teatree Creek in the Invergowrie area led to the Development Control Plan being amended. Subsequently only allowing aerated septic tank systems or systems producing effluent by-product of a similar or higher standard.
Management of Potable Water Supplies	**Armidale Dumaresq Council** Council has an adopted Demand Management Plan which includes an Inclining Block Tariff whereby higher water consumption is charged at higher unit rates. There has been a steady but slowing decline in raw water treated since 2003 and a downward trend in metered water usage of about 1-2% pa since 2002. In May 2009, Council commissioned its $4.2 million Ozonation plant with Biologically Activated Carbon filters at the Armidale Water Treatment Plant. The use of ozone should eliminate use of Powdered Activated Carbon which will reduce sludge mass for disposal from the water treatment plant and be a more secure means of treating taste and odour problems and destroying any toxins released by blue-green algae. **Uralla Shire Council** Water use minimisation strategies: • gradual conversion of Aged Care Facility, McMaugh Gardens, through changing showerheads from 20 litres to 9 litres per minute to occur. Other facilities (e.g. Aged care units) will also be converted. • adopting recommendations from the Climate Consensus Project (October 2008), including advising residents of sustainable living hints and practises through the provision of pamphlets and FACT sheets in places such as the town Libraries, Doctors surgeries, hairdressers salons and the like. Council's monthly Newsletter will also be utilised for this purpose.

Management of Potable Water Supplies (continued)	**Walcha Council** Continued best practice pricing structure – cost per kl of water increased in accordance with supply costs. In conjunction with continued education and loss monitoring, consumption is down from 207 ML to 195 ML, or 6.2%. Walcha Council has implemented a reclamation and recycling system which will operate in 2009/10 and will be used for irrigation, truck washing purposes, roadwork and other non-potable water requirements. It is expected this will distinctly reduce the amount of potable water drawn from Council's standpipe and other points in the reticulation network. Continued maintenance of infrastructure, including shut-off valve replacement to reduce leakage, changes to backwash cycles to reduce the amount of water used and to optimise the filter performance.
On-site Waste Water Management Systems	**Armidale Dumaresq Council** 37 new systems were approved, installed and/or registered during 2008-2009. Council has a licensing system for on-site waste water management systems. Licenses are issued upon installation / registration of on-site systems and expiry of licences is based on environmental 'risk' of the system. A program of inspections is based on risk (high risk –2 years, medium risk – 3 years and low risk – 5 years). Due to resourcing limitations in 2008-2009 inspections have been minimal, and have only been in relation to complaints, coinciding with food premises inspections or conveyancing enquiries. **Guyra Shire Council** 8 new systems approved, installed and/or registered during 2008-2009. **Uralla Shire Council** 12 new systems approved, installed and/or registered during 2008-2009. Council inspects existing systems upon request when properties are being transferred.
Pollution	**Armidale Dumaresq Council** Ten (10) pollution incidents were detected during 2008-2009, comprising 3 petrochemical, 4 sewerage related, 2 paper delivery issues and 1 apparent poisoning event. Investigations were conducted for each incident with actions including verbal clean up notices and enquiry of process / procedures (with subsequent alteration). One (1) Penalty Infringement Notices was issued for polluting waterways during 2008-2009 in relation to metal parts coated with HD Powdercoat Stripper being washed down into the stormwater system, impacting / potentially impacting upon waters in Dumaresq Creek.

5.3.3 Government Rebates

Rebates from the NSW Government Department of Environment, Climate Change and Water were available to households during 2008-2009 for installation of rain water tanks and water efficient washing machines.

Rain Water Tanks
Rebates of up to $1500 for rainwater tanks connected to toilets and washing machines are available from the Department of Environment, Climate Change and Water. Statistics available from the Department on the rate of up-take of rebates for rain water tanks for the period from 1 July 2007 to the 30 June 2009 suggest that this scheme has been accessed widely across the Southern New England Region.

The number of rebates by local government area is shown below:

Armidale Dumaresq	96
Guyra	66
Uralla	124
Walcha	40

Washing Machine Rebates
Rebates of $150 were available for buying a 4.5 star or higher WELS rated washing machine. According to the Department of Environment and Climate Change, a 4.5 star water efficient washing machine can save up to 100 litres per wash compared to an old top-loader washing machine. A family washing more than six loads a week would save up to 31,000 litres of water a year.

The number of rebates taken up across the Southern New England Region from 1 August 2008 (start of the rebate) to 30 June 2009 by local government area were:

Armidale Dumaresq	63
Guyra	10
Uralla	22
Walcha	9

5.3.4 Community / Agency Actions

Southern New England Landcare and Catchment Management Authorities
Section 3.3.3 and Appendix H provide an outline of the activities undertaken by Southern New England Landcare, Northern Rivers CMA and Border Rivers – Gwydir CMA across the Region during 2008-2009, many of which relate to riparian area restoration and improvement works.

SECTION 6 – BIODIVERSITY

6.1 INTRODUCTION

The Southern New England Region supports a unique biodiversity as a result of the varied topography, climate, soil type and land use. The Region contains two areas of international significance, being the Little Llangothlin Nature Reserve (Guyra LGA) which is a RAMSAR site, and the Oxley Wild Rivers National Park (Armidale Dumaresq and Walcha LGA) which is a World Heritage Site.

The Southern New England Region of Armidale Dumaresq, Guyra, Uralla and Walcha local government areas lies largely within the area defined as the New England Tableland Bioregion. A map of the New England Tableland Bioregion is contained in Appendix J. Following is a description of the bioregion from the Department of Environment, Climate Change and Water (2009)

> The New England Tableland Bioregion has an area of 3,004,202 hectares of which 95.23% of the bioregion lies within NSW. The bioregion lies between the North Coast and Nandewar bioregions, extending north just into Queensland. In NSW, the bioregional boundary extends from north of Tenterfield to south of Walcha and includes the towns of Armidale and Guyra. The bioregion includes parts of the MacIntyre, Clarence, Gwydir, Macleay, Namoi and Manning River catchments.
>
> *Significant Flora*
> The New England Tableland Bioregion is botanically significant due to its high plant species diversity and high level of endemism. For instance, more than 70 species of Eucalyptus occur on the tablelands, about a third of which are endemic or near endemic to the bioregion. The New England Tableland Bioregion provides habitat for 68 species listed in the schedules of the TSC Act. Thirty of these species are listed as endangered, 39 are listed as vulnerable and one species, Euphrasia arguta, is considered extinct in the bioregion (NSW NPWS 2001).
>
> *Significant Fauna*
> The New England Tableland Bioregion supports a considerable proportion of the endangered regent honeyeater (Xanthomyza phrygia) population in woodland fragments. Numbers of grassland and ground-feeding insectivorous birds have declined in the bioregion, as have some temperate woodland and forest species, mainly due to changes caused by agriculture (eg. land clearing and habitat fragmentation), a trend which is likely to continue and has occurred across temperate Australia (Australian Terrestrial Biodiversity Assessment 2002).
>
> Ninety-two fauna species listed in the schedules of the TSC Act have been recorded in the New England Tablelands Bioregion (NSW NPWS 2001). Of these, 18 are listed as endangered, 72 are listed as vulnerable and a number of species are considered extinct in the bioregion.

Significant Wetlands

Little Llangothlin Lagoon is at the headwaters of the Oban River and much of the lagoon's catchment is within Little Llangothlin Nature Reserve. The lagoon is considered to be in good condition, although incurring pollution from nearby agricultural lands (Australian Terrestrial Biodiversity Assessment 2002), and supports many waterbirds including ducks, ibis, egrets and even the white-breasted sea eagle (Haliaeetus leucogaster) along with vulnerable and rare species including the comb-crested jacana (Irediparra gallinacea) and the blue-billed duck (Oxyura australis) in times of drought (ANCA 1996).

The New England wetlands are representative of shallow, temporary upland lagoons and are considered to be in good condition, despite urban development at nearby Mother of Ducks lagoon. They have a fluctuating water regime, which is important for ecosystem function, and sometimes support the rare stonewort (Charophyte), Nitella hookeri.

The wetlands also provide important habitat for migratory birds and include parts of Little Llangothlin, Mother of Ducks and Dangars Lagoon Nature Reserve. Upland wetlands of the New England Tableland are now listed under the TSC Act as an endangered ecological community.

Round Mountain is in Cathedral Rock National Park and is a representative example of an upland swamp in the New England Tablelands. The swamp is dominated by sedge and like the other wetlands in this bioregion suffers from feral animals and exotic weeds, including blackberry (Rubus sp.) (Department of Environment and Climate Change, 2009).

6.2 THE STATE OF BIODIVERSITY IN THE REGION

Biodiversity in the Region is under pressure from a number of sources and generally declining biodiversity can result from threatening processes such as invasion and competition with weeds and feral animals, removal of habitat, fire, alterations to water flow and climate change.

The environmental indicators outlined below have been used in State of Environment Reporting to assess and monitor the state, or condition of the environment with respect to biodiversity. This section provides up-dated data for the respective environmental indicators for 2008-2009 and outlines any significant trends.

6.2.1 National Parks

In 2006-2007 it was reported that there were 318,823 hectares of land protected under National Park Estate within the Southern New England Region. This included 38 National Parks and Wildlife Service reserves that comprise 18% of the entire Region.

<<*DATA GAP*>> No up-dated information has been provided by the National Parks and Wildlife Service for the 2007-2008 or 2008-2009 reporting period.

6.2.2 Wetlands

As outlined above, upland wetlands of the New England Tablelands are listed under the *Threatened Species Conservation Act 1995* as an endangered ecological community. There are more than 30 natural lagoons and swamp depressions on the

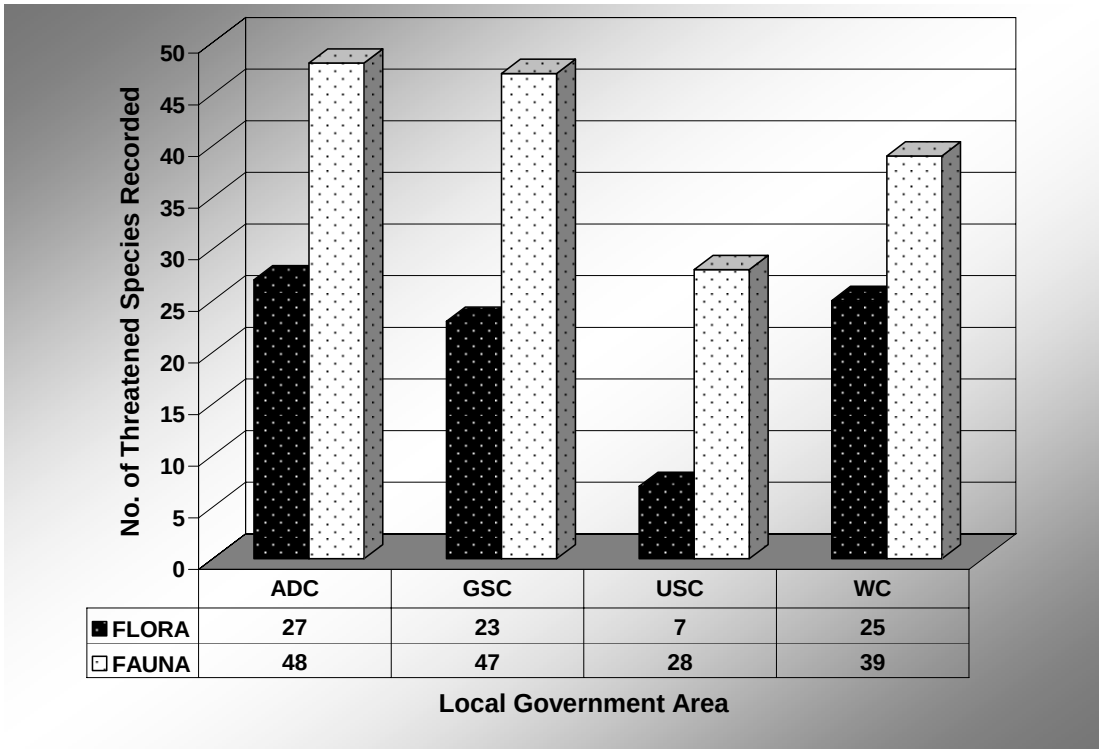
New England Tablelands between Uralla and Llangothlin with most being small features of 2-3 ha. They include one RAMSAR wetland and six nationally significant wetlands. There has been no known change in the number of upland wetlands since 2004 and no known investigation or reporting of their general condition within that time. Further details are outlined below under Section 6.3 on pressures affecting the condition of wetlands across the Region.

6.2.3 Flora and Fauna

Threatened Species

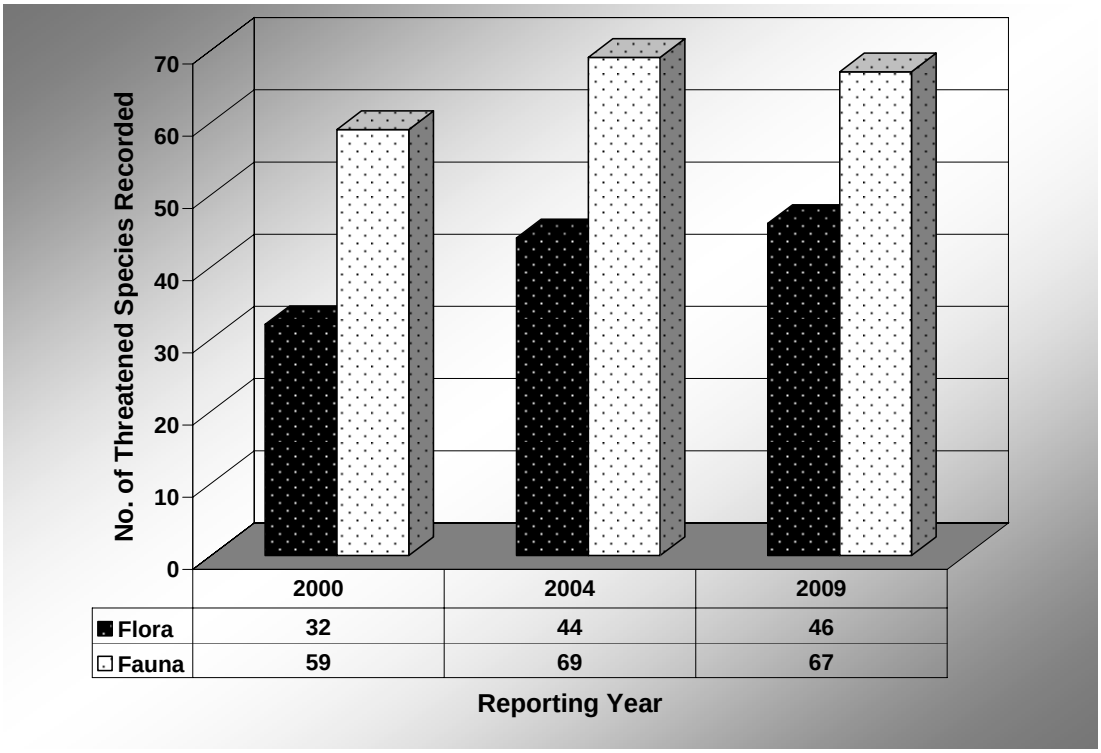
The Atlas of NSW Wildlife lists threatened plant, mammal, bird, reptile, amphibian and invertebrate species that have been recorded or are known to occur in the region. Figure 27 shows the total number of species listed under the Threatened Species Conservation Act 1995 that have been recorded on the Atlas of NSW Wildlife for the respective local government areas in the Southern New England Region, as at July 2009. A list of individual species (by local government area) and their status as recorded on the Atlas of NSW Wildlife in included in Appendix K.

