



Comprehensive State of Environment Report 2009



Gloucester Shire Council



Prepared by
Gloucester Shire Council
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Acknowledgement:

Material used in the preparation of this document is acknowledged within the relevant sections of the report.



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MAYORS MESSAGE

Welcome to the 2009 Comprehensive State of Environment Report. This report provides information on the changes and progress trends that affect the state of the environment for the Gloucester Shire area.

We continue to move forward and progress within the region whilst working to make better decisions to protect our environmental and social assets of the community. The report identifies new innovations that are being adopted and developed to ensure that the concept of Ecological Sustainable Development is implemented throughout council, business and community activities.

I therefore submit the 2009 Annual State of Environment Report to the community of the Gloucester Shire for your consideration

Geoff Slack
Mayor of Gloucester Shire



State of the Environment Reporting (SoE)

Preparation of the State of Environment Report is a legislative requirement of the Local Government Act 1993. Council's must submit an annual report to the Minister of Local Government. The first report following a Council election must be a comprehensive report and other years are a supplementary report. The supplementary report provides an update of changes that have occurred in the local government area each 12 months.

The primary aim of the SoE Report is to provide a set of baseline data on the environmental characteristics and the impact of activities in each Local Government Area from which changes and trends can be established. The SoE is Council's and the community's annual environmental 'report card' and, as such, provides relevant information for Council policies and programs.

The reporting is required against 8 main sectors – **Land, Air, Water, Biodiversity, Waste, Noise, Aboriginal Heritage and Non-Aboriginal heritage**. A separate section has been developed to address Ecological Sustainability Development and Climate Change.

Each sector must be assessed using the PSR Model. This identifies Pressure, State and Response for each sector. Pressure is the **pressure** that human activities put on their immediate environment and their natural surroundings. State is both the current and projected **state** of the environment, and response is the **response** of councils, government agencies, industries and communities to the pressures on, and state of, the environment.

Pressure indicators – Low – no threat and low likelihood of change
Moderate – potential for change
High - significant threat or high likelihood of change

State indicators (Condition) Poor
 Fair
 Good

Response Indicators – Poor
 Fair
 Good

The 2006/07 Department of Environment and Climate Change "Who Care about the Environment?" Survey identified that the environment still remains the 3rd highest priority behind Family and Friends. 93% of respondents rated the environment as either very or rather important. It is therefore important to recognise the quality of our environment and monitor the impacts and changes that may lead to its degradation.

Table 1 identifies the most important environmental issues for NSW residents in 2007.



Most important environmental Issues 2007	%
Water Conservation and management/drought	67
Climate Change	26
Air pollution/air quality	20
Forest/bushland/biodiversity issues	16
Energy	16
Water Pollution/water quality	10
Waste	8
Development and Planning	4
Land degradation/soil/erosion/salinity etc	3
Mining	3

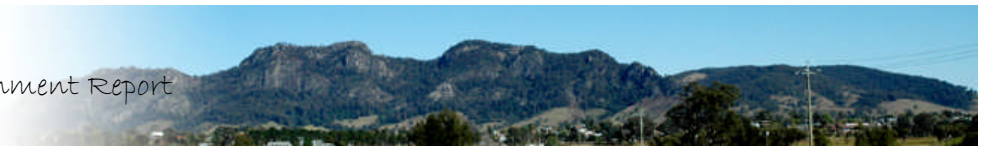
Table 1 – Environmental Issues identified by NSW survey participants “Who Cares about the Environment?”

Where each of these issues sit in order of priority has changed over the last 10 years with climate change increasing from 3% to 26%, with most of that change occurring between 06/07, Energy increasing from 1% to 16%, and others like waste decreasing from 17% to 8%.

These changes reflect the shift in community interest and reporting/media on issues like climate change and drought and the links between the issues.

One of the purposes of preparing the SoE report is to monitor environmental performance so that measures can be identified to improve the quality of our environment and track the changes that occur from management decisions. Therefore the SoE is expected to reflect changes in community interest as shown through the “Who Cares about the Environment?” surveys conducted by the Department of Environment and Climate Change.

The SoE is a way of better informing the whole community about our impact on the environment, the more we are able to understand and change what we do to ensure a quality lifestyle and environment, both now and in the future.



1. Introduction

The Gloucester Local Government Area is located in the north-eastern corner of the Hunter region, approximately 120 kilometres north of Newcastle. The shire encompasses an area of approximately 2,952 km².

Gloucester Shire forms a significant catchment for the Manning River, with four main river systems, these being the Gloucester, Barrington, Barnard and Avon Rivers. The Barrington Tops National Park and large areas of State Forest encompass areas of steep topography. These areas are relatively pristine with a high conservation value, representing a significant ecotourism resource for the area.

Gloucester Shire Council has a commitment to the community through its Corporate Objectives to "To enhance the quality of life in the Gloucester Shire through the provision of services based on sound economic, social and environmental planning."