Figure 27: **Number of Recorded Threatened Species by LGA (July, 2009)**
Source: Wildlife Atlas, National Parks and Wildlife Service, 2009.
(www.wildlifeatlas.nationalparks.nsw.gov.au)



In 2006-2007 it was reported that there were 32 flora and 61 fauna species listed under the *Threatened Species Conservation Act 1995* within the Southern New England Region. In 2007-2008 (Sept. 2008) the National Parks and Wildlife Service Wildlife Atlas recorded a total of 46 flora and 61 fauna species for the Region. The number of recorded flora species has remained steady at 46 over 2008-2009 while the number of recorded threatened fauna species has risen to 67. Figure 28 below shows trends in the total number of recorded threatened flora and fauna species since 2000 across the Southern New England Region.

Figure 28: **Total Number of Recorded Threatened Species Across Southern New England Region**



Endangered Ecological Communities

An ecological community is described as a group of species that occur together in a particular area of the landscape. The survival of each species relies on complex interactions amongst all of the inhabitants of the ecological community, and consequently, the loss of any species may have detrimental flow-on effects for the ecological functioning of the whole community (Department of Environment, Climate Change and Water, 2009).

Endangered ecological communities are also listed under the *Threatened Species Conservation Act 1995*. A search of the Department of Environment, Climate Change and Water's Threatened Species web site (www.threatenedspecies.environment.nsw.gov.au) identified the following endangered ecological communities as occurring in the Region.

Table 14: **Endangered Ecological Communities Occurring in the Southern New England Region**

Scientific Name	Common Name	Geographic Region
White Box Yellow Box Blakely's Red Gum Woodland	Box-Gum Woodland	▪ Armidale Plateau ▪ Glen Innes – Guyra Basalts ▪ Walcha Plateau ▪ Bundarra Downs – Part A (Uralla)
Montane Peatlands and Swamps of the New England Tablelands, NSW North Coast, Sydney Basin,	Montane Peatlands and Swamps	▪ Armidale Plateau

South East Corner, South Eastern Highlands and Australian Alps		
New England Peppermint (Eucalyptus nova-anglica) Woodland on Basalts and Sediments in the New England Tableland Bioregion	New England Peppermint (Eucalyptus nova-anglica) Woodland on Basalts and Sediments in the New England Tableland Bioregion	▪ Armidale Plateau ▪ Glen Innes – Guyra Basalts ▪ Walcha Plateau ▪ Bundarra Downs – Part A (Uralla)
Ribbon Gum, Mountain Gum, Snow Gum Grassy Forest / Woodland of the New England Tableland Bioregion	Ribbon Gum, Mountain Gum, Snow Gum Grassy Forest / Woodland of the New England Tableland Bioregion	▪ Armidale Plateau ▪ Glen Innes – Guyra Basalts
Upland Wetlands of the Drainage Divide of the New England Tableland Bioregion	Upland Wetlands of the Drainage Divide of the New England Tableland Bioregion	▪ Armidale Plateau ▪ Glen Innes – Guyra Basalts ▪ Walcha Plateau ▪ Bundarra Downs – Part A (Uralla)
McKies Stringybark / Blackbutt Open Forest in the Nandewar and New England Tableland Bioregions	McKies Stringybark / Blackbutt Open Forest	▪ Glen Innes – Guyra Basalts ▪ Bundarra Downs – Part A (Uralla)

6.2.4 Fisheries

The NSW Department of Primary Industries (Fisheries) is the agency with primary responsibility for conserving fishery resources. For the purpose of this State of Environment Report, the Department has provided advice on the number and type of threatened aquatic species that are known to occur in the Southern New England Region.

In 2004, three (3) threatened aquatic species were identified, being:

Silver Perch (*Bidyanus bidyanus*)
Purple Spotted Gudgeon (*Mogurnda adspersa*)
Olive Perchlet (*Ambassis agassizii*)

Since this time, one (1) additional species, the River Snail (Notopala sublineata), has also been identified in the Region as a threatened aquatic species.

In 2007-2008, the NSW Department of Primary Industries (Fisheries) advised that there were 10 existing aquaculture developments in the Southern New England Region, with 8 located in the Guyra local government area, and 1 each in Armidale Dumaresq and Walcha LGAs. No changes were notified for 2008-2009.

6.2.5 Forestry

In 2006-2007 it was reported that the total area of forests owned and managed by Forests NSW in the Southern New England Region was 75,081 hectares, the majority of which comprised native forests. It was also reported that there are approximately 10,000 hectares of softwood plantation across the Region, consisting primarily of exotic *Pinus* species and six hardwood plantations covering approximately 3000 hectares.

<<*DATA GAP*>> No information was provided by the Department of Primary Industries (Forests NSW) for the 2007-2008 or 2008-2009 reporting period.

6.2.6 Feral Animals / Companion Animals

Feral Animals

Feral animal control within the Southern New England Region is largely undertaken by the New England Livestock Health and Pest Authority (formerly Rural Lands Protection Board), National Parks and Wildlife Service and private land holders.

<<*DATA GAP*>> No information was provided by the New England Livestock Health and Pest Authority for feral animal control activities undertaken during 2007-2008 or 2008-2009.

It is understood that the National Parks and Wildlife Service are developing a pest management strategy to address the spread of Indian Myna birds throughout parts of the Region. No details regarding this strategy were provided for 2008-2009.

Companion Animals

Councils are responsible for the control of companion animals (e.g. cats and dogs) under the *Companion Animals Act 1998*. Table 14 outlines the number of stray animals impounded, surrendered, housed and/or destroyed for each LGA during 2008-2009.

Table 15: Companion Animal Control Across the Southern New England Region During 2008-2009

LGA	animal type	impounded or surrendered	released, sold or returned	housed for RSPCA	destroyed
ADC	dogs & cats	524	418	-	106
	stock	11	11	-	-
GSC	dogs & cats	59	24	-	35
	stock	55	55	-	-
USC	dogs & cats	46	28	5	13
	stock	-	-	-	-
WC	dogs & cats	38	10	-	28
	stock	-	-	-	-

6.2.7 Weeds

Invasive weeds are a serious threat to Australia's natural environment and can have a significant economic, environmental and social impact. Weeds can cause damage to natural landscapes, agricultural lands, waterways and coastal areas. They displace native species, contribute significantly to land degradation, and can reduce

farm and forest productivity. The potential for increased weed infestation as a result of anticipated climate change was identified as an extreme risk under the New England Climate Change Adaptation Action Plan prepared during 2008-2009 (see Section 1.6).

Weed control activities across the Southern New England Region are primarily undertaken by the New England Weeds Authority (NEWA).

Noxious Weeds

There are currently 85 weed species on the noxious weeds list for NSW, most of which are Class 1 and 2 weeds that are rarely found. 28 of the noxious weed species are known to occur in the Southern New England Region. There have been no new noxious weed declarations affecting the Region during 2008-2009 although Bridal Creeper has been reclassified as a Class 3 noxious weed and is starting to develop as an issue of concern, primarily in the Armidale urban area. The weeds which are most commonly dealt with by the New England Weeds Authority are African Lovegrass Serrated tussock, Chilean needle grass, Nodding Thistle, St Johns Wort, Blackberry, Sweet Briar and Privet.

The Noxious Weeds Act 1993 outlines 5 "control classes" of noxious weeds. The New England Weeds Authority has approved Management Plans for 15 Control Class 4 (CC4) noxious weeds, being:

African Lovegrass	Blackberry
Broom	Burr species
Chilean Needle Grass	Nodding Thistle
Pampas Grass	Paterson's Curse
Privet	Rhus Tree
Saffron Thistle	Sweet Briar
Cylindropuntia species (e.g. rope pear)	Harrisa cactus species
Opuntia species (prickly pear)	

Control of CC4 noxious weeds under the Noxious Weeds Act 1993 requires that:

> "the growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local [council] control authority. Some CC4 plants cannot be sold, propagated or knowingly distributed."

Weed Control Activities

Weed control activities conducted by NEWA during 2008-2009 are outlined below in Section 6.3.

6.3 BIODIVERSITY ISSUES AND ACTIONS

6.3.1 Pressure on Biodiversity

Activities and issues that impact, or create pressure on biodiversity in the Southern New England Region have been identified in previous State of Environment Reports. These pressures are broadly identified as:

- weeds
- feral animals
- removal and loss of habitat / vegetation

- bush fire
- low level of, and access to, knowledge and awareness
- disease and infection (e.g. mistletoe, Psittacine Circoviral (beak and feature disease that affects parrots), Amphibian chytrid fungus (kills frog populations) and Phytophthora cinnamomi (a fungus that causes dieback in trees))
- management of travelling stock routes (see Section 3 – Land)
- degradation of aquatic habitats and riparian areas

The potential for climate change to impact on biodiversity has also been highlighted during 2008-2009 through projects such as Local Adaptation Pathway Program and Climate Consensus Project (see Part 1.6). The Local Adaptation Pathway Program identified the following extreme or high risks due to potential climate change in the Region, all of which will impact on biodiversity.

- changes in water table – impacts on water quality
- increased algal bloom in water supply
- reduced health of waterways due to sedimentation and eutorophication
- loss of aquatic ecosystem service / value
- loss of biodiversity
- increased weed infestation
- loss of non-urban vegetation
- change in species composition of local environment

In addition, two wetland communities that occur in the Southern New England Region are listed as endangered ecological communities, as outlined above in Table 13. Details of key threats relating to these wetland communities are outlined below (Department of Environment, Climate Change and Water, 2009).

Montane Peatlands and Swamps of the New England Tableland are facing a high risk of becoming extinct in nature in New South Wales unless the circumstances and factors threatening its survival or evolutionary development cease to operate.

Threats to Montane Peatlands and Swamps can include:

- land clearing – losses estimated at about 20% in the Guyra district (Benson and Ashby 2000)
- clearing of catchments for pastures or plantations, and earthworks associated with road or track construction causing erosion, sedimentation or changes in hydrology (Whinam and Chilcott 2002)
- overgrazing causing changes in species composition, trampling by hooved animals (which may lead to erosion or drying in different parts of a peatland)
- digging and rooting by feral animals causing damage to vegetation and soils
- predation, habitat destruction, competition and disease transmission by feral animals
- high frequency fire which can alter species composition by favouring fire-tolerant sedges at the expense of woody plants that are slow to regenerate after fire (Keith 1996)
- pollution and eutrophication caused by run off or drift of fertilisers, pesticides, waste water, storm water and other pollutants from adjacent pastures and developed industrial or urban areas, resulting in the replacement of native peatland vegetation by exotic weeds
- climate change through the alteration of hydrological budgets (Hughes 2003).

Upland Wetlands of the Drainage Divide of the New England Tableland Bioregion are shallow-temporary to near-permanent wetlands naturally restricted to the higher altitudes (above about 900m) associated with the Great Dividing Range in northern NSW. It is estimated that over 70% of sites formerly occupied by the community have been lost through draining or damming since European settlement (Bell 2000; Benson and Ashby 2000; Brock et al. 1999) and most of the 55 remaining wetlands have been severely modified by change in water regime.

Major ongoing threats to Upland Wetlands of the Drainage Divide of the New England Tableland Bioregion of New South Wales are:

- alteration of water regimes to make these wetlands more predictably flooded or dry (Brock et al.1999)
- stock trampling and grazing can lead to invasion by introduced plants and animals and can also alter the community structure and its biodiversity

Only three Upland Wetlands are fully or partially within conservation reserves namely, Billy Bung and Little Llangothlin in the Little Llangothlin Nature Reserve and part of Mother of Ducks Lagoon in the Mother of Ducks Lagoon Nature Reserve.

6.3.2 Issues Identified by the Community

Collection of timber from road reserves

The issue of felling and/or collecting timber from road reserves for firewood has been raised in a public submission received from a rural landholder. The same issue, along with damage to and clearing of roadside trees by Shire staff during routine roadside maintenance program, has been raised by National Parks Association of NSW - Armidale Branch and Birds Australia – Northern NSW Groups. The primary concern is the impact on biodiversity and loss of habitat for threatened woodland birds.

This issue has been raised in previous State of the Environment Reports and involves other agencies and land managers in addition to Councils, such as Livestock Health and Pest Authority (LHPA) and Department of Lands in their management of travelling stock routes and reserves. As noted in Section 3, LHPA have not provided any information for the 2008-2009 State of the Environment Report and as such, any actions being undertaken by this agency are unreported.

Actions suggested by National Parks Association of NSW - Armidale Branch and Birds Australia – Northern NSW Groups include:

- recognition by all Councils that firewood collection on sensitive roadside and TSR ecosystems is unsustainable;
- measures are required to discourage wood heating in towns and villages for this reason rather than just for smoke reduction to reduce air pollution;
- renewed commitments to effective roadside environmental management plans by all Councils, such as:
  - instructing Council staff to avoid unnecessary felling of trees during routine road maintenance or reconstruction practices;
  - introducing education workshops for road maintenance staff on recognition of environmental values of roadside vegetation, and sustainable management of those values;

  - re-survey roadsides in former Dumaresq Shire to update maps of significant roadside vegetation and associated management information and signage, then do similar surveys in the rest of the four council areas;
  - contact Livestock Health and Pest Authority and seek a Memorandum of Understanding or collaboration in promoting and implementing the above measures.
- list ecological values and explain in Council notices to ratepayers that:
  - tree felling is illegal on all Crown land, roadsides and TSRs, and penalties apply for offences.
  - areas of significant roadside communities such as Mugga Ironbark and identified endangered ecological communities (EECs) in which all plants are protected and firewood collection is not permitted.

Invasive weeds

In their submission, National Parks Association of NSW - Armidale Branch notes increasing infestations of Coolatai grass on roadsides and continuing abundance of African Love Grass as a concern, and that Montpellier Broom is continuing to spread in some locations.

Weed control activities in the Southern New England Region are primarily undertaken by the New England Weeds Authority (NEWA) and an outline of their actions during 2008-2009 in relation to control of noxious weeds is included below in Section 6.3.3. It is also noted in the Climate Change Adaptation Action Plan project (see Section 1.6) that increased weed infestation is identified as an extreme risk for the Region as a consequence of projected climate change, and consequently is identified as a short term priority for action.

Habitat Protection

Birds Australia – Northern NSW Groups have identified a breeding population of Regent Honeyeaters (endangered species) in Mugga Ironbark vegetation on Travelling Stock Routes (TSRs) and roadsides in the Uralla Shire. The Group has identified the need for specific attention to habitat management for this threatened species in the Region.

6.3.3 Council Actions

The following Table provides a summary of actions that were being implemented by each of the Councils during 2008-2009 in relation to biodiversity. A number of the actions outlined below also relate to other Sections of this Report, such as water and land management.

BIODIVERSITY ACTIONS 2008-2009	
Weeds (New England Weeds Authority	Inspections: - conducted 1775 private property inspections - conducted 38 inspections of specific sites including aquaria and pet shops, nurseries, other businesses (e.g. weekend markets), Department of Land property, National Parks / Nature Reserves, Australian Rail Track Corporation land New England Livestock Health and Pest Authority reserves

Weeds (New England Weeds Authority – NEWA) (continued)

Weed Control Activities:

- 4000km of Southern New England Council roads treated for Blackberry, Sweet Briar, Serrated Tussock and St Johns Wort
- special run for treatment of Coolatai Grass and African Lovegrass in Walcha LGA to deal with isolated infestations
- Walcha parks treated for bindii eye and broadleaf weeds
- roadside furniture (i.e. guide posts/guard rails) treated for all Councils
- water storage areas / waste transfer stations / treatment plants treated for noxious weeds
- Pesticides Notification plans are on all council websites and updated when required

Education Programs:

- NEWA continues to work closely with Landcare and holds weed identification days at Landcare Field Days
- weeds identification displays at Armidale Show, Wool Expo and Walcha Timber Expo
- weeds identification day at Puddledock Hall
- five Serrated Tussock roadside identification sites maintained in SDC area
- local campaign, mainly in Armidale urban area, to raise community awareness of Bridal Creeper as a noxious weed

CMA Program:

- (ADC) heavy weed infestations targeted in the Kelly's Plains area. Weeds removed from site and Armidale Dumaresq Council assisted with waiving tip fees
- funding of $15,00 provided by Northern Rivers CMA for the University of New England to study the Mexican Water Lily plant and determine its reproductive mechanisms and a suitable herbicide to treat the infestations
- developing a plan of management for future treatment and control of Mexicam Water Lily

Privet:

- programmed survey carried out within Armidale City. 560 inspection reports sent to residents with Privet. Follow up inspections to be carried out in 2009-2010

Companion Animals	**All Councils** Refer to Section 7 – Noise for additional detail of actions undertaken by each of the Councils in relation to barking dog complaints. **Armidale Dumaresq Council** Education activities were undertaken throughout the year with programs provided to Primary Schools through the State Government sponsored "Spot the Dog" package. The Animal Shelter also presents Kids and Dogs initiatives to nursing mother's groups, ante natal classes, Family Day Care and Child Care centre groups and parents. The Animal Shelter fosters a volunteer group and participation in programs for disadvantaged and at risk youth groups throughout the year. The Animal Shelter maintains a website to assist with re-homing activities and liaises with local and State-wide animal welfare groups in attempts to find homes for abandoned and unclaimed animals. These activities have resulted in a continued high profile of animal management within the Region and a continued rise in the number of animals reclaimed or re-homed from the shelter. 2008-2009 was the first time on record that the number of re-homed animals outnumbered the number of euthanised animals with reclaimed animals also increasing. **Walcha Council** Owners of animals the subject of complaints to Council are engaged and educated on their responsibilities in relation to responsible pet ownership. This has resulted in a general decline in the incidence of re-offending or repeat complaints being received.

Removal / Loss of Habitat and Vegetation	**Armidale Dumaresq Council** On-going weed control and small scale plantings within two urban bushland reserves, being Snow Gums and Manna Gums Reserves. A Job Link Work for the Dole team assisted with this work which began in 2006 and will be concluded in late 2009. **Uralla Shire Council** Council has commenced a project to re-establish habitat for the Regent Honeyeater (*Xanthomyza Phrygia)* in Bundarra. Contact with Border Rivers – Gwydir CMA / DECC Liaison Officer has been established and advice sought. Weed removal and control has been undertaken in a dedicated Nature Park site, vegetation identified as Grass Box Woodland and appropriate species sought from local nurseries to complement the existing habitat. The new plants to enhance the existing habitat will be planted in the Spring of 2009. **Walcha Council** Walcha Council continued to implement its street tree planting program. Council also received a Koala Plan of Management and Weed Assessment on land adjoining a rural residential subdivision. Council has resolved to be involved in the Koala Management project and are now investigating options to reduce the infestation of weeds in the study area.
Information and Awareness	**All Councils** In 2006-2007, 2007-2008 and 2008-2009 applications were made on behalf of the Southern New England Councils for funding under the NSW Government's Planning Reform Fund for an expert analysis of areas subject to potential development pressure in relation to their biodiversity and habitat qualities. Unfortunately none of the applications have been successful, however, opportunities for studies or strategies to assess biodiversity values, either on a regional or more specific scale, will continue to be investigated.

Information and Awareness (continued)	**Armidale Dumaresq Council** A remnant Endangered Ecological Community (Manna Gum Snow Gum grassy woodland) was identified on the road reserve of Glen Innes Road within the urban area adjacent to Presbyterian Ladies College. This small area (<2,500m^2) supports an almost completely intact ground stratum with canopy mostly lost due to regular mowing. The site was beginning to erode considerably due to bare patches resulting from regular low mows by the College grounds staff. Outcomes from discussions with staff and the school Principal was that the school would cease regular mowing of the site and pass responsibility to Council to manage similarly to grassland areas with the Armidale Arboretum. The EEC extends well within the school grounds with mature canopy trees. It was suggested that the area be conserved and brought to the attention of the students studying land management conservation and that it could be a valuable teaching resource and site for revegetation. After initial concerns, the school has accepted Council's desire to manage the sloping road verge for conservation. Mowing is now undertaken once or twice per year only in October and April (advice form UNE Botany Department) to reduce dry sward build up that damages Kangaroo grass in the long term and to open groundcover to promote expansion of herbaceous plants. Funds for interpretive signage at the site was sought from Northern Rivers CMA but was not successful. Council's Civic and Recreation Services section plans to erect a small sign to advise the public of this asset and explain the irregular mowing frequency.
Bush Fire	**All Councils** Continue to support the NSW Rural Fire Service (refer to Section 3 – Land for further details of RFS activities).
Aquatic Habits and Riparian Areas	**Armidale Dumaresq Council** Financial ($25,000) and in-kind assistance was provided to the Armidale Urban Rivercare Group (AURG) for their on-going work in the restoration of the urban reaches of Dumaresq Creek. In-kind assistance included - the completion of a guidance document entitled 'Draft Revegetation Guidelines for the Revegetation of the Urban Reaches of Dumaresq Creek. The document provides maps, cross-sections and comprehensive information to enable the group to plan, define the extent of works and execute revegetation works in a way that balances the sometimes competing requirements for land use on the creeklands e.g. the requirements for sporting fields, open recreation areas, existing European landscape management, environmental benefits, aesthetics, cost of maintenance and social issues. The document was researched and written in consultation with AURG, UNE research group (Dr Darren Ryder), Department of Lands and represents other community values and the requirements of a range of community group stakeholders. The document was accepted by Council, placed on public exhibition and will be reviewed in 12 months.

Aquatic Habits and Riparian Areas (continued)

- other in-kind assistance included the supply of a work team and machinery to assist with ground preparation and weed control and the supply of up to 25m of mulch donated by the Council Waste Management Facility.

As a result of Council funding and in accordance with the guidance document, the AURG has pressed ahead with the added assistance of local contractors in the preparation of large areas for planting up to 12,000 trees in spring 2009. On National Tree Day (5-6 September) over 2000 native trees and shrubs were planted on prepared ground by community volunteers organised by the AURG. Six (6) truck loads of mulch were donated by Council.

See also Chapter 5 - Water

Uralla Shire Council

Uralla Council continued its environmental project titled "Uralla Sub-Catchment Management Program". This is a long-term project and involves planning and on-ground works for stormwater and urban run-off management, in-stream bank stabilisation and erosion control works, weed removal and weed control programs and native riparian revegetation within the riparian zones of Uralla and Rocky Creeks. The project commenced in 2007.

As part of the project, on-ground works were completed on the sediment control dam at the headwaters of Uralla Creek with highly noticeable improvement in rainfall event water quality. A Planet Ark sponsored Tree Planting Day was held on this project site involving 35 students and 3 teachers from Uralla Central School. Over 2,000 trees, shrubs and native grasses were planted on the site.

A site specific technical inspection report on the upper reaches of Uralla Creek was carried out by Soil Conservation Services (SCS) in support of the Sub-Catchment Plan created by Border Rivers – Gwydir CMA staff. This report has been used to guide weed removal works and to plan sediment control and in-stream bank stabilisation works on upper Uralla Creek. A quote for these works has been obtained and adopted by Council. The project works have been placed into future budgetary plans and funding opportunities are being sourced.

Riparian vegetation rehabilitation programs were conducted, also based on the Sub-Catchment Plan Document and the SCS report for this project, by a Greening Australia Green Corps Team that was sponsored by Southern New England Landcare, hosted and fully supported by Uralla Shire Council. The team removed exotic weeds from four Council owned sites along Uralla Creek and planted 800 native trees, shrubs and grasses on the riparian zone. The team also worked in a remote location on the Gwydir River to clear exotic weeds and build protective fencing around a recognised cultural heritage site.

The Uralla Sub-Catchment Project Plan also provides recommendations for willow tree and other exotic deciduous tree control on riparian zones. These recommendations have been adopted by Council.

Biodiversity in High Country (HiCUB)
In December 2008 it was announced that Armidale Dumaresq, Guyra Shire, Uralla Shire and Walcha Councils had been successful in obtaining a grant of $2 million from the NSW Environmental Trust for Urban Sustainability. This project, called HiCUB (previously known as Biodiversity in High Country) will occur over two and a half years and provide community education, monitoring and evaluation, technical studies and on-ground rehabilitation works across the Region, including riparian restoration works.

The objectives of the project are to:

- improve the ecological health of urban riparian and bush lands, reduce weeds, increase in area and quality of native vegetation, erosion remediation and improved habitat linkages at landscape scale.
- improve the effectiveness of councils and community effort toward environmental rehabilitation through improved integration, collaboration and greater knowledge transfer between councils and stakeholders.
- monitor, evaluate and implement improvement in approaches to rehabilitation of urban areas
- increase long-term participation in urban ecosystem rehabilitation targeting community volunteerism and investment from private and government sources
- improve resource use efficiency - increase utilization of council mulch; increase uptake of rebates for rainwater tanks, and alternative energy technology; decrease nutrient load in town water supply.

6.3.4 Community / Agency Actions

Birds Australia – Northern NSW Group
Birds Australia – Northern NSW Group has monitored Mugga Ironbark patches on Travelling Stock Routes (TSRs) and roadsides near Torryburn and on the Bundarra Rd in Uralla Shire for the occurrence of Regent Honeyeaters (an endangered species). A breeding population was found along the Gwydir River near Torryburn and in the Gwydir Park Road TSR in November -December 2008. The Gwydir River and the Gwydir Park Road TSR are known core habitat where Regent Honeyeaters have bred in past years and are expected to do so again in 2009.

During 2008-2009 Birds Australia – Northern NSW Group also completed an approximately 2ha tree-planting project and signage in Gwydir Park Road TSR at Torryburn, partly funded by Boral as part of their environmental management plan for rehabilitating their licensed sand quarry on the Gwydir River.

Citizens Wildlife Corridors Armidale Inc.
During 2008-2009 Citizens Wildlife Corridors Armidale Inc. completed the following projects:

- enclosed a 1.4km stretch of old growth woodland on Lyndon Rd, Blue Wren Rd, Arundel Drive North and an unnamed road reserves north of Armidale to protect it from damage by vehicular traffic. The project was assisted by a grant from Newcastle Permanent Building Society Ltd. Previously Crown Road Reserves, they were dedicated as public roads and will be closed and managed by Council as part of the Armidale Walking Track network. These road reserves support koala populations and locally threatened flora.
- issued a Final Report in March 2009 relating to a NSW Environmental Trust Grant for restoration of vegetation corridors in the Armidale area. A summary

of on-ground work achieved under the Grant is outlined below and a copy of the report is included in Appendix L.

- 3900m of fencing completed to protect plantings of native species by landholders on 13 properties. An additional 3600m of fencing (unfunded) was erected by landholders involved in the project.
- cooperation between neighbouring properties to create wider wildlife corridors and planting to benefit the wider area
- 8620 seedlings, locally grown and from local seed have been planted
- total of 26.39ha fenced and protected – most planted to local native species
- 6000m of wildlife corridor established
- 14.87ha of riparian land fenced and protected
- approximately 3000m of creek bank protected from stock damage

Ebor VillageLink - VillageView Project

A tree planting project under the 2006-2010 Action Plan has been completed with tree guards and planting being carried out. This project was funded and carried out by Armidale Dumaresq & Guyra Shire Councils, Ebor Progress Association Volunteers and Ebor Rural Fire Brigade Volunteers.

A riparian restoration project to fence a riparian zone, and conservation and recreation reserve is in progress and is due for completion in 2011. The project is being funded by a grant of $88,250 under the NSW Environmental Trust

Successful negotiations with Livestock Health and Pest Authority and Department of Lands during 2007-2008 to establish a stock holding area at the south eastern entrance to the village.

SECTION 7 – WASTE AND RESOURCE RECOVERY

7.1 INTRODUCTION

Councils across the Southern New England Region continue to operate licensed solid waste landfill facilities, along with various rural transfer stations to service smaller settlements and rural communities. All of the Southern New England Councils are actively involved in recycling, working to reduce overall waste generation and improving waste management.

Armidale Dumaresq Council is working to develop a regional landfill facility that will have capacity to handle waste from across the Region. The planning stage of this proposal has continued during 2008-2009 with preparation of environmental assessment documentation.

7.2 WASTE MANAGEMENT IN THE REGION

The environmental indicators outlined below have been used to assess and monitor the state, or condition of the environment with respect to waste, waste management and resource recovery over a number of years. This section provides up-dated data for the respective environmental indicators for 2008-2009 and outlines significant trends.

7.2.1 Waste Management Facilities

Each of the four (4) Councils in the Southern New England Region operate landfill facilities and/or transfer stations as part of their waste management operations. The location and type of facility for each local government area is outlined in the Table below.

Table 16: Waste Management Facilities in the Southern New England Region

LGA	Facility Type	Location
ADC	landfill and waste transfer station	Armidale
	waste transfer station	Tilbuster
	waste transfer station	Wollomombi
	waste transfer station	Ebor
	waste transfer station	Hillgrove
GSC	waste transfer station	Guyra
	landfill	Tingha
	landfill	Ben Lomond
	sanitary depot	Guyra
USC	landfill and recycling centre	Uralla
	landfill and recycling centre	Bundarra
	landfill	Kingstown
WC	landfill and recycling depot	Walcha
	landfill	Nowendoc
	landfill	Woolbrook

7.2.2 Waste Collection Services

Waste collection services were operated in each of the Southern New England Region Council areas during 2008-2009. The following Table shows the number and type of services operated by each Council during 2008-2009 and a comparison of total collection services operated from 2003-2004 to 2008-2009.