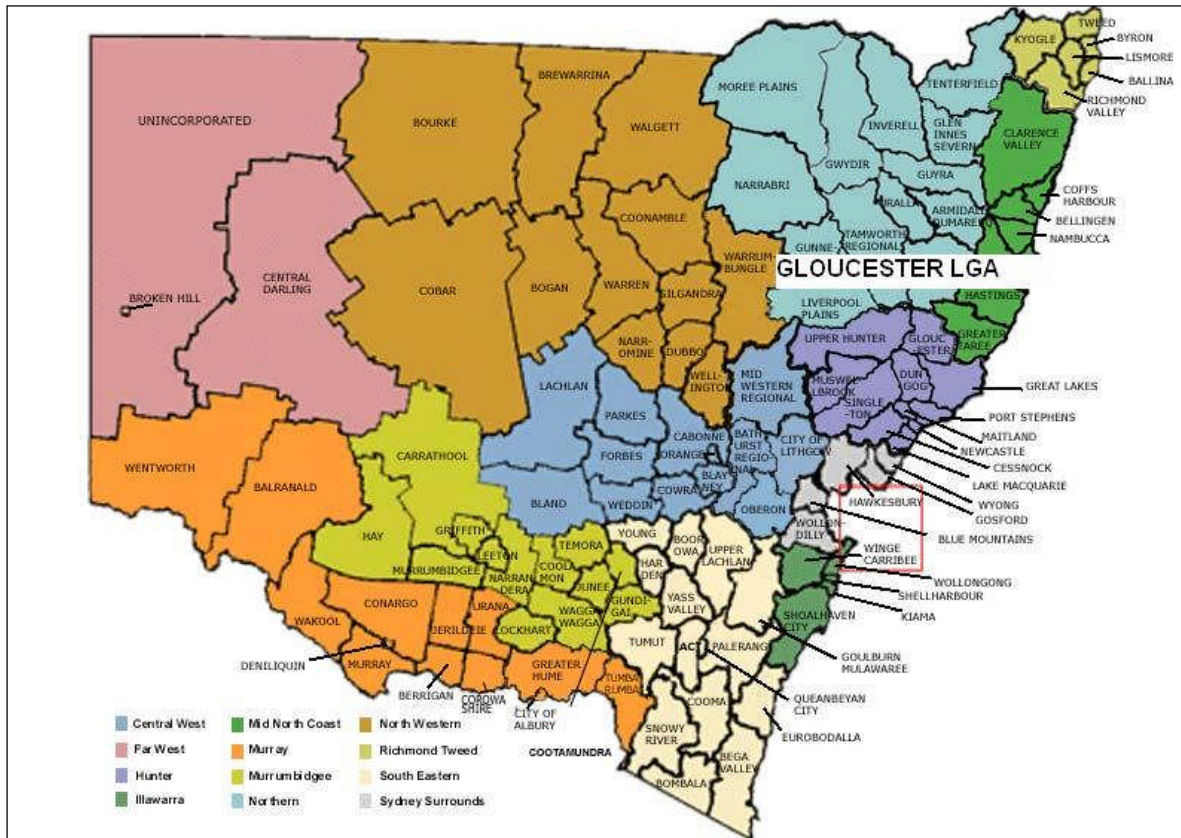


Figure 1 Locality of Gloucester Shire

Prior to European settlement, the area was inhabited by the Worimi and Biripi indigenous groups. The first European known to have passed through the area was the explorer Henry Dangar in 1826. He was followed by Robert Dawson, the first manager of the Australian Agricultural Company (AAC) that had been formed in England in 1824 with the object of raising fine wool and agricultural products for the English market. The AAC had been granted one million acres on the northern side of



Port Stephens and, impressed by the 'romantic scenery' of the river valley; Dawson established an outstation that he named 'Gloucester' after the English town. The Gloucester and Avon valleys were soon full of AAC sheep and a dairy was established on the estate in about 1831 for the supply of AAC employees.

In 1851 churchman John Dunmore Lang observed that 'Gloucester is one of the best sites for an inland town I have ever seen in the colony. A range of picturesque mountains called by the aborigines, the Buccans, of about 1200 feet in height, bounds the horizon to the westward. Along the base of these mountains, the River Gloucester wends its way northward, leaving a large extent of alluvial land on its right bank, which the Company has cleared and brought into cultivation; the site of the buildings that form the station, including a house of accommodation for travellers, being on a rising ground to the eastward of the alluvial flats. It is altogether a beautiful spot in the wilderness.'

Drought killed off many sheep in the early 1840s. The end of transportation in the 1840s and the gold rushes of the 1850s caused labour shortages for the company which imported Chinese labour. In addition, the sheep flocks suffered as Dawson had chosen inappropriate terrain, attempts to grow grain proved disappointing, the paddock fences were in a parlous state and half the cattle and horses had strayed, were lost or stolen. By the 1870s Gloucester estate was overrun with brumbies and 1500 were shot.

In the late 1850s the AAC sold or removed all the sheep and reduced its landholding in the area. Attention turned primarily to cattle with the Gloucester estate proving home to a large and excellent herd. Coal, iron ore and limestone deposits were discovered by the AAC but plans for their exploitation never came to fruition.

In 1856 Arthur Hodgson, the general superintendent of the AAC observed that 'the town of Gloucester is laid out with great judgment. The road from New England passes through part of it. There is a house of accommodation about one mile from the township.' Although Gloucester was the head station, the term 'town' is probably misleading as there were few buildings. In 1861 the only structures were a slab-and-bark hut occupied by the resident constable, a wooden hotel with a shingle roof, an Anglican church (built in 1860 at AAC expense) and a blacksmith's shed. Elsewhere on the estate there were cattle yards that held up to 4000 head, an overseer's house, and a brick residence for the use of the general manager who moved to Gloucester from Stroud in 1860. A store and two houses were added to Gloucester in the 1860s with another two residences, a post office, a hotel and a police station being added in the 1870s.

Notorious bushranger, 'Captain Thunderbolt' (Fred Ward) hid out at Gloucester Tops in the mid-1860s. When the police discovered his hideout in 1866 he escaped though his wife, two children and another woman were taken to Gloucester and on to Maitland where the women were released. The two children were sent to a government institution.

Alluvial gold was discovered to the west of Gloucester, at present-day Copeland, in 1872, but it was kept secret until 1876 when a rush started. Subterranean mining commenced in 1877 and at the height of the rush (1877-80), there were some 3000 people in the area working 51 reefs that yielded 566 kg of gold. Half of that amount was uncovered in 1879 alone.



Figure 2 Gloucester Main Street in the late 1970's

In 1903 the AAC sold its property to the Gloucester Estate Syndicate which cleared the land, drew up the town subdivision and sold allotments. In 1905 two hotels were built, a school of arts was completed, the 'Gloucester Advocate' went into print and construction began of other businesses and residences. At the time cattle and timber were the focus of local industry although dairying was on the rise. In 1906 the Barrington Butter Factory opened and the Gloucester Shire Council held its first meeting. A Presbyterian Church was built in 1907 and the courthouse was erected in 1908. A cordial factory operated from 1910 to 1918 and the railway arrived in 1913 enhancing the town's role as a service centre to the surrounding area and precipitating a period of development (ref – about.nsw.gov.au -).

Recent changes especially since 2003 have seen dramatic increases in subdivision and development within the Shire. The residential and rural land releases would indicate that over time a population recovery due to migration from more populated areas may increase the Shire population from between 1.5 to 2 times the current level over the next 6 years.



2. Towards Sustainability

State: Fair
Pressure: High
Response: Fair

Towards Sustainability addresses Council's response to ESD and its implementation.

Ecological Sustainable Development (ESD) is an approach to using, conserving and enhancing the community's resources so that the ecological processes, on which life depends, are maintained, and the total quality of life, now and in the future, can be increased (Department of Local Government 2002). The three main principles to understanding sustainable development are intergenerational equity, the precautionary principle and biodiversity conservation. Together these principles aim to prevent and reverse adverse impacts of economic and social activities on the ecosystem while continuing to allow the sustainable, equitable development of societies.

The important role of local government in the implementation of ESD principles has been formally recognised by incorporating the principles of Ecological Sustainable Development in the NSW Local Government Act and by requiring councils to manage their regulatory and service functions in an ecologically sustainable manner (Department of Local Government, 1998).

Gloucester is well positioned to adopt sustainable practices as a small rural based community. There are a wide range of activities that are being undertaken by the general community, community groups and business and industry in regard to more sustainable actions in response to becoming a more sustainable community. These projects and initiatives are described elsewhere throughout the report.

Recommendations:

Assist the community with information that promotes sustainability
Review Council Policies and Procedures to further incorporate sustainable concepts
Continue to participate in regional programs that address ESD



3. Human Settlement

Population

State: Good

Pressure: Moderate

Response: Fair

By comparing a range of social indicators we can determine the state of the community for any particular period. Indicators which are used include population structure, employment, family characteristics, and new dwelling approvals.

In recent years the Gloucester Shire has seen steady growth in its total population. However in the 2001 Census population, 108 fewer people (4682) were recorded as living in Gloucester (See Figure 2). This drop in population was primarily attributable to changes in the working environment of the timber and agricultural industries. The 2006 census data indicates a return to historical growth rates in population which is attributable to the area being an ideal place for business re-location, “tree changers” and retirees (Gloucester Shire Council 2009). The 2009 population estimation is 5039; the percentage of male, female and indigenous is shown in Table 2.

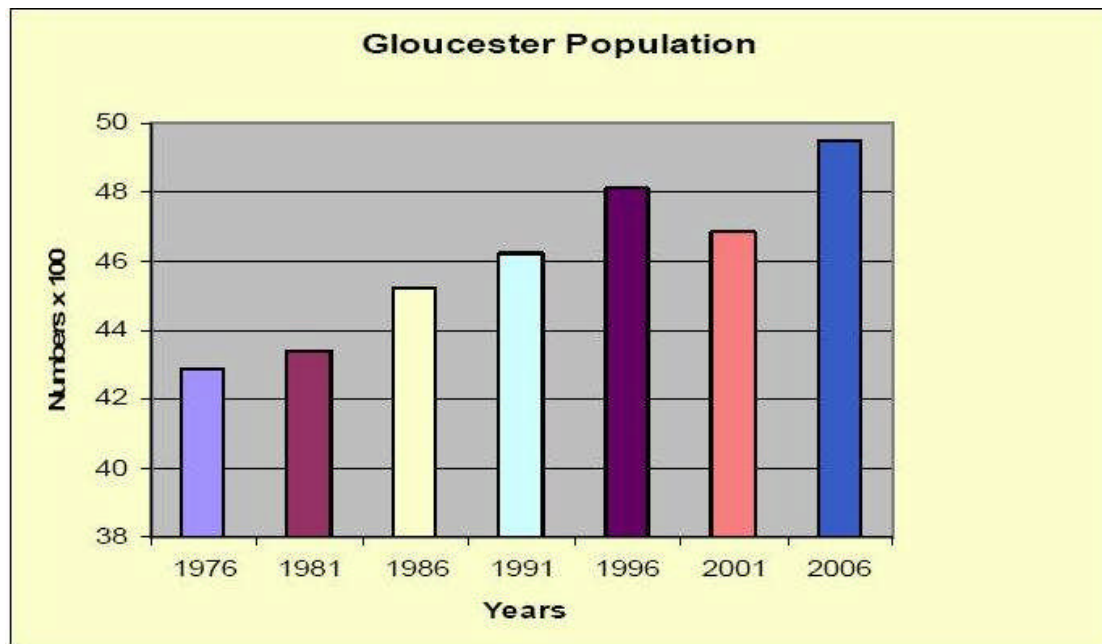


Figure 3 – Population Growth since 1976 for Gloucester Shire (Source: *Community Plan 2009-2014*)

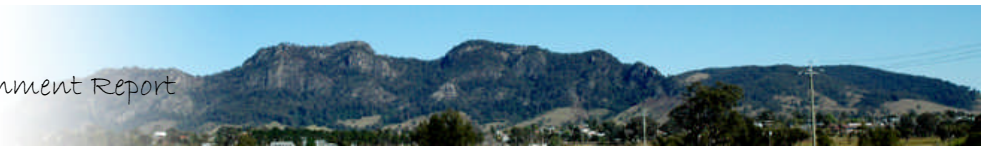


Table 2 Gloucester Population 2009

Person Characteristics	Number of Persons	% of Population
Total persons	5039	-
Males	2469	49
Females	2570	51
Indigenous persons	177	3.6

The age distribution of the Gloucester Population is very similar to most regional communities which generally are marked by increases in the aged population and reductions in populations in the younger age groups. The Australian Bureau of Statistics currently lists the national percentage of people over 65 years as 13.5%. The same figure for Gloucester is 22.2% and the projected figure 2020 is well over 25%.

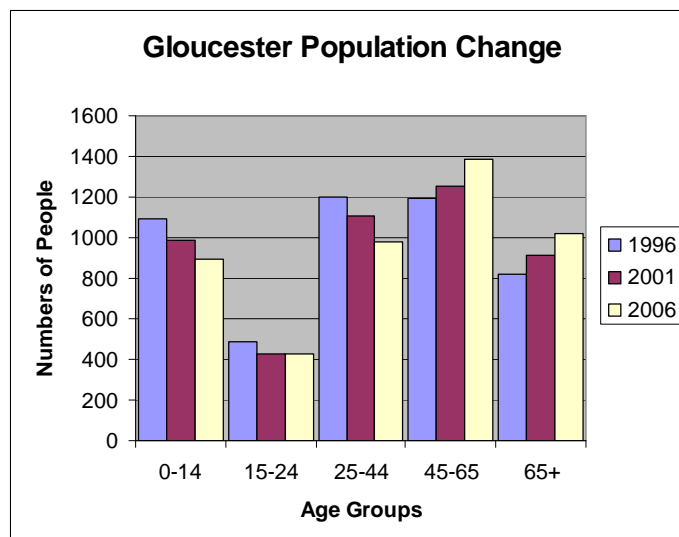


Figure 4 Change in population per age groups

2108 persons make up the labour force (includes employed and unemployed persons) for Gloucester in 2006. Of those 56.8% are employed full time, 31% are part time and 6% are unemployed. Employment is largely agriculturally based with 17.3% working in sheep, beef cattle, grain farming and dairy cattle, and making up Gloucester's largest employer area. This was followed by School Education (5.3%), Hospitals (5.2%), and Local Government (3.6%).

Table 3 Gloucester Income (15 years and over) 2006 Census

Income	Gloucester	Australia
Median Individual Income (\$/weekly)	343	466
Median Household Income (\$/weekly)	665	1027
Median Family Income (\$/weekly)	846	1171

In Gloucester the median weekly individual income for persons aged 15 years and over who were usual residents was \$343, compared with \$466 in Australia. The median weekly household income was \$665, compared with \$1,027 in Australia. The median weekly family income was \$846, compared with \$1,171 in Australia.



Table 4. Gloucester Family Characteristics 2006 Census.

Family Characteristics	Gloucester	% of Total Families
Total Families	1393	-
Couple families with children	496	35.6%
Couple families without children	725	52%
One parent families	157	11.3%
Other families	15	1.1%

In the 2006 Census, there were 1,393 families in Gloucester 35.6% were couple families with children, 52.0% were couple families without children, 11.3% were one parent families and 1.1% were other families.

Table 5. Gloucester Dwelling Characteristics 2006 Census.

Dwelling Characteristics	Gloucester	Australia
Median rent (\$/weekly)	125	190
Median housing loan repayment (\$/monthly)	1078	1300
Average household size	2.3	2.6
Average number of persons per bedroom	1.1	1.1

In Gloucester the median weekly rent was \$125, compared to \$190 in Australia. The median monthly housing loan repayment was \$1,078, compared to \$1,300 in Australia. The average household size was 2.3 and the average number of persons per bedroom was 1.1.

Development

State: Good
Pressure: Moderate
Response: Good

Development has remained relatively stable over the last 5 years with significant increase in dollar value for the 2006/2007 financial year. 2008/2009 is the first year that complying development certificates have been listed separately. Complying development certificates have become more prevalent in the past year after the State Government introduced the State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 in February.

The number of applications has reduced by approximately 13% over the 2007/08 year. This has in part been due to the global economic down turn and uncertainty created in residential commercial and industrial return (Figure 5).

The development value has reduced by approximately 9% over 2007/08 in line with the reduction in applications received. The generated value of development generally falls at a lower rate due to natural increases in cost or CPI increases (Figure 7)

The type of development approved during 2008-09 primarily consisted of new dwellings and alterations/additions. The development types remain strong with a



reduction in dwelling additions. New dwellings remain a strong development area during 2008/09.