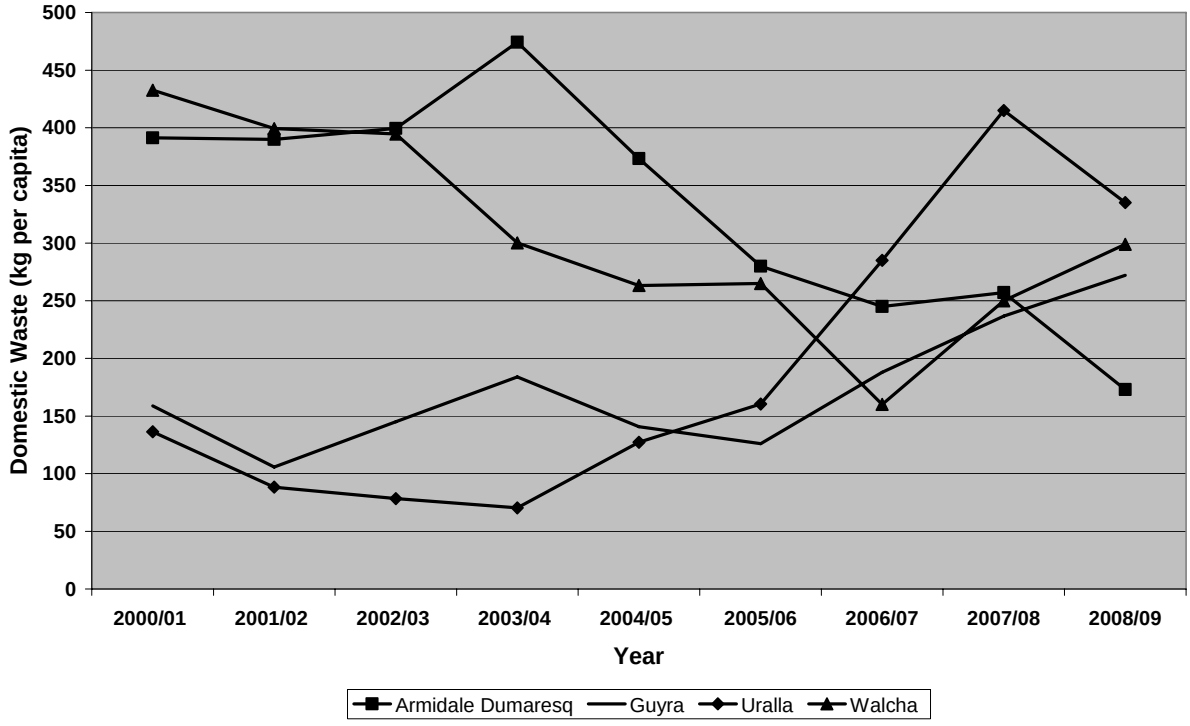
Table 17: Number and Types of Waste Collection Services by LGA

Number / Type of Waste Collection Service	ADC	GSC	USC	WC
domestic	8555	1017	1470	767
commercial	760	128	176	193
other		7	27	10
Total number of services in 2008-2009	9315	1152	1673	970
Total number of services in 2003-2004	7660	1266	1381	832

7.2.3 Waste Generation and Disposal

Domestic waste generation across the Southern New England Region is measured to allow comparisons over time for the amount of domestic waste generated per capita and the total amounts of domestic waste deposited to landfill. Figure 29 shows comparative data for domestic waste generated per capita for the four Southern New England Region Councils since 2000-2001. The longer term averages for domestic waste generation per capita for both Armidale and Walcha have fallen since 2000-2001, while Guyra and Uralla have both increased over the same period. Uralla did experience a decline in per capita waste generation during 2008-2009, however the current per capita average is still above 2000-2001 levels.

Figure 29: Domestic Waste per Capita (2000-2001 to 2008-2009)



The total amount of domestic waste deposited to landfill for each local government area during 2008-2009 was as follows:

ADC 4376 tonnes* (14035 tonnes total waste deposited to landfill)
GSC 1199 tonnes (1213 tonnes total waste deposited to landfill)
USC 2011 tonnes (2865 tonnes total waste deposited to landfill)
WC 980 tonnes
(* domestic waste collected by JR Richards collection service)

7.2.4 Recycling

Recyclable materials are measured in a similar way to domestic waste to allow comparisons between Councils over a number of years. Table 17 shows the total amount of recyclables collected by each Council during 2008-2009. Figures are not available to provide a comparison to the reported amount of recyclables being collected at the time of the last Comprehensive Report in 2003-2004. Table 18 shows an approximate breakdown of the types of recyclable materials collected during the current reporting period.

Table 18: Amount of Recyclables Collected (2008-2009)

LGA	Recyclables (tonnes)	Green Waste
ADC	12786	3740 tonnes
GSC	233	~ 800 tonnes
USC	1911	1450 tonnes
WC	485	~ 1000m^3

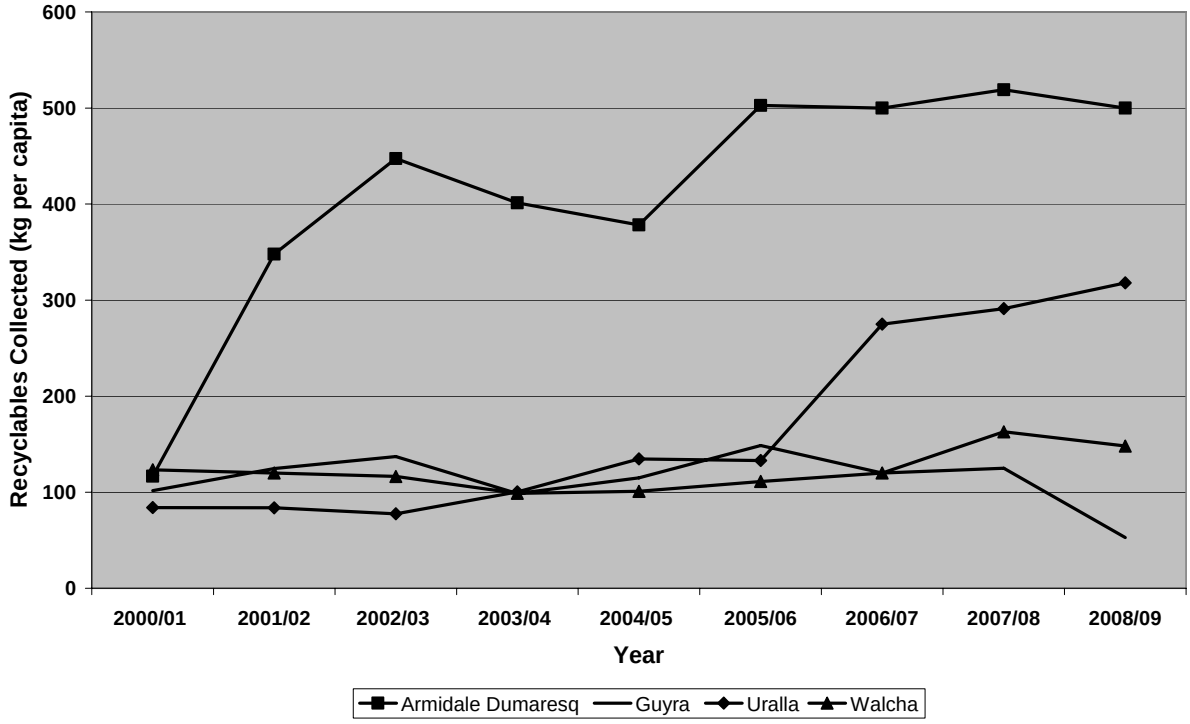
Table 19: Recyclables by Type in 2008-2009 (approximate % values)

Recyclables	Approximate % of Material per LGA			
	ADC*	**GSC**	**USC**	**WC**
Metals	1.4		16	25
Paper/Cardboard	73.3	57	61	40
Glass	21	34	14	15
Plastics	4.3	5	8	10
Aluminium		4	0.3	
Batteries			0.7	
Other				10

(* ADC figures refer to materials collected by Council kerb side pick-up service and do not include other recyclable materials delivered to Council's waste management facility, such as 363.8 tonnes of metals)

Figure 30 shows comparative data of recyclables per capita for the four Southern New England Region Councils since 2000-2001.

Figure 30: Recyclables per Capita (2000-2001 to 2008-2009)



7.3 WASTE AND RESOURCE RECOVERY ISSUES AND ACTIONS

Activities and issues that impact, or create pressure with respect to waste, waste management and resource recovery in the Southern New England Region are broadly identified as:

- domestic waste production
- levels of recycling
- operation of waste management facilities
- impact of waste on the environment
- pollution
- sewage

A significant waste management issue arising toward the end of the 2007-2008 reporting period was heightened community opposition to the proposed Regional Landfill east of Armidale, with concerns centred around the potential impact of the proposed facility on World Heritage listed sites further downstream. These concerns are being addressed in the Environmental Assessment and planning processes which continued during 2008-2009.

7.3.1 Council Actions

The following Table provides a summary of actions that were implemented by each of the Councils during 2008-2009 in response to pressures identified above.

WASTE MANAGEMENT AND RESOURCE RECOVERY ACTIONS 2008-2009	
Domestic Waste Production	**Armidale Dumaresq Council** Strategies aimed at waste minimisation included development of promotional material through NIRW group including personal ashtrays and car tidy bags, along with a TV advertisement encouraging landowners to clean up rubbish on their properties. **Uralla Shire Council** Council staff are currently undertaking research in to the future viability of providing an automated recycling collection service using 240 litre wheelie bins and providing 120 litre bins for general waste **Walcha Council** Council's waste minimisation actions included continued contact with school groups and local media to encourage recycling, DrumMuster, waste reduction and other initiatives. Anecdotal evidence suggests a continued improvement in public usage of recycling facilities and tidy use of the landfill.
Recycling	**Armidale Dumaresq Council** Council runs a second hand shop for used goods, processes green waste into mulch, processes concrete into two grades of crushed concrete, metal is collected and sold and wood waste is chipped for use at the landfill. In doing so, 100% of the green waste and concrete is processed and sold, and all wood waste is used as a cover material to reduce wind blown litter at the landfill. Through its Waste Management Committee, Council has commenced discussions with Armidale Recycling Services for potential implementation of a commercial and industrial recycling service, similar to the existing domestic service for Armidale residents. Council continues to collect and process electronic waste components (e-waste) with 81 tonnes processed for reuse or recycling during 2008-2009. Council collected 2882 drums for recycling through the Drum Muster program. Council has established sharps collection bins in Armidale Fluorescent bulb collection points have been established and operate at two local lighting shops.

Recycling (continued)	**Uralla Shire Council** Council is investigating viability of providing an automated recycling collection service using 240 litre wheelie bins and providing 120 litre wheelie bins for general waste **Walcha Council** Council collected 4040 drums through the Drum Muster program along with conducting education programs associated with Drum Muster.
Landfill Operation	**All Councils** Continued membership of the Northern Inland Regional Waste Group, which have been involved in projects concerning chemical collection, drum muster, green waste processing, concrete crushing, metal collection, battery collection, oil and paint collection, florescent lighting collection, Carbon Pollution Reduction Scheme (CPRS) and Emission Trading Scheme (ETS), study for Long Swamp Road landfill, sharps disposal bins, true cost of landfill study, educational material and road signs to reduce litter. All Councils have benefited from membership of this regionally based group through improved bargaining power on contracts (e.g. metal sales, green waste mulching, etc.) and greater access to promotional and educational material. **Armidale Dumaresq Council** Investigating options for alternative waste technology facility to stabilise residual waste and possibly compost organics. Rehabilitation of the former Tilbuster landfill was undertaken to meet Department of Environment, Climate Change and Water requirements **Guyra Shire Council** Sale of recyclable materials, including steel, aluminium, plastics and cardboard/paper. **Uralla Shire Council** During 2007-2008 Uralla Shire Council commenced regulated open hours and staffing of the Bundarra landfill which has resulted in a general decrease in waste going to landfill and an increase in recycling from this facility. **Walcha Council** Council has conducted sale of recyclable materials, including green waste and cardboard/paper.

Impact of Waste on the Environment	**Armidale Dumaresq Council** 85 Category 1 Trade waste inspections were completed during 2008-2009.. 8 incidents of non-compliance were detected, requiring re-inspection. All follow up inspections were satisfactory. **Uralla Shire Council** Council undertakes quarterly monitoring of methane levels, water quality / quality assurance at its Uralla landfill. The landfill continues to operate in accordance within its environmental protection license requirements. **Walcha Council** Council undertakes monitoring of surface water, groundwater, leachate analyses in accordance with environmental protection license conditions. The landfill continues to operate in accordance within its environmental protection license requirements. Council conducted trade waste inspections during 2008-2009.
Pollution	**Armidale Dumaresq Council** Received 16 pollution complaints related to waste in 2008-2009. - 56% of these were related to potential or actual pollution of waterways, with the remaining 44% being reports of rubbish on properties (i.e. not making use of regular Council collection services). - 78% of pollution of waterways incidents ware investigated with in 24 hours, with the remaining 22% investigated within 48 hours. For rubbish reports, 42% were investigated within 24 hours, 29% within 48 hours and the remaining 29% within one week. As a result of investigations, Penalty Infringement Notices were issued for the following: - pollution of Dumaresq Creek via diesel and oil wash down flowing into Council's roadside gutter from vehicle servicing premises. - pollution of Council's stormwater system via wash down of metal parts coated with toxic compounds at vehicle repair premises. - significant discharge of raw effluent into Council's roadside gutter and stormwater system by a plumber servicing blockage at residential premises (note: clean-up costs were awarded but no penalty issued). **Guyra Shire Council** Six (6) separate incidents of rubbish found either in travelling stock route or road reserve. Where identification information was found within the rubbish, investigations were made to identify the alleged offender/s who were then questioned and depending on the circumstances, arrangements were made for waste to be removed and disposed of in the normal way. For non-identifiable waste, it was removed and disposed of at the appropriate landfill or transfer station. **Uralla Shire Council** One (1) incident of illegal dumping was detected and a Penalty Infringement Notice was issued.

Sewage	**Armidale Dumaresq Council** Council undertakes monitoring of ground water, surface water, surface and sub-surface soils at its Sewage Treatment Plant. Effluent and bio-solids are analysis before application to land. Council initiated analysis of a suspected leak from maturation ponds. Preliminary evidence suggests it is not likely to be effluent, but rather more likely to be groundwater. Approximately 50% of all effluent is reused in agriculture - cropping and pasture. Following a recent Infiltration Study of water entering the sewage system, Council initiated catchment investigations during high rainfall events to isolate catchments with inflow and infiltration problems. **Guyra Shire Council** There were no incidents of non-compliance with environmental protection license conditions relating to Council's sewer treatment facility. **Uralla Shire Council** Council detected one sewer overflow in the vicinity of Mt Mutton from a main sewer reticulation trunk line. Discharge was found to have occurred from a specific manhole. Infiltration by tree roots contributed towards blockages which resulted in the surcharge. Subsequent clean up works were undertaken within 24 hours, resulting in minimal pollution of adjacent water course. **Walcha Council** Council undertakes monitoring of its sewer treatment facility in relation to secondary effluent BOD, TSS, pH and tertiary effluent pH, oil & grease, BOD, TSS, TP, TN, conductivity, NH3, Kjeldahl N, Nitrate & Nitrite, Chlorophyll-a and total coliforms. Results for 2008-2009 are similar to previous years with slightly reduced nutrient levels and more consistent BOD and TSS levels and generally higher Chlorophyll-a levels.