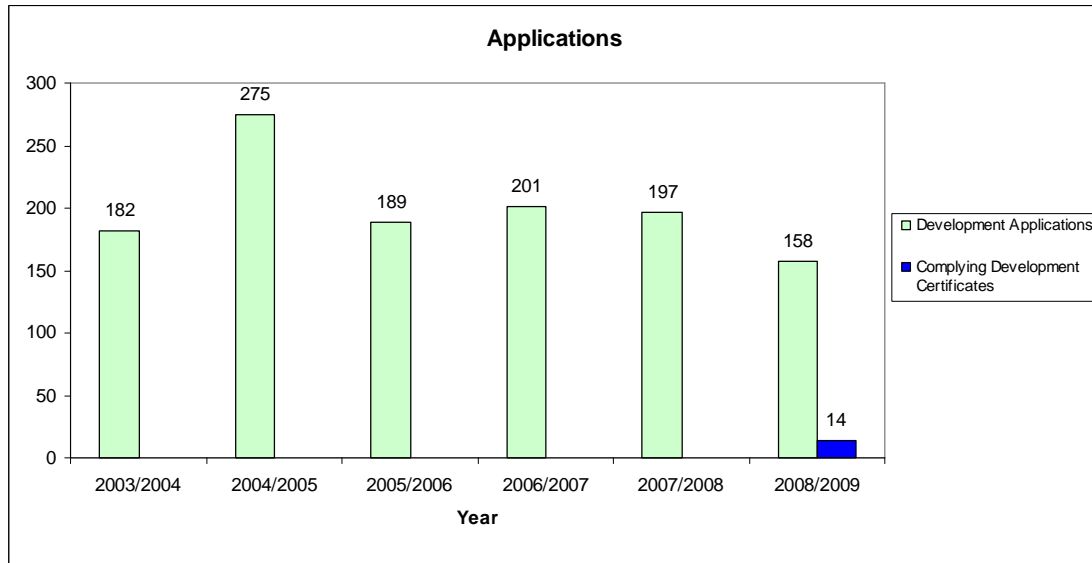


Figure 5 Number of Development Applications each year from 2003

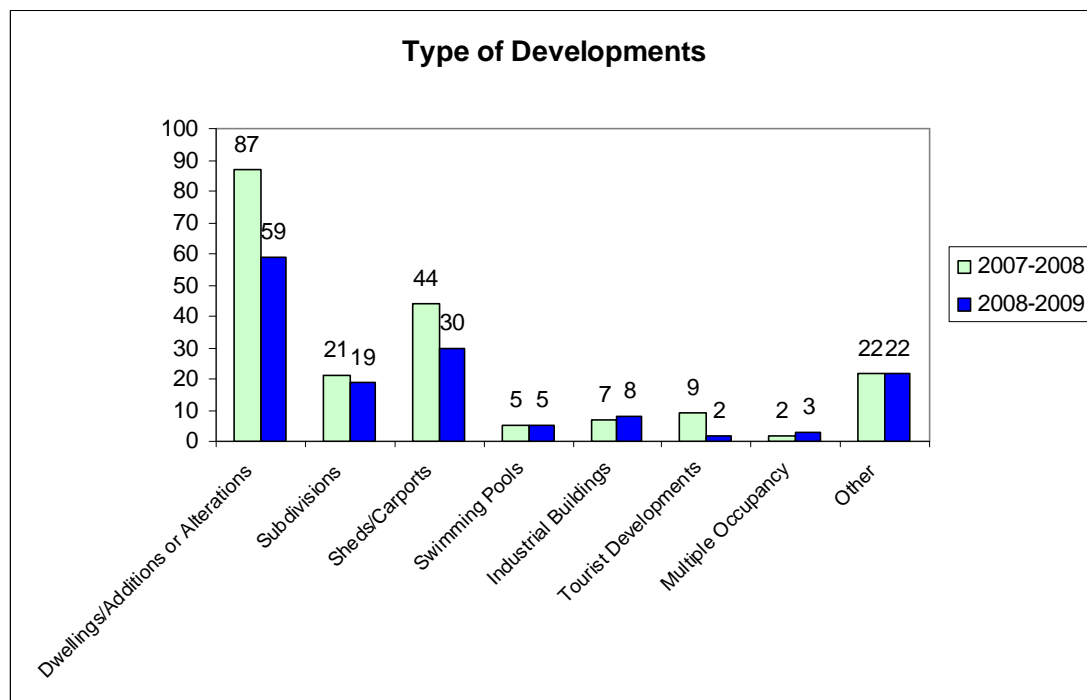


Figure 6 Development types since 2007

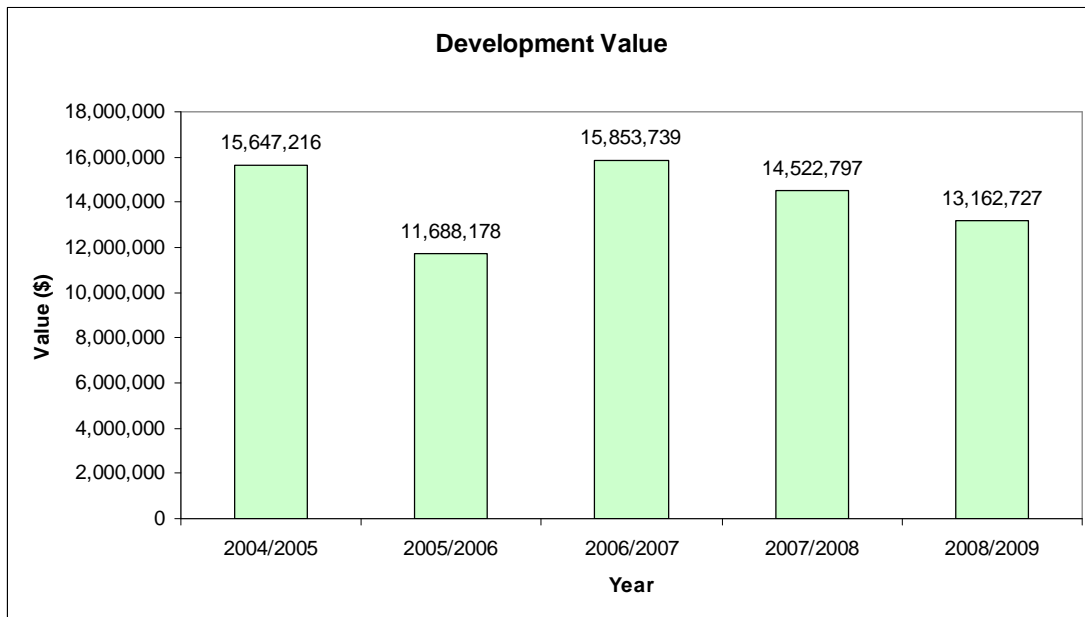


Figure 7 – Value of developments for the Gloucester Shire since 2004

Health

State: Good

Pressure: High

Response: Fair

Gloucester is a regional rural community and relatively well catered for in regard to Health Services. Currently in Gloucester there is:

- Gloucester District Hospital
- Gloucester Medical Centre
- Dentist
- Sharps collection bins located in several locations
- Pathologist Services
- Community Health
- HACC Services

The Gloucester Shire Community Plan identifies service issues and gaps that affect different age groups access to health and recommendations to address these.



Figure 8 Sharps collection bin

Issues that affect the health services include socio economically disadvantaged families (34% have a family income under \$649/wk – ABS 2006), cost of



services, transport and ability to travel outside the region for key surgery.

Areas that the community need to address include:

- Aged health Service provisions
- Aged Housing and Self Care
- Aged Care facilities and Dementure Services
- Community Support services in general

Infrastructure

State: Good

Pressure: Moderate

Response: Good

Gloucester is situated on Bucketts Way (Regional Road 90), which extends from the Pacific Highway north of Raymond Terrace, rejoining the highway south of Taree. Thunderbolts Way (Regional Road 7719) links Gloucester to the north, to Walcha and then onto western NSW.

Roads

Council maintains 469 kilometres of unsealed roads and 270 kilometres of sealed roads. This road system includes 236 bridges and causeways, of various type and structure. The road system is gradually up-graded and maintained to support current traffic movements.

Protect and Prolong the Life of our Roads

The Mid North Weight of Loads Group works in co-operation with the New South Wales Roads and Traffic Authority to protect and prolong the life of our roads by reducing the incidence of overloaded vehicles. Although the Group issues breaches for overloading, its major focus is on education which will assist truck operators in making sure their loads are legal and are not causing damage to roads. As part of the Group's education program, inspectors offer truck weighing on request and give advice on proper loading.

Rail and Bus Services

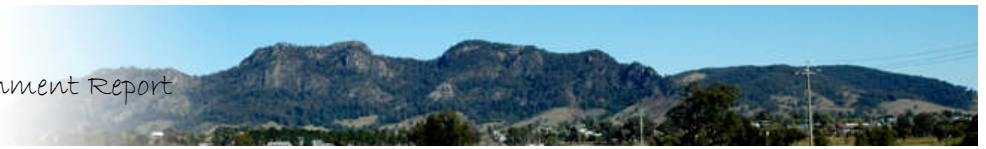
Although Gloucester's size and population preclude the provision of public transport in the township; there exist a number of transport options to meet the needs of the community including schools busses, Country Link bus and rail, taxi, hire cars, private carriers and community health and recreational transport providers.

Local Environment Plan 2000

The planning for Gloucester Shire Council commenced with a review of the existing LEP and supporting information. Gloucester at this time was experiencing a rapid change in development and the land that was zoned for a twenty year release period was taken up and approvals issued for its subdivision. Much of this land was subsequently developed and sold which provided an over supply of land for building.

The public was asked to participate in an LEP review process with Council to identify how they perceived the future of the shire and the following areas;

- Rural residential
- Urban residential
- Rural



- Social considerations
- Infrastructure and services

The considerations put forward from the community are included in the Housing Strategy 2006.

Gloucester Shire has been a relative stable local government area and relied on agriculture as its base industries. Changes in Government policy in previous years had a large effect on the local economy with the reduction in the timber and dairy industry hitting extremely hard across the Shire. The area became recognised as an area for mining development and a small coal mine at Stratford developed which assisted the community due to the decline in other traditional areas.

With the development boom of 2003/04 many new residents and non residential land owners discovered Gloucester Shire. This pushed the release of land and the gradual improvement in dwelling construction rates. The large amount of land available for development also caused the over supply of land for dwelling construction as identified in the Housing Strategy 2006.

At the same time as the development boom, Gloucester was identified by a number of mining and exploration companies as an area of high value for the production of Coal, Coal Gas Methane and precious metals and stones. Large areas of Gloucester Shire are now covered by Exploration leases and mining commenced for rubies and sapphires adjacent to the World Heritage Barrington Tops area on the Little Manning River and exploratory drilling has commenced for gas and coal in the Gloucester Basin area. Figure 1 high lights the extent of mining activity across the shire.

Housing development, tourism and environmental protection does not go well with mining exploration and development. This has caused a public backlash to these activities, as the Council and the community has made great attempts to protect the scenic and environmental qualities of this area.

The greatest growth locally has been in the area of aged persons, as Gloucester Shire is the sixth oldest community in New South Wales and is estimated to continue aging. The review of the LEP has identified that the future need for housing must allow for a range and progression of housing types and facilities. This need has identified that Council will need to support its community by planning for infrastructure and services for an aging community. Copies of strategies have been submitted to government agencies so they can plan for changes within this shire and acknowledge the need for future support services.

SUB-REGIONAL INFLUENCES

Gloucester Township is the centre of an active sub region that extends from Booral in the south to Nowendoc in the North from Krumbach in the east to Barrington Tops in the west.

This area has been identified in Councils strategies where residents travel to Gloucester to attend schools, play sport and other recreation, undertake commercial activities including sale of cattle, purchase of agriculture items and machinery repairs and to do their principle shopping.



Gloucester Shire does not cover the extent of the identified area (map attached), however due to the locality of small villages and the similarities in employment activity; generally being agriculture (cattle production); people are travelling to Gloucester Township for day to day services and essential needs.