SECTION 8 – NOISE

8.1 INTRODUCTION

Noise pollution and issues associated with noise generation are generally not significant environmental problems across the Southern New England Region. A number of noise complaints are usually received by the respective Councils each year, but historically these tend to be isolated incidents or noise related to an identifiable point source. There has been no noticeable change to this situation during the 2008-2009 reporting year.

At present, there is no regular noise monitoring undertaken by any of the Councils or Department of Environment, Climate Change and Water (DECCW). Any monitoring that is carried out is usually in response to complaints or specific issues. Land use zoning within the four urban areas of Armidale, Guyra, Uralla and Walcha, and consideration of potential noise generation during the development assessment process also helps to confine potentially noisy activities to suitable areas and aims to ensure appropriate operation of such activities. In addition, all Councils endeavour to respond promptly to noise complaints to minimise potential impacts on residents and the environment.

The predominant issue in the Southern New England Region with regard to noise pollution continues to be barking dogs.

8.2 NOISE IN THE SOUTHERN NEW ENGLAND REGION

The following indicators have been established to monitor the state, or condition, of noise within the Southern New England Region. This section provides an up-date on the indicators for 2008-2009 and outlines any significant trends.

8.2.1 Noise Monitoring

In many cases noise monitoring is undertaken by Council staff as a response to noise complaints and to determine if the noise is offensive. If the noise is considered to be offensive then actions are put in place to minimise any adverse impacts. Following are details of specific noise monitoring undertaken during 2008-2009.

Armidale Dumaresq Council

Monitoring of a refrigeration compressor at a local bottleshop was conducted over one evening to assess the decibel level of the compressor motor compared with normal background levels. The recorded data was never required to be analysed as simultaneous engagement with the premises owner resulted in a timer being installed on the motor to restrict operation times. This outcome has since proved satisfactory to both the complainant and the premises manager.

Noise monitoring was undertaken by ERM Australia in September 2008 following Councils requirement for Kleenheat Gas to provide an acoustic report for its depot. The request for an acoustic report was in response to ongoing noise being heard from the Kleenheat depot in the industrial estate by nearby residents. Council issued a Noise Control Notice to Kleenheat Gas to control noise emissions from the depot.

Guyra Shire Council
Guyra Shire Council has not undertaken any specific noise monitoring during 2006-2007 to 2008-2009. Council does however continue routine investigation and follow-up checks on noise complaints, generally from barking dogs.

Uralla Shire Council
Monitoring was undertaken as part of Council's standard operating procedure in response to noise complaints to establish if a complaint was valid. In most cases where a complaint was verified the occupier of the premises (noise source) was interviewed and a warning (verbal or in writing) issued. In some cases an Order was issued. None of the noise complaints received by Council resulted in Court action being required during 2008-2009.

Walcha Council
Walcha Council undertook noise monitoring during 2008-2009 in response to a complaint relating to a commercial operation. Notices were served on the occupier to install specific noise reducing equipment.

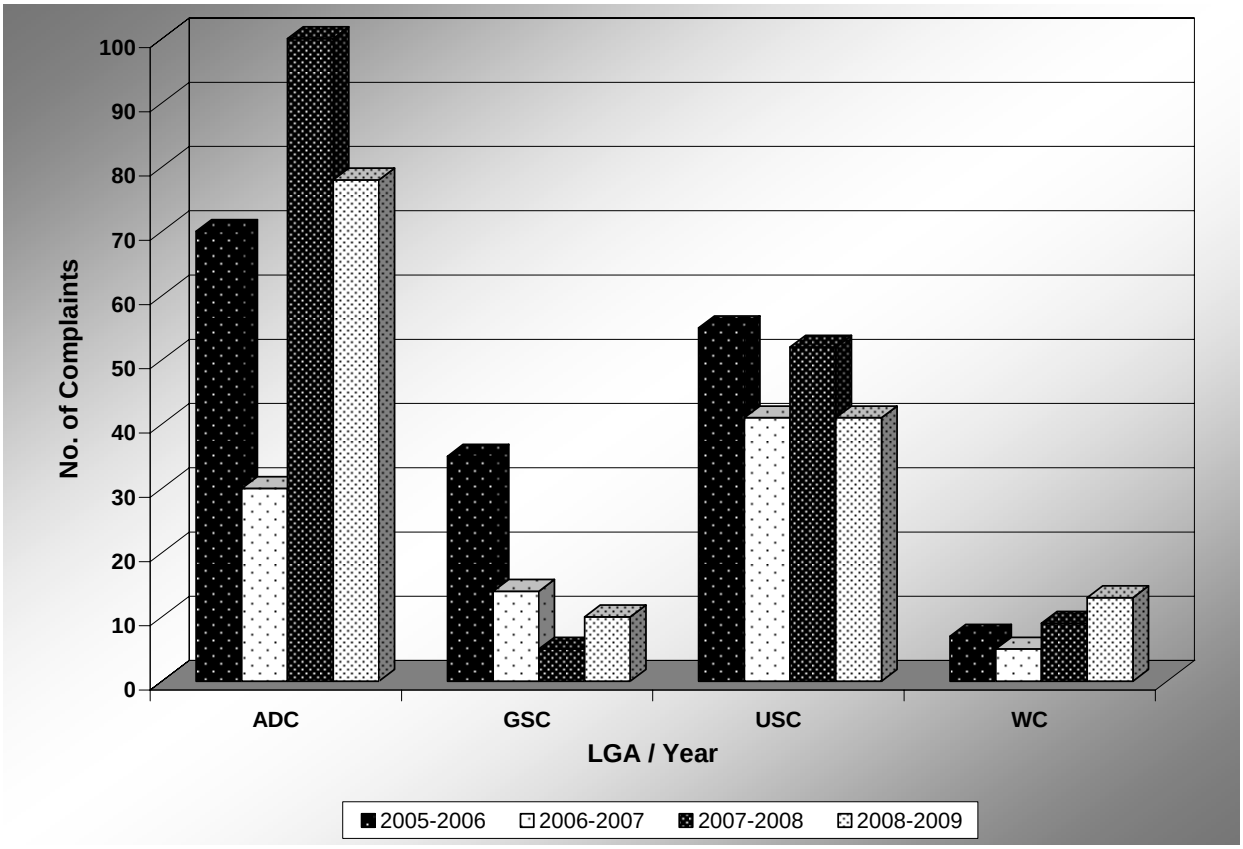
8.2.2 Noise Complaints

The total number of noise complaints received by Councils across the Southern New England Region over the last four (4) reporting periods has averaged at 141 complaints per year. In 2008-2009 a total of 142 complaints were received compared to 166 in 2007-2008, 90 in 2006-2007 and 167 in 2005-2006.

The number of noise complaints received by Armidale Dumaresq Council and Uralla Shire Council fell in 2008-2009 compared to 2007-2008, while Guyra Shire and Walcha Councils both experienced increased numbers of noise complaints over the same period, albeit for a generally low number of complaints in both cases.

Details relating to the number of complaints received by each Council and the trend in complaint levels over the last four reporting periods is shown below in Figure 31.

Figure 31: **Noise Complaints Received by Councils Across the Southern New England Region**

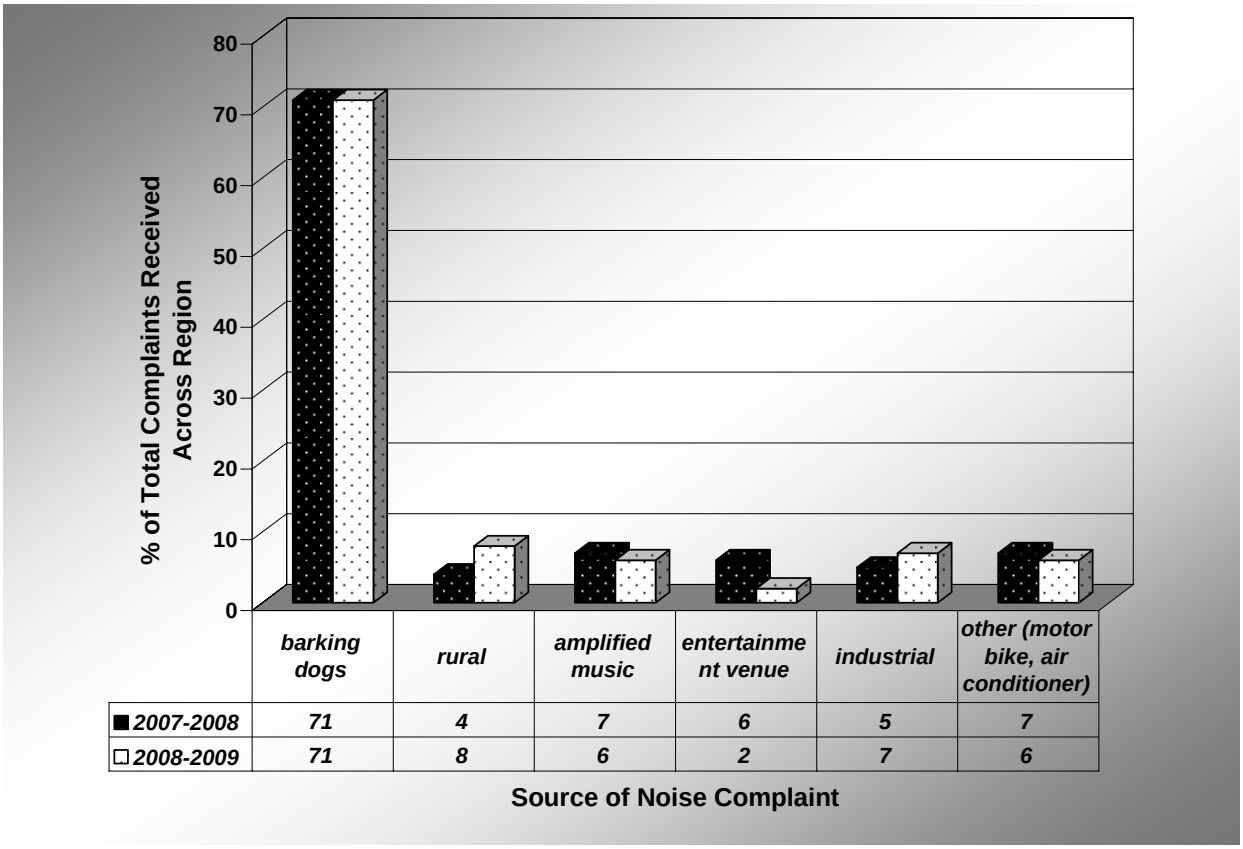


Across the Southern New England Region, the majority of noise complaints continue to come from barking dogs, remaining at 71% of all noise complaints. Both Armidale Dumaresq and Uralla Shire Councils experienced a reduction in the number of noise complaints from barking dogs in 2008-2009 compared to the previous reporting period (10 and 17 respectively), while Guyra Shire and Walcha Councils received an increased number of noise complaints relating to barking dogs over the same period (5 and 4 respectively). These figures correspond with trends in the overall number of complaints received across the Region, highlighting the issue of barking dogs as the major source of noise complaints within the Region.

Other noise complaints were received in relation to rural noise, amplified music, entertainment venues, industrial activity or other sources including refrigeration units and motor bikes. The overall number of complaints relating to these sources has remained relatively low for the last two reporting periods.

Figure 32 below shows the percentage (%) of total noise complaints by source received by the Councils across the Southern New England Region during 2007-2008 and 2008-2009.

Figure 32: **Percentage of Total Noise Complaints by Source Across the Southern New England Region for 2007-2008 and 2008-2009**



8.2.3 Environment Protection Licences

There are seven (7) premises in the Southern New England Region that have environment protection licences issued under Section 55 of the *Protection of the Environment Operations Act 1997* with conditions relating to noise. The following Table identifies the premises with noise licence conditions and any incidents of non-compliance with licence conditions for annual licence returns submitted during 2008-2009.

Table 20: Environment Protection Licences - Noise

Lic. No.	Activity / Licensee	Compliance with License Conditions
Armidale Dumaresq LGA		
5860	Waste Management Facility (Armidale Dumaresq Council)	complied
11319	Armidale Hospital (Hunter New England Health Service)	no longer in force
921	Hillgrove Mine (Straits (Hillgrove) Gold Pty Ltd	1 incident of exceeding ambient noise criteria
12481	Metz Quarry (Boral Resources)	complied
12123	Armidale Airport Helicopter Activities (Armidale Dumaresq Council)	complied

Guyra LGA		
11792	Guyra Quarry (Inverell Aggregate Supplies)	complied
Uralla LGA		
5899	Landfill (Uralla Shire Council)	complied
Walcha LGA		
6120	Waste Depot (Walcha Council)	complied

8.3 NOISE ISSUES AND ACTIONS

8.3.1 Noise Sources

While noise is not considered to be a significant environmental issue within the Southern New England Region, the following sources and impacting activities have been broadly identified as those that create pressure on the environment in respect to noise:

- barking dogs
- transport (including airport and aircraft noise)
- industry
- waste management activities and facilities
- noise from rural activities
- urban noise (including loud music, air-conditioners, etc.)

No additional activities or noise related issues (pressures) have been identified during 2008-2009.

8.3.2 Response to Noise Issues

Councils' general response to noise issues can be categorised into the following areas:

- strategic land use planning
- on-site noise reduction techniques
- policies and guidelines developed by state and local government organisations
- maintenance of noise complaints register and protocols to deal with all serious noise complaints expeditiously.

The following Table provides a summary of actions that were being implemented by each of the Councils during 2008-2009 in response to noise related issues.

NOISE ACTIONS 2008-2009

Land Use Planning / Policies and Guidelines

All Councils
The Councils have continued with preparation of a regional based local environmental plan which will reinforce appropriate land use zoning and development controls for potential noise generating activities.

Ensure assessment of potential noise generating activities and apply appropriate consent conditions, as required, when considering development applications.

Armidale Dumaresq Council
Council has identified a potential issue with respect to highway and airport noise and the regulation / enforcement of noise attenuation measures in new dwellings approved as Complying Development under *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*. Negotiations to resolve this issue are on-going with the NSW Department of Planning.

Responding to Complaints

Armidale Dumaresq Council
For noise complaints, other than those relating to barking dogs, an on-site inspection and assessment is firstly conducted. In all cases, relevant parties were engaged verbally and the complaints were resolved.

The following Table shows a breakdown of noise complaint investigations in terms of type and response time for 2008-2009.

Noise Source	**< 24 hours**	**< 48 hours**	**> 72 hours**
Amplified Music	50%	17%	33% (all within three weeks)
Industrial Noise	50%	-	50% (within one week)
Other	25%	-	75% (within one week)

Uralla Shire Council
The following steps are following in responding to noise complaints:

(i) validate the complaint, determine where the noise is being generated and if it is 'offensive'.
(ii) interview the occupier of the premises.
(iii) advise complaintant of outcome and request further information (evidence) if the offensive noise continues. Evidence would need to detail days/times and duration of the offensive noise. Upon receipt of the information an Order would be served.

Four (4) nuisance orders were issued for barking dogs during 2008-2009.

Walcha Council
A consultant was engaged to undertake noise monitoring for the complaint relating to a commercial premises.

Barking Dogs

Armidale Dumaresq Council
Issue nuisance orders for dog related noise, hire out anti-barking collars and/or sell husher muzzles

	2006-2007	2007-2008	2008-2009
issue nuisance order	18	15	1
anti-barking collars	10	-	-
Husher muzzels	16	-	11

Guyra Shire Council
The main method of responding to complaints about barking dogs was firstly to make the owners aware of the issue. Nearly all barking cases occurred when the dog was left at the property unattended by the owner or carer. Council staff would liaise with the owners to educate them about behavioural methods and physical methods that were available to prevent nuisance in the future and also investigate the possibility of an outside source (neighbours dogs, pets, traffic, harassment, etc.) contributing to the issue. If after initial contact and discussion there is no improvement from the original complaints, seek compliance through notices to owner.

In the majority of cases, once the problem was identified the owner changed the scenario which caused the dog to bark and in one case the dog was relocated to a rural location away from neighbours.

Uralla Shire Council
Rangers talk to dog owners firstly then issue a warning and advise methods of controlling barking. If called back to the same premises again then a nuisance order is actioned.

Issuing of nuisance orders for dog related noise, hire out anti-barking collars and/or sell husher muzzles

	2006-2007	2007-2008	2008-2009
issue nuisance order	3	5	4
anti-barking collars	-	-	-
Husher muzzels	11	-	8

Walcha Council
Complaints are actioned within 24 hours of the complaint being received and the action taken depends on the nature of the problem.

	2006-2007	2007-2008	2008-2009
issue nuisance order	n/a	-	-
anti-barking collars	n/a	-	3
Husher muzzels	n/a	8	-

SECTION 9 – ABORIGINAL HERITAGE

9.1 INTRODUCTION

Aboriginal and Torres Strait Islander cultures are complex and diverse. Indigenous communities have kept their cultural heritage alive by passing their knowledge, arts, rituals and performances from one generation to another, speaking and teaching languages, protecting cultural materials, sacred and significant sites, and objects.

Aboriginal heritage includes places and items that are important to the local Aboriginal community. These are places or objects that people have a connection to, both physically and spiritually. Aboriginal heritage can include natural features such as creeks or mountains, ceremonial or story places or areas of more contemporary cultural significance such as Aboriginal missions or post contact sites.

Aboriginal places and objects are an important part of the rich heritage of NSW and should be protected for future generations due to their significance to Aboriginal communities and because of the links they provide to culture, the environment and knowledge.

9.2 THE STATE OF ABORIGINAL HERITAGE

The extent of Aboriginal heritage can sometimes be difficult to ascertain due to sensitivities associated with identifying sites of significance. Within this context, the environmental indicators outlined below have been identified to assess and monitor the state, or condition of the environment with respect to Aboriginal Heritage. This section provides up-dated data for the respective environmental indicators for 2008-2009 and outlines any significant trends.

9.2.1 Population

The 2006 Census data from the Australian Bureau of Statistics shows that the Aboriginal population in the Southern New England Region at that time was 2,181. The total Indigenous population for the region has grown by 703 people (48%) since the 1991 Census. In addition to the growth in population, the percentage of the Aboriginal population has also increased across the Region, and at the 2006 Census made up 5.9% of the total population. The proportion of indigenous people living in the Southern New England Region at the 2006 Census was higher than the Australian proportion of 2.3% and the NSW proportion of 2.1% of the total population.

Table 21: Aboriginal Population Statistics

		ADC	GSC	USC	WC	TOTAL
1991 Census	Male Indigenous	419	171	76	76	742
	Female Indigenous	448	154	66	68	736
	Total Indigenous	867	325	142	144	1478
	Total Area Population	25271	4724	5881	3589	39553
	% of Pop. Indigenous	**3.4**	**6.9**	**2.4**	**4.1**	**3.7**
1996 Census	Male Indigenous	515	173	134	83	905
	Female Indigenous	559	165	132	77	933
	Total Indigenous	1074	338	266	160	1838
	Total Area Population	25003	4262	5871	3248	38546
	% of Pop. Indigenous	**4.3**	**7.9**	**4.5**	**5**	**4.8**
2001 Census	Male Indigenous	614	227	162	89	1092
	Female Indigenous	627	184	132	84	1027
	Total Indigenous	1241	411	294	173	2119
	Total Area Population	23920	4206	5739	3155	37234
	% of Pop. Indigenous	**5.2**	**9.8**	**5.1**	**5.6**	**5.7**
2006 Census	Male Indigenous	590	216	157	95	1058
	Female Indigenous	645	215	171	92	1123
	Total Indigenous	1235	431	328	187	2181
	Total Area Population	23927	4177	5649	3199	36952
	% of Pop. Indigenous	**5.2**	**10.3**	**5.8**	**5.8**	**5.9**

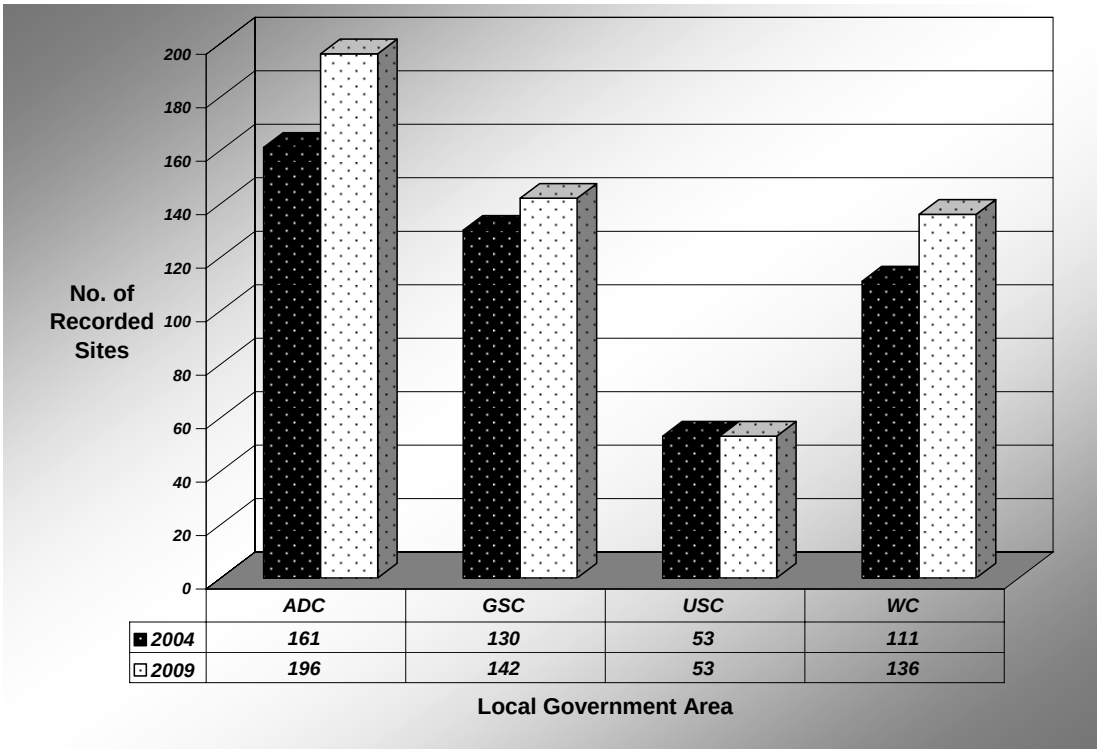
9.2.2 Number of Identified Aboriginal Sites

The Aboriginal Heritage Information Management System (AHIMS) lists Aboriginal sites within NSW and records their location and any appropriate access restrictions to ensure their protection.

The NSW Department of Environment and Climate Change have advised that during 2008-2009, 23 sites were added to the AHIMS across the Southern New England Region, consisting of 17 sites in Armidale Dumaresq, 5 sites in Guyra Shire and 1 new site in the Walcha local government area. No new sites have been added in the Uralla Shire since 2004. Since the 2004 Southern New England Tablelands Region State of the Environment Report, a total of 72 new sites have been added to the AHIMS across the Region.

The following figure shows the number of recorded sites on the AHIMS in 2004 and 2009 by local government area.

Figure 33: **Number of Sites Recorded on Aboriginal Heritage Information Management System (AHIMS) in 2004 and 2009 by LGA**
(Source: NSW Department of Environment and Climate Change)



It should be noted that the AHIMS database only includes recorded sites. Large areas of NSW have not been subject to systematic survey or the recording of Aboriginal history. These areas may contain sites that are not listed on the Aboriginal Sites Register.

9.2.3 Number of Heritage Studies

In 2008-2009 the Aboriginal Heritage Office (North Sydney) prepared the following documents for Armidale Dumaresq Council:

Armidale Dumaresq Aboriginal Site Management Report 2008
The aims of this report are to:

- identify, access and re-record all known Aboriginal sites located in the Council area, where possible;
- provide a planning document for conserving Aboriginal cultural heritage values;
- provide a schedule for conservation works.

The report comprises management recommendations for existing and potential sites in the Armidale Dumaresq local government area. It provides information on the aims and objectives of the report, the Aboriginal Heritage Office, legislative responsibilities for Aboriginal heritage management, a brief Aboriginal history of the area, the number and type of Aboriginal sites recorded, criteria for assessing Aboriginal heritage potential and results of the current recording and monitoring program. There are 171 known sites recorded by the report within the Armidale Dumaresq local government area.

Armidale Dumaresq Aboriginal Potential Areas Report 2008
The purpose of this report is to identify and define areas of potential Aboriginal archaeological heritage located in Armidale Dumaresq. The report also provides strategies and recommendations for Council staff to ensure that Aboriginal heritage is properly considered during the planning stage of development – both private and Council activities. The report is a substantial first step toward potential area mapping. However, it should not be seen as an end result as unrecorded Aboriginal sites will continue to be identified and sites, site boundaries and potential area boundaries will continue to be refined as archaeological models improve and our understanding of Aboriginal heritage grows (Aboriginal Potential Areas Report 2008).

The Site Management Report and Potential Areas Report were presented to Armidale Dumaresq Council in 2008. Council is now working on implementation procedures, noting that the report findings and site identification information cannot be made public

The Aboriginal Heritage Office also completed a local Aboriginal History Project in Armidale with the assistance of the Armidale Elders Congress. The aim of the Project is to provide an insight into the Aboriginal history of Armidale.

A Memorandum of Understanding between the Aboriginal Heritage Office and Armidale Dumaresq Council continues until March 2010 with further training, survey work and community education programs to continue until then.

Walcha Council
Council has continued to prepare its Community Based Heritage Study that will incorporate Aboriginal Heritage. The Study is expected to be completed by December 2009.

9.2.4 Permits Issued Under National Parks and Wildlife Act 1974

The NSW Department of Environment and Climate Change (DECC) is responsible for approving and issuing permits under sections 87 and 90 of the *National Parks and Wildlife Act 1974*. An Aboriginal Heritage Impact Permit (AHIP) is the statutory instrument that DECC issues under sections 87 and/or 90 to manage impacts on Aboriginal cultural heritage objects and places.

Under section 87 of the Act, an AHIP is required if an Aboriginal object is to be disturbed or moved, or land is to be disturbed for the purposes of discovering an Aboriginal object. Under section 90 of the Act, an AHIP is required if an Aboriginal object or Aboriginal place is to be destroyed, damaged or defaced. Permits are required for work that could impact on Aboriginal heritage either positively or negatively.

During 2008-2009, one (1) Section 87 was received by DECC and one (1) Section 90 was issued for the Armidale Dumaresq local government area.

9.3 ABORIGINAL HERITAGE ISSUES AND ACTIONS

9.3.1 Pressures Affecting Aboriginal Heritage

There are many issues and activities (pressures) affecting the preservation and management of Aboriginal Heritage, such as a limited understanding and knowledge of Aboriginal culture and heritage and limited knowledge regarding the location of significant sites.

Activities and issues that have been identified as potentially impacting or creating pressure on Aboriginal heritage in the Southern New England Region include:

- limited knowledge of Aboriginal sites and areas of significance
- loss of cultural heritage
- preservation of identified Aboriginal sites and artefacts
- understanding between Aboriginal and non-Aboriginal people

9.3.2 Council Actions

The following section details the actions that were undertaken by the respective Councils during 2008-2009 in relation to Aboriginal heritage and in response to the pressures on Aboriginal Heritage within their local government area.

ABORIGINAL HERITAGE ACTIONS 2008-2009	
Limited Knowledge of Aboriginal Sites and Areas of Significance	**Armidale Dumaresq Council** During 2008-2009, Council became a full partner with the Aboriginal Heritage Office, North Sydney, alongside other metropolitan councils including Ku-ring-gai, Lane Cove, North Sydney, Manly, Pittwater, Warringah and Willoughby. Armidale Dumaresq is the only regional Council invited to be part of the Partnership. The Partnership provides Council with expertise in identifying, preserving, and promoting local Aboriginal cultural heritage. In addition to the projects outlined in Section 9.2.3, the Aboriginal Heritage Office have been involved in an Aboriginal site survey (Scholes Street, Armidale), a schools education program and training of Council planning staff in use of the Site Management Plan and the Potential Sites Plan. Ten (10) staff attended Aboriginal Heritage training conducted by the Aboriginal Heritage Office. **Walcha Council** Council is continuing with its Community Heritage Study which incorporates Aboriginal Heritage. The study is expected to be completed by December 2009.

Loss of Cultural Heritage	**Armidale Dumaresq Council** The Aboriginal Heritage Office has worked with the Armidale Elders Congress to complete a local Aboriginal History Project. Council has been involved in events to recognise and promote Aboriginal heritage within the area including NAIDOC Week, Reconciliation Week, 1st anniversary of the Apology and work with the Gayinyaga Aboriginal Advisory Committee to identify the traditional owners of the area. Council is also working with the Gayinyaga Committee to establish Welcome Signs at the three entry points to Armidale. **Guyra Shire Council** Council participated in official functions to recognise NAIDOC Week
Preservation of Identified Aboriginal Sites and Artefacts	**All Councils** Preparation of the New England Development Strategy and draft regional Standard Instrument local environmental plan has continued during 2008-2009 (see also Section 3.3.2) **Armidale Dumaresq Council** The development of a Sites Management Plan and a Potential Sites Plan provides Council with a database of known local Aboriginal scared and significant sites, and greater knowledge regarding the process of identification of new sites. This information will provide Council staff with detailed information about known local Aboriginal sites and will assist in the recognition, protection and preservation of these local sites. **Walcha Council** The Walcha Community Heritage Study will be used to inform future decisions on the management and preservation of identified sites of Aboriginal significance

Understanding Between Aboriginal and Non-Aboriginal People	**Armidale Dumaresq Council** Council employs an Aboriginal Community Liaison Officer, who in addition to a number of other activities during 2008-2009 has negotiated with the Aboriginal Heritage Office for Armidale Dumaresq Council to become a member of the Partnership, facilitated the implementation of Council's Aboriginal Action Plan 2007-2011 and organised and hosted the 2008 Local Government Aboriginal Network Conference. Council strongly supports the Gayinyaga Aboriginal Advisory Committee, of which the Mayor is the Deputy Chair. Through it's Aboriginal Action Plan, Council supports celebrations like NAIDOC Week and Reconciliation Week that help highlight Aboriginal heritage and achievement. Council also hosted a celebration for the 1st anniversary of the Apology. Council supports the Gayinyaga Aboriginal Advisory Committee which meets monthly and provides a link between Council and the local Aboriginal community. Council also supports the Aboriginal Interagency, which meets bi-monthly. **Walcha Council** Council employs an Aboriginal and Torres Strait HACC worker who works with the aboriginal community. Regular meetings are held between Council and the Amaroo Local Aboriginal Land Council

In addition to the activities outlined above, Armidale Dumaresq Council has also been involved with the following during 2008-2009:

- Council hosted the 2008 NSW Local Government Aboriginal Network Conference which is an annual conference held for Aboriginal workers employed in Local Government.
- Council participates in a School Based Traineeship which enables a young local Aboriginal Armidale High School student to work with the Council's Aboriginal Community Liaison Officer for one day per week, and for one third of school holidays. The traineeship provides an opportunity for the participant to have first hand experience in the work place, and concludes with a Certificate in Administration, as well as their completed HSC.
- Council also supports Governance Training for members from the local Aboriginal community.
- implementation of the Armidale Dumaresq Council Aboriginal Action Plan 2007-2011.