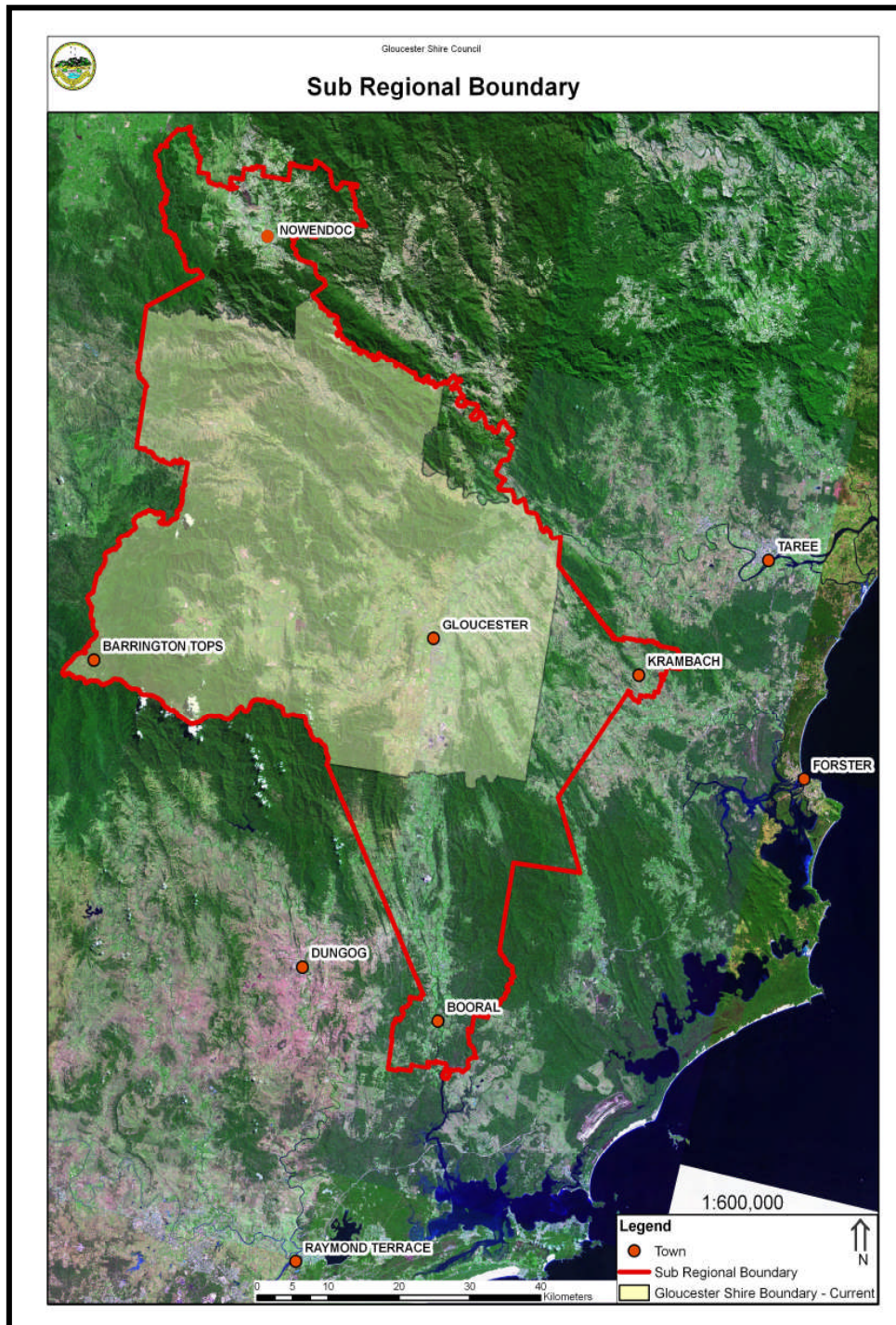


Figure 9 – Sub regional Boundary



Draft LEP 2009 advertised

Council advertised the draft LEP 2009 during 2009 and received a good response to the draft documents. Council and the department of planning has undertaken an assessment of the public comments, undertaken minor amendments to plans and the State LEP template as required to ensure the protection of the Shire.

It is anticipated that the new Gloucester LEP shall be gazetted in February or March 2010 in line with the State Government review process.

Educational Facilities

There are a number of primary schools located around the Gloucester LGA including two non urban primary schools and they offer a good range of scholastic, social and sporting opportunities. Gloucester also has one high school and one pre-school.

Student numbers have declined at the high school since 1996 which has an adverse effect on the numbers of courses available and choices of students as to their study options (Gloucester Shire Council 2009). On average Gloucester students are less likely than their state colleagues to complete year 12 at secondary school. Students are forced to travel out of the area to undertake further studies.

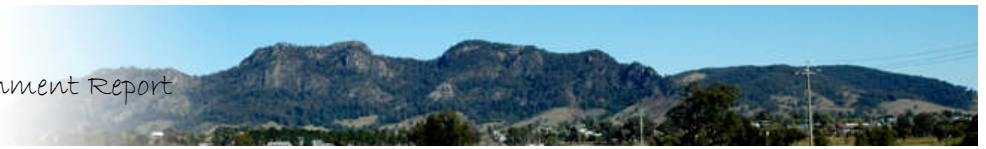
Sporting and Recreational Facilities

Gloucester offers a wide range of formal, informal and sporting parks and facilities. These include reserves, lookouts, Memorial Parks and recreational parks and facilities. A map of Parks and reserves in town is in Appendix 4.

Gloucester District Park is the main Park for Gloucester and is the result of sustained community and Council effort with funding provided by Council, State and Federal Government Departments. A significant proportion of the maintenance and upkeep of this park is provided on a voluntary basis.

The Park provides a substantial recreational resource for residents and visitors of Gloucester Shire. Contained within its boundaries are extensive sporting and passive recreational facilities, these include:

- 2 ovals used for multiple purposes including hockey, rugby union and touch football
- 2 turf and 3 synthetic cricket wickets
- 4 soccer fields
- 1 football field
- an athletics track including long and triple jump pits and a hammer throw facility
- 3 asphalt and 2 grass netball courts
- a croquet area
- picnic and BBQ facilities and
- a children's playground;



Also provided are sheltered seating; extensive passive recreation areas; formal gardens; parking areas and internal access ways; amenities blocks and a grandstand.

A number of sporting complexes and club rooms are also located within the Park:

- Indoor Recreation Centre – basketball, volleyball, indoor hockey, indoor soccer and badminton
- Gymnasium
- Tennis Club – 9 clay and 6 synthetic grass courts
- Croquet Club – 1 grass playing green
- Olympic Pool Complex – Olympic and Toddler Pool, Hydrotherapy Pool, Swimming Club and Learn to Swim classes
- Bowling Club – 2 playing greens
- Caravan Park – unpowered and powered sites, on-site cabins and bunkhouse

The Park is heavily utilised by the Gloucester community and those of other townships in the region. Due to the availability of facilities, there are often a number of activities occurring at any given time, particularly on weekends.

Due to the high standard of the facilities provided, the Park serves as a regional focus for sporting events. The location of a number of facilities in one area provides an opportunity for a number of events to occur at the one venue.

The Park also provides opportunities for passive recreation, in the form of picnic areas and open undeveloped spaces. These open spaces are utilised by residents as well as visitors travelling through or on short stays, reinforcing the regional status of the Park.



Figure 10 Memorial Garden in the Gloucester District Park and children's bike track at Billabong Park

Recommendations:

- Maintain facilities and infrastructure for community needs in a sustainable manner
- Promote events to the community to encourage social engagement
- Monitor the progress and type of development
- Progress selected recommendations from Gloucester Shire Community Plan



Waste

State: Good

Pressure: Moderate

Response: Good

Kerbside Service:

The Gloucester Township and surrounding villages (Barrington, Craven, and Stratford) have a kerbside service that collects general waste weekly and recyclables fortnightly. Both services are 240Lt Mobile Garbage Bins. This service is provided by Gloucester Shire's Contractor JR Richards and Sons.

Council has been working with the contractor to extend the kerbside service into some of the rural areas that will commence in July 2009. This extension has increased the kerbside service by 350 services.

Gloucester Shire Council has also entered a new Waste Management Contract scheduled to commence in November 2009, and is for a 10 year period. This contract is a regional contract and includes both Greater Taree and Great Lakes Councils. This waste contract will see town areas receive a green waste service for the first time. The aim of this is to reduce the amount of green waste going to landfill. The over all contract aims to steam-line waste management for the region; reduce overall costs to the community and the environment.



Figure 11 – Midcoast Waste and JR Richards & Sons Contract Signing Day



Landfill

Gloucester Landfill has been operating since 1963 and takes in about 5000 tonnes of waste each year. The land fill has operated as a non-licensed facility since opening. The facility provides the community a drop off point for general waste, scrap metal, batteries, greenwaste, DrumMuster facility, oil and household recyclables.

The landfill leachate ponds were upgraded this year to include two large evaporation ponds. The landfill run off is directed to the top dam (pictured here with reeds) and the dam overflow then flows into the top evaporation pond, then the lower evaporation pond, into the final dam and enters the creek during long periods of rain only. These extra works will ensure the water that left the site was of an acceptable level.