SECTION 10 – NON-ABORIGINAL HERITAGE

10.1 INTRODUCTION

The Southern New England Tablelands region has an extensive and diverse non-aboriginal heritage. There is a strong awareness and appreciation of heritage in the region as reflected in the preparation of heritage studies, restoration of heritage buildings, design of new buildings in a manner sympathetic to surrounding heritage items, and public education and promotion of heritage.

10.2 THE STATE OF NON-ABORIGINAL HERITAGE

The following indicators have been reported and monitored in previous state of the environment reports for the Region to provide an indication as to the state or condition of non-aboriginal heritage in the Southern New England Region.

- number of heritage studies undertaken
- number of listed heritage sites
- level of funding obtained for heritage based projects
- number of Interim Heritage Orders issued.

Over recent years, additional measures of the state on non-Aboriginal heritage have been incorporated into supplementary state of environment reports. These indicators are:

- activities of Council's Heritage Advisor
- details of museum visitation

The following section provides an up-date on the indicators for 2008-2009 and outlines any significant trends over the period that the indicators have been reported.

10.2.1 Heritage Studies

Uralla Shire Council has commenced a community based Heritage Study which is expected to be completed in October 2009.

Walcha Council has continued preparation of a Community Based Heritage Study that commenced in 2005-2006 and is now expected to be completed by December 2009. The study is being undertaken in conjunction with the NSW Heritage Branch.

Armidale Dumaresq Council has completed a review of items identified in the former Dumaresq Shire Heritage Study with a recommendation that 15 items be included in Armidale Dumaresq Local Environmental Plan 2008 – Schedule 2 – Heritage Items.

Armidale Dumaresq Council has also completed an Aboriginal Cultural Heritage Study during 2008-2009 – refer to Section 9 for further details.

10.2.2 Heritage Items / Archaeological Sites

Local Heritage Items
Items of local heritage significance are listed in the local environmental plan of the respective Councils. None of the Council's local environmental plans were amended during 2008-2009 to include additional heritage items.

Armidale Dumaresq Council and Council's Heritage Advisor have completed an inspection and review of 44 potential additional items identified in a former Dumaresq Shire Heritage Study, with a recommendation that 15 be included as Heritage Items in the Armidale Dumaresq Local Environmental Plan 2008 – Schedule 2.

State Heritage Register
There are 27 items listed on the NSW State Heritage Register across the Southern New England Region. No new items were added to the Register in 2008-2009.

Archaeological Sites
A Draft (European) Archaeological Management Plan for Armidale was commenced by the University of New England in 2004, but has not yet been completed. The Plan has now been handed over the Council and its Heritage Advisor and is expected to be completed during 2009-2010. When completed, this Plan is expected to augment Local Environmental Plan provisions to safeguard and manage archaeological resources during the development process.

Conservation Management Plans
One conservation management plans was prepared during 2008-2009 for the Ursuline Convent at 131 Barney Street, Armidale.

10.2.3 Funding

The availability, or lack of, external funding for heritage projects has previously been identified as a significant issue affecting non-aboriginal heritage in the region. The level of funding that is provided for heritage projects gives an indication of the extent of government and community involvement in, and support for, the preservation of heritage items and values.

Funding for heritage projects is traditionally provided via various grant funding opportunities throughout the year. Details of funding received by Councils for heritage projects during 2008-2009 are outlined below in Section 10.3.2.

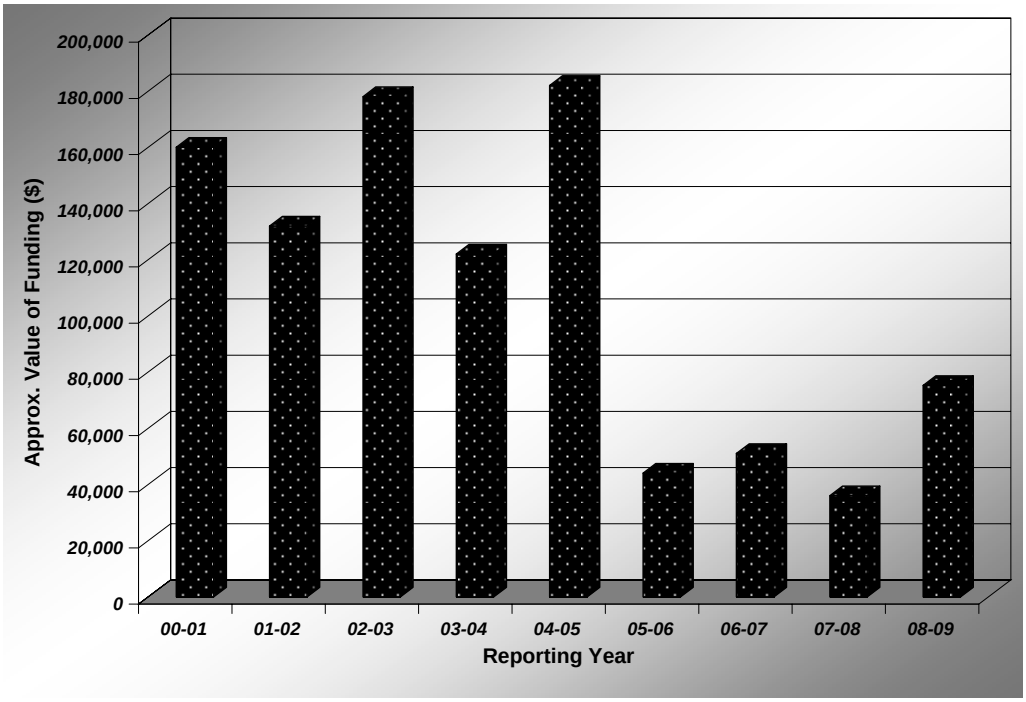
In April 2009, the NSW Planning Minister announced grants totalling $3.4 million for successful projects under the $5.3 million 2009-2011 NSW Heritage Grants program (www.heritage.nsw.gov.au). Projects within the Southern New England Region for which funding was announced include:

Table 22: **Funding under NSW Heritage Grants Works Program 2009-2011**

NSW Heritage Grants Works Program 2009-2011				
Community managed building works projects				
Project Name	**Applicant**	**Purpose**	**LGA**	**Approved Funding**
Newling Building (1928), Armidale, Year 5, Gymnasium Floor Replacement	Old Teachers College Armidale Inc	Replace the original flooring of the gymnasium of the 1928 former Teachers College at Armidale, now known as the Newling Building.	ADC	**$45,225**
Privately-owned building works projects (commercial and residential)				
Project Name	**Applicant**	**Purpose**	**LGA**	**Approved Funding**
Former Stationmaster's Residence (c1880s), Armidale Conservation and Painting	Karin von Strokirch and Michael Smart	Undertake conservation works to the c.1880s former stationmaster's residence at Armidale, including exterior painting and the verandah.	ADC	**$30,000**

Figure 34 shows the comparative value of known funding received for non-aboriginal heritage projects over the period from 2000-2001 to 2009-2010.

Figure 34: **Monetary value of known grants received for non-Aboriginal heritage projects in the Southern New England Region**



10.2.4 Interim Heritage Orders

No Interim Heritage Orders were issued across the Southern New England Region during 2008-2009. The issuing of Interim Heritage Orders is uncommon in the Region as no Orders have been made under s.25 of the *Heritage Act 1977* since August 2001 when delegation was granted to Councils by the then Minister for Urban Affairs and Planning.

10.2.5 Council Heritage Advisors

Table 22 provides an overview of activities undertaken by Heritage Advisors across the region during 2008-2009.

Table 23: 2008-2009 Council Heritage Advisor Activities

LGA	Site Visits	Heritage / Urban Design Advice	Pre-DA Advice	Advice to Council
ADC	25	35	5	35
GSC	4	0	0	2
USC	12	7	6	6
WC	0	0	0	0

10.2.6 Museum Visitation

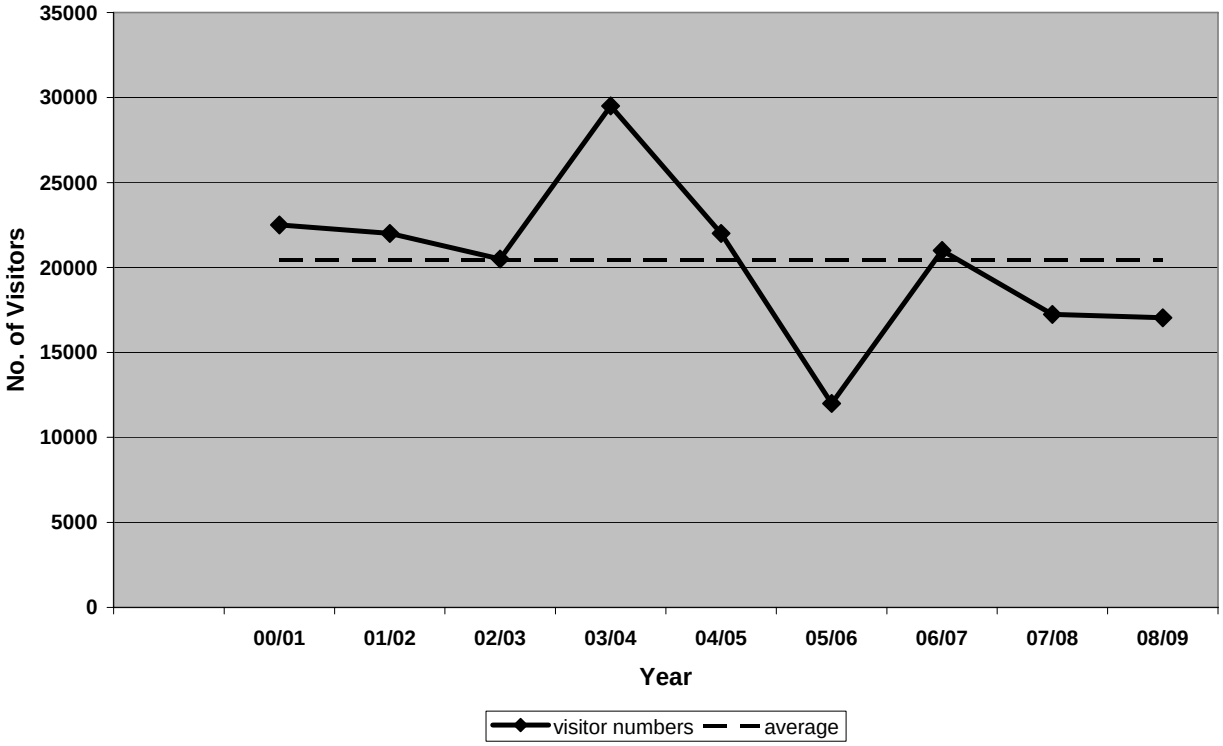
Visitor numbers to museums provide an indication of community interest in local history. Table 23 below shows a comparison of the reported number of annual visitors to various museums located in the Southern New England Region between 2003-2004 and 2008-2009. A similar trend of declining visitor numbers across all museums is evident over this period.

Table 24: Visitor Numbers to Museums in Southern New England Region

Museum	No. of visitors	
	2003-2004	2008-2009
ADC		
Armidale Folk Museum	9980	7858
Hillgrove Museum		1352
Armidale Bicentennial Railway Museum	~3500	1993
GSC		
Guyra Historical Museum	n/a	206
Wing Hing Long Emporium (Tingha)	2050	1670
USC		
McCrossin's Mill	5655	3985

Figure 35 shows that the annual total number of visitors to all museums (above) in the Region has also consistently declined since 2000-2001 despite a spike in visitors during 2003-2004. The total number of visitors to museums during 2008-2009 is also below the general average number of annual visitors recorded since 2000-2001 (approx. 20,800).

Figure 35: **Total Number of Visitors to Museums in Southern New England Region**



10.3 NON-ABORIGINAL HERITAGE ISSUES AND ACTIONS

10.3.1 Pressures Affecting Non-Aboriginal Heritage

The issues and activities that broadly create pressure on non-aboriginal heritage items within the region are identified as:

- development (new development, urban consolidation, inappropriate redevelopment / restoration, impacts on streetscape)
- deterioration and damage
- community values and perception of heritage significance
- information management and loss of historical knowledge
- insufficient funding and difficulty in obtaining funding for heritage work

10.3.2 Council Actions

The following section details the actions being undertaken by the respective Councils in relation to non-Aboriginal heritage within their local government area during 2008-2009.

Armidale Dumaresq Council

Armidale Dumaresq Council's overarching response to heritage matters has been the adoption in April 2008 of its Heritage Strategy 2008-2011. The Strategy, which is currently being implemented by Council, includes broad recommendations and a number of proposed actions to achieve these recommendations. Specific actions undertaken in response to the Strategy during 2008-2009 are included in the Table below.

NON-ABORIGINAL HERITAGE ACTIONS 2008-2009	
Development	**All Councils** Preparation of the New England Development Strategy and draft regional local environmental plan has continued during 2008-2009 (see Section 3). Councils require conservation management plans to accompany development applications, where appropriate. Continue heritage advisory service via Council's respective Heritage Advisor, including advice to staff, pre-DA and general heritage advice to owners / intending applicants and comments on DAs affecting places of heritage significance. **Armidale Dumaresq Council** Preparation of a draft up-dated heritage management development control plan. DA fees and charges waived where DAs for places of heritage significance would otherwise be exempt from the need for consent Council prepared a guideline for the installation of solar hot water systems on Heritage items and contributory buildings within the Heritage Conservation Areas in response to an increased number of public enquiries relating to Government rebates for installation of photovoltaic panels and solar hot water systems. As required, and in consultation with Heritage Branch Fire and Services / Access Advisory Panel, consider flexible approaches to building laws (where necessary) to ensure appropriate heritage conservation outcomes **Uralla Shire Council** A project for Council's Heritage Advisor to review classification of the Main Street precinct (Park St to King St) as a heritage conservation area for incorporation into a Regional LEP will be ongoing in 2009-2010.
Deterioration and Damage	**All Councils** Facilitate appropriate conservation outcomes via Heritage Advisory service **Armidale Dumaresq Council** As required, promote and adhere to conservation management plans for major public buildings, especially those facing redevelopment Facilitate adaptive re-use of places of heritage significance, including use of conservation incentives clause in LEP, as required. Council proposes to prepare a brief Conservation Management Strategy for the Armidale Town Hall and the Armidale Folk Museum during 2009-2010. **Uralla Shire Council** The McCrossins Mill kitchen has been refurbished to allow for ongoing fundraising to develop further restoration / conservation works.