Figure 12 Leachate pond extension



Figure 13 Tip Face

Leachate testing is conducted bi-monthly. Water from the first collection dam is collected and tested for a range of parameters including pH, fluoride, sulphate, and ammonia. High levels of ammonia indicate that the leachate is escaping from the landfill. All of the results collected from the first dam are well below expected levels indicating that the leachate is well contained.

Legislation Changes

In the last 12 months there have been legislative changes implemented by the state government. These changes will now require the waste facility to become part of the Regional Regulated Area. This means that the facility will now require a licence to operate as of 1 July 2009, and pay the new waste levy that has been introduced at \$10/tonne on waste taken to the facility. This levy will increase by \$10 per year + CPI until the total of \$70/tonne is reached. The aim of the levy is to increase recycling efforts of the whole community, reusing existing resources, and increasing the life span of our landfills.

Recycling

Gloucester Shire Residents receive a fortnightly recycling kerbside service. This service takes a range of recyclables including:

- Steel and aluminium cans and empty aerosols
- Glass bottles and jars
- Rigid plastic containers from your kitchen, bathroom, and laundry
- Cardboard boxes, milk and juice cartons, newspaper, magazines, office paper and junk mail (MCW2009).





Recyclables collected from the kerbside during the last 12 months and has increased by 16 670kg from the previous year (JR Richards EPA reporting).

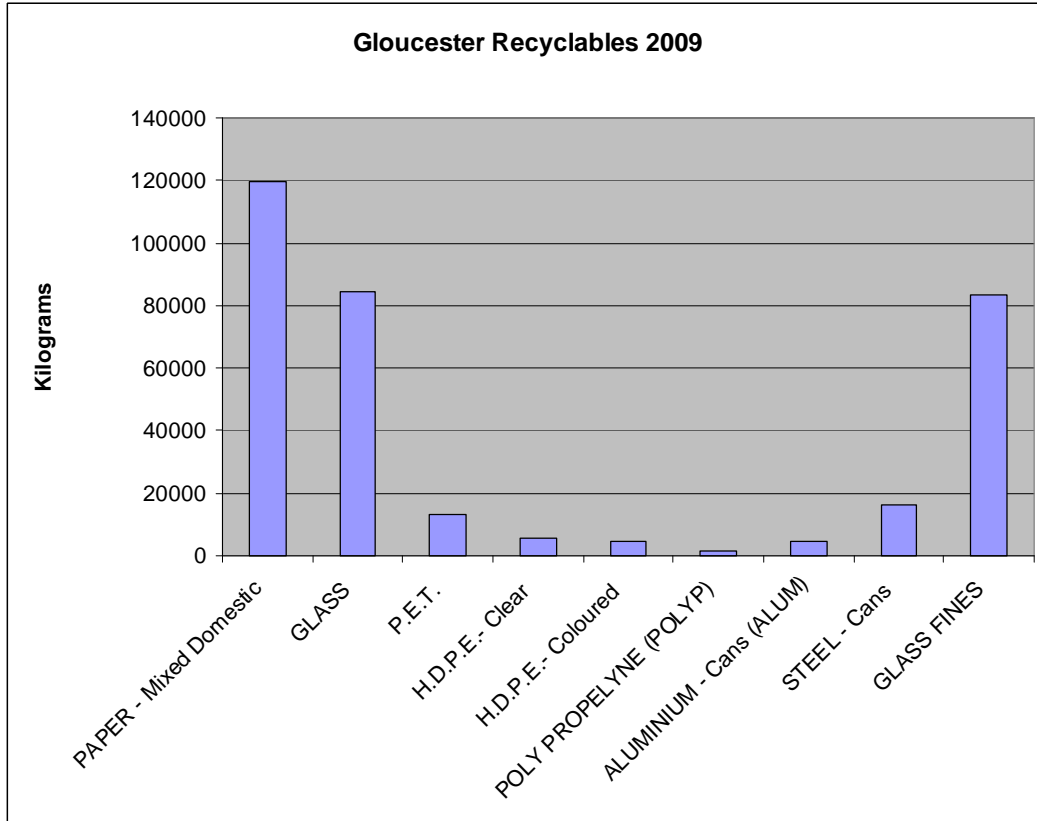


Figure 14 Kerbside Recycling Totals for 2009

Over the past 3 reporting years Gloucester's total recycling has increased, with all plastics, glass and steel increasing and paper dropping off slightly.

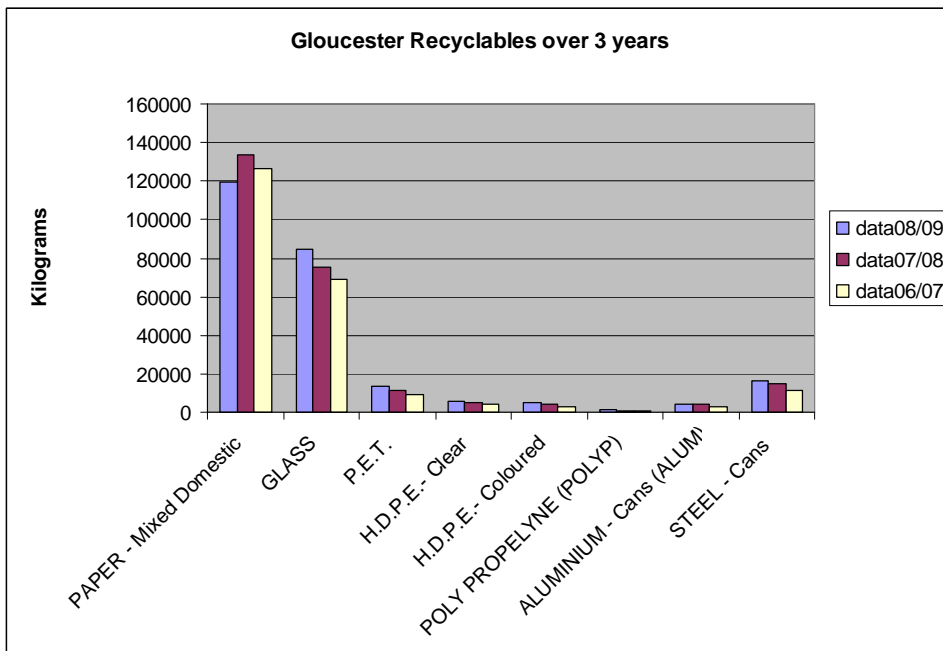


Figure 15 Kerbside Recycling Over a 3 year period



DrumMuster

DrumMuster is a national program for the collection and recycling of empty, cleaned, non-returnable crop production and on-farm animal health chemical containers. Council is a partner in the program and provides a collection point at the Gloucester Landfill. The facility is used regularly by the local community. All that is required is that the containers/drums are triple rinsed and lids removed before being dropped into the collection area. This year 1260 containers were collected from the facility at Gloucester; this is down by 340 containers from the previous year.



Figure 16 DrumMuster Compound at Gloucester Landfill

Mobile Muster

Council acts as a drop off point for people to dispose of old mobile phones, chargers and batteries.

On average Council collects approximately 20kg of phones each year. This years 20kgs collected contributed to the “Old Phones, More Trees” campaign, a partnership with Landcare Australia. Our contribution assisted in gaining the total of 25 000 trees to be planted by Landcare over the next 12 months.