Community Values and Perception of Heritage Significance	**Armidale Dumaresq Council** Continue Council presence on local National Trust Committee (Saumarez) Provide opportunities for public access to local educational initiatives (e.g. McLeans Corner) Publicise and promote new listings and approved conservation management plans, as required. Review of Armidale Heritage Walk signage undertaken. New waypoint indicators to be funded in 2009-2010. Include media release regarding Local Heritage Fund in Mayoral column of Express newspaper Continue heritage promotion via free daily bus tour, self drive heritage trail and self guided walking tour Continue operation of Armidale Folk, Hillgrove and Bicentennial Railway Museums **Guyra Shire Council** Continue operation of Guyra Historical Museum and Wing Hing Long Store at Tingha **Uralla Shire Council** Continued local heritage promotion through Tourism Officer at Visitor Information Centre A heritage walk and drive booklet was prepared and distributed Council is currently preparing a Conservation Management Plan to allow for conservation of the Pioneer Cemetery in Uralla. Also preparing a history of cemetery to add to cultural tourism. Council's Heritage Advisor has organised and promoted an excursion to the Kentucky Soldier Settlement community to view their world War II memorial plaques and historical display at the Memorial Hall – Kentucky South Village area, Wollun and the World War II Memorial Hall at Woolbrook. Council's Heritage Advisor is also involved in a program to identify the non-Anglo Saxon Celtic heritage throughout the Shire. In the Uralla Shire, a group called "Friends of the Phoenix Foundry" has formed to help protect, conserve and promote the site (State Heritage Item). **Walcha Council** Continue promotion of local heritage through Tourist Information Centre and Local History Centre.

Information Management and Loss of Historical Knowledge	**Armidale Dumaresq Council** All built heritage items in Armidale have been photographed and added to the Heritage Office web page. Expression of interest called from local tradespeople, suppliers and heritage consultants to be included in a local directory and draft directory compiled. Completed inspection and review of potential heritage items from former Dumaresq Shire Heritage Study. 15 additional items have been recommended for inclusion as Heritage Items in the Armidale Dumaresq Local Environmental Plan 2008 – Schedule 2. Continue to up-load ADC heritage inventory data onto the Heritage Branch web site and link via Council's web site
Funding	**All Councils** Continue to fund and support part-time Heritage Advisor position. **Armidale Dumaresq Council** Commenced a small project grants fund – Local Heritage Fund. Three (3) projects were funded in 2008-2009, which was relatively disappointing. The Local Heritage Fund contributed $2525 to these projects which had a combined value of $12,641. Next year Council will try to target market the program to encourage more applications for funding. Capital funding of $7,500 was secured for replacement of way markers, Urban Heritage Walk, Armidale, to be installed in 2009-2010. **Uralla Shire Council** Council has received funding of $12,300 (1:1 funding basis) for its Heritage Advisory Service and Community based study

SECTION 11 – COUNCIL MANAGEMENT PLANS

11.1 ARMIDALE DUMARESQ COUNCIL MANAGEMENT PLAN

Armidale Dumaresq Council's Management Plan for 2009-2012 was formally adopted at an Extraordinary Council meeting on the 16th June, 2009. The Management Plan provides details of the wide range of services to be delivered by Council and an indication of how these services will be provided to the community.

Strategic tasks and major operational tasks identified in the Management Plan that correspond to environmental sectors in this State of the Environment Report are summarised below:

Land Use and Management

- prepare Environmental Protection Plan for underground petroleum storage systems in accordance with regulations.
- prepare and submit a regionally based comprehensive State of the Environment Report 2008-2009 for Armidale Dumaresq, Guyra Shire, Uralla Shire and Walcha local government areas with the Department of Local Government by 30 November 2009.
- prepare draft Development Control Plans to support and in time to exhibit concurrently with the proposed Draft Regional LEP.

Air and Climate Change

- prepare a Climate Change Action Plan based on the outcomes of the Commonwealth funded Local Adaptation Pathways Program (LAPP) and NSW Nature Conservation Council Climate Consensus projects undertaken in 2008-2009
- investigate the feasibility of installing Grid connected Solar Panels at Puddledock, Dangarsleigh and Hillgrove Halls.
- continue to promote wood smoke reduction programs using allocated funding for rebates, program expenses and related administration.
- continue to sample local air quality and publish results in local print media and web site, in comparison with national air quality standards for fine particle emissions.
- continue developing the Sustainable Living Expo (SLEX) Live-Garden-Farm as an annual flagship event for Armidale.

Water

- preparation of a Stormwater Drainage Strategic Business Plan
- continue with the development of a program of Stormwater Quality Improvement Devices by installing two urban stormwater drainage systems to address the degradation of water quality in natural watercourses.
- prepare local guidelines for integrated water cycle management as this applies to development proposals
- review and update Council's On-Site Waste Water Policy to meet modern standards and most effectively meet the needs of plumbers and landholders

Biodiversity

- continue Schools' "Safe Pets Out There" (SPOT) program.

Waste

- complete an updated Solid Waste Strategic Business Plan.
- continue with the process to establish a new Regional Landfill by early 2011.
- in conjunction with the new landfill project, continue with the process to establish an alternative waste treatment facility for the stabilisation of mixed unsorted waste materials prior to landfilling and the composting of organic waste (garden waste and foodwaste).

Aboriginal Heritage

- coordinate the Gayinyaga Aboriginal Advisory Committee to ensure Council maintains a direct link with the local Aboriginal community and receives information regarding concerns raised and experienced by the local Aboriginal Community.
- work in partnership with Gayinyaga to coordinate community events to celebration NAIDOC Week, Reconciliation Week and Sorry Day.
- implement the recommendations outlined in Council's 2009 Social and Community Plan – Aboriginal Chapter.

Non-Aboriginal Heritage

- review compliance with Council's adopted Heritage Strategy with Heritage Advisor at end of each quarter.

11.2 GUYRA SHIRE COUNCIL MANAGEMENT PLAN

The Guyra Shire Management Plan 2009-2010 describes the strategic direction for Council and sets out Council's goals and objectives in each area of operation. Following are a number of major operational tasks identified in the Management Plan that correspond broadly to the environmental sectors discussed in this State of the Environment Report.

Land Use and Management

- to facilitate the necessary input of the New England Economic Development Committee and relevant stakeholders in to the development of the Regional Local Environmental Plan
- regularly review and update policies and development control plans
- prepare a development control plan for residential development
- annual audit of all extractive industries
- prepare management plans for Councils registered gravel pits to comply with Department of Primary Industry requirements

Air and Climate Change

- address the recommendations espoused in the 2007-2008 State of the Environment Report and as far as economically feasible develop projects to address these recommendations

Water

- develop a database for the recording of water samples
- active participation and value adding to the Malpas Catchment Committee to improve long term water quality flowing into the storage dams
- storm water drainage – identify key pollutants and likely sources
- identify key locations where effective storm water management processes can be implemented

Biodiversity

- develop a priority list for environmental works to take advantage of opportunistic grant opportunities
- develop an environmental education program in conjunction with CMAs

Waste

- continue to investigate the expansion of existing levels of recycling to address the increasing amount of packaging being used
- continue to investigate options for the disposal of waste in Tingha, Ben Lomond and Ebor villages
- continue to monitor illegal dumping and where the perpetrators can be identified, take appropriate legal action against them
- investigate the viability of providing a green waste pick up service
- undertake discussions with Armidale Dumaresq, Glen Innes and Inverell regarding the future of waste in the shire and region
- sewerage services – maintain compliance with license requirements from the Department of Environment and Climate Change
- continue program to reduce storm water infiltration into sewerage reticulation system
- continued reduction in wet weather flows through system monitoring, illegal connection identification and manhole and main sealing program

11.3 URALLA SHIRE COUNCIL MANAGEMENT PLAN

Uralla Shire Council adopted the Management Plan for 2009 - 2010 at its Meeting held on 29 June 2009. The purpose of the Management Plan is to inform the community about planned goals and activities of Council for the next financial year and future years.

At its Meeting in December 2008, Council also resolved to integrate local recommendations from the Climate Consensus Project, which was conducted by the Nature Conservation Council of NSW in conjunction with Uralla Shire Council, into the strategic planning process via the Management Plan including the State of the Environment Report and Social Plan. A copy of the Uralla local recommendations is included in Appendix M. Council's Environmental Committee will utilise its member's expertise and community liaison skills to works with the recommendations and monitor the progression of these outcomes.

Strategic objectives identified in the Management Plan that correspond broadly to the environmental sectors of the State of the Environment Report are outlined below:

Land Use and Management

- to facilitate an effective bush fire protection through a mutually agreed Service Level Agreement with the Rural Fire Service
- to manage and control development and service provision within the Shire to ensure that it is balanced and environmentally sensitive, that the overall aesthetic value of the Shire is maintained and that services are provided to match the needs of the Shire residents
- to ensure that Council consciously adopts a fully ecologically sustainable development focus
- to manage, operate and control gravel pits and quarries in the Shire in an economical and environmentally appropriate manner

Air and Climate Change

- to manage, maintain and develop the system of footpaths in the urban centres in the Shire efficiently and effectively.

Water

- to plan, design, construct and manage new and additional stormwater drainage systems and catchment areas, to collect, transport and discharge stormwater runoff effectively, efficiently and economically to reduce flooding, soil erosion, pollution and improve water quality
- to provide safe, cost effective and affordable water supply facilities complying with statutory requirements

Biodiversity

- to protect residents from animal nuisance and reduce the number of associated complaints
- to contribute to the overall control of noxious weeds in the Council area to protect the natural environment – support membership of the New England Tablelands (Noxious Weeds) County Council
- to implement programs aimed at protecting and enhancing the environment of the Shire to ensure health and well being of its residents

Waste

- to provide an efficient, cost effective and environmentally responsible waste collection, recycling and/or disposal service
- to provide safe, cost effective and affordable sewerage facilities complying with statutory requirements
- to ensure that the health of rural residents and the quality of groundwater and surface water is not threatened by wastewater disposal in areas where sewerage is not available.

Aboriginal Heritage

- to access appropriate heritage advice and guidance

Non-Aboriginal Heritage

- to access appropriate heritage advice and guidance
- to continue to develop cultural and heritage activities to the benefit of the Shire's residents

11.4 WALCHA COUNCIL MANAGEMENT PLAN

Walcha Council adopted its Management Plan 09/10-11/12 in June 2009 which outlines Council's proposed activities over the three (3) year period of the plan. Following is a summary of aims identified in the Management Plan and the means of achieving these aims that correspond to the environmental sectors outlined in this State of the Environment Report.

Land Use and Management

Fire Protection

- *(aim)* to develop an efficient and well equipped body of Bush Fire Brigades capable of adequately dealing with bush fire emergencies
- to be achieved by monitoring RFS service level agreement, undertaking adequate fuel management operations and developing a bush fire management plan.

Town Planning

- *(aim)* to promote and encourage the planned and orderly development of the Council area while protecting the environment for the overall well-being of the community
- to be achieved by:
    - preparing a Sub Regional Strategy (that will result in a draft LEP) in conjunction with the Strategic Alliance Councils and the Department of Planning.
    - establish development/building controls for development located in a flood plain area.
    - assisting, where possible, those landholders who have significant native tree cover on their properties, to manage this resource so that commercial harvesting will be permitted.
    - develop a Development Control Plan and register of sites to reduce the potential impact of contaminated land especially relating to changes in land use.

Natural Resources

- develop and maintain partnerships with Namoi, Northern Rivers and Hunter Catchment Management Authorities (CMA's)
- provide support to Landcare organisations seeking to improve Natural Resource Management.
- work with Namoi, Northern Rivers and Hunter CMA's, Landcare Groups and landowners to develop "on-ground" works that will assist management of our natural resources.
- continue to work with Namoi, Northern Rivers and Hunter CMA's in developing Catchment Action Plans. These plans are to developed taking into consideration routine farming practices of the area

Quarries and Gravel Pits

- operating quarries in accordance with ecological sustainable principles and DECC guidelines.
- incorporate weeds control into the management of all quarries to minimise the spread of weeds
- undertake annual audits of all operating quarries

Air and Climate Change

Natural Resources

- support the Government's rebate programme
- consider joining the Sustainable Choice Program developed by the LG&SA (June 2009)
- facilitate educational programs where possible that can be directed towards our schools that increase the awareness of the impact increasing greenhouse gas production will cause, and how, as individuals we can reduce the emissions of greenhouse gases.
- work with government instrumentalities in developing programs that will lead to a reduction in energy use for Council, business and the community

Parks, Gardens and Sporting Grounds
- to develop tourism walking trails to points of interest

Water
Natural Resources
- work in partnership with government instrumentalities to promote/educate the community on water issues including quality and usage

Water Supply
- developing an integrated water cycle management plan for Walcha
- developing a contribution plan for the provision of water services to new allotments
- carry out regular water sampling

Economic Activities – Commercial Activities
- investigate and pursue affordable options for effluent reuse and/or disposal

Biodiversity
Animal Control
- *(aim)* to develop and promote responsible ownership of domestic animals by providing an efficient service at a reasonable cost to the community
- to be achieved by:
  - promoting responsible pet ownership
  - reduction in number of complaints through education and surveillance
  - Council to maintain a record of all complaints lodged
  - continue to make available anti barking dog collars
  - continue a feral cat eradication program

Natural Resources
- work with Namoi, Northern Rivers and Hunter CMA's to identify Significant Roadside Vegetation within our local government area and identify grants that will assist with the management of these vegetation communities.
- continue to seek funding to undertake biodiversity studies (specifically in relation to the LEP)

Roads and Bridges
- carry out road works in accordance with ecologically sustainable principles
- maintain plant hygiene when operating/leaving a weed area
- plant operators able to identify various weeds

Waste
Waste Management and Recycling Services
- *(aim)* to provide an efficient waste management system and encourage the community to participate in maintaining a clean and hygienic environment.
- to be achieved by:

- providing a recycling collection services and “drop off” facility.
- completing an integrated business and management plan for waste disposal (June 2009)
- conducting a promotional campaign to increase the awareness and importance of recycling (June 2009)
- selling all recyclable material.
- continuing Council’s membership and active involvement of the Northern Inland Regional Waste Group
- introducing an equitable pricing structure for commercial recycling that reflects the actual cost of providing the service

Sewerage Scheme

- reviewing the business plan for the sewerage scheme
- preparing a detailed concept plan for the upgrading of the sewerage treatment plant including options for effluent reuse
- developing a contribution plan for the provision of sewerage services to new allotments
- carrying out monthly monitoring to ensure compliance with Department of Environment and Conservation licence conditions.

Aboriginal Heritage

- continuing to foster the relationship that exists between Council and the Aboriginal community.

Non-Aboriginal Heritage

- undertake a Cultural Heritage Study with the assistance of the NSW Heritage Office.

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