Council promotes Mobile Muster through the Council half pages adverts in the local paper and the Quarterly Environmental Newsletter.

Recommendations:

Undertake community education to reduce waste overall and to improve recycling re-use and recovery (including DrumMuster).

Prepare a design and construction project for a waste and recycling transfer station at the Gloucester Waste Depot



Noise

State: Good

Pressure: Low

Response: Good

Noise pollution can be defined as unwanted or offensive sounds that unreasonably intrude into our daily activities. Noise can have many sources, most of which are associated with urban development: road, rail and air transport; industrial noise; neighbourhood and recreational noise.

In relation to managing noise Gloucester Shire Council has developed a noise zone map for the airport. Properties within the possible affection zone are identified in planning certificates issued by Council under Sec 149 of the Environmental Planning and Assessment Act 1979.

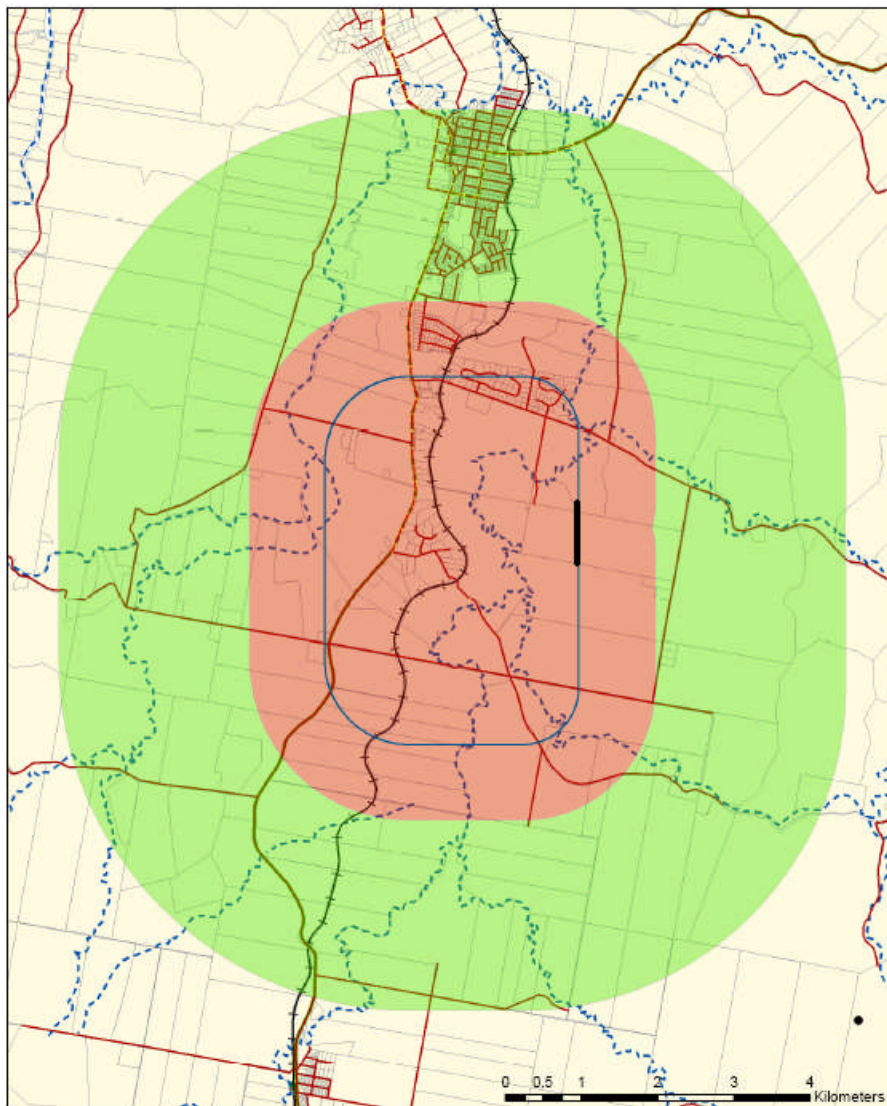


Figure 17 Airport Noise Map



Barking Dogs

The main neighbourhood noise complaints received by Council are in regard to barking dogs. Complaints are managed under the Companion Animals Act 1998 and council's Companion Animal Management Plan. The plan identifies the management objectives that will assist Gloucester residents in maintaining responsible ownership of their pets (both cats and dogs). Companion animals play an integral role in society, but can cause conflict when irresponsible pet ownership occurs.

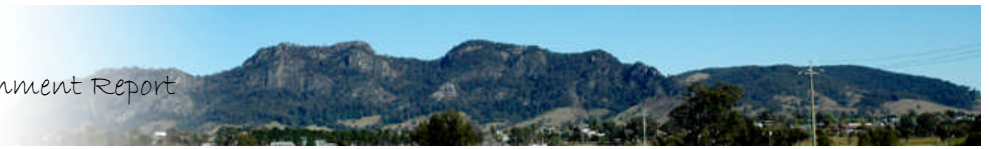
Council encourages neighbours to work on resolving barking dog issues with the dog's owner prior to contacting council as on many occasions the owner is unaware of the issue, and quite often is happy to resolve the issue (GSC 2006). Over the last 12 months Council received 12 complaints in relation to barking dogs, with many of these complaints on going.

Stratford Coal

Stratford Coal is another main source for noise for residents of the Stratford and Craven. Details of their monitoring requirements and results are explained under the extractive resources section.

Recommendations

Carry out inspections and patrols as required in regard to animal complaints
Continue to participate in Community Consultative Committee's for both Gloucester Stratford Coal and AGL
Take community concerns to the Community Consultative Committees as received by the community.



4. Land

Topography

State: good
Pressure: low
Response: good

The Gloucester Shire reaches a height in excess of 1500m AHD on the Barrington Tops to the west and falls rapidly to the east to the town of Gloucester, which has an altitude of approximately 100m AHD. Gloucester Bucketts form the main topographic feature for the township of Gloucester, and are oriented in a north south direction.

The general topography is typified by steep mountain ranges falling to narrow river flats. The flatter land is concentrated along the drainage paths of the Avon, Barrington and Gloucester Rivers. The area surrounding the township of Gloucester and to its north and generally along the more fertile river flats has been cleared for agricultural purposes. The steeper mountainous country to the west is predominantly uncleared, however, there are some areas that have been cleared for low intensity agricultural purposes (Hunter Development 2006).

Slopes vary significantly within the Shire with more than 75% of the Shire having slopes greater than 8°. This is generally too steep to cultivate and is either used for open grazing or native forest.

Table 6 Generalised Land Slopes within the Gloucester Shire.

	Type I	Type II	Type III	Type IV
Area (km²)	192	501	413	1843
% of total area	6.5	17	14	62.5

Source: Survey of Resources, 1952.

KEY:

- Type I – Mostly flat (Not more than 3° slope)
- Type II – Undulating to hilly (More than 3° slope & not more than 8° slope)
- Type III – Hilly to steep (More than 8° & not more than 15° slope)
- Type IV – Rugged (Over 15° slope)

The topography has played a major role in the development of the Shire. The steep slopes are seen as a constraint for agriculture, but have produced a significant diversity in flora and fauna, through climate variations and accessibility and produces unique opportunities for various forms of tourism (Hunter Development 2006).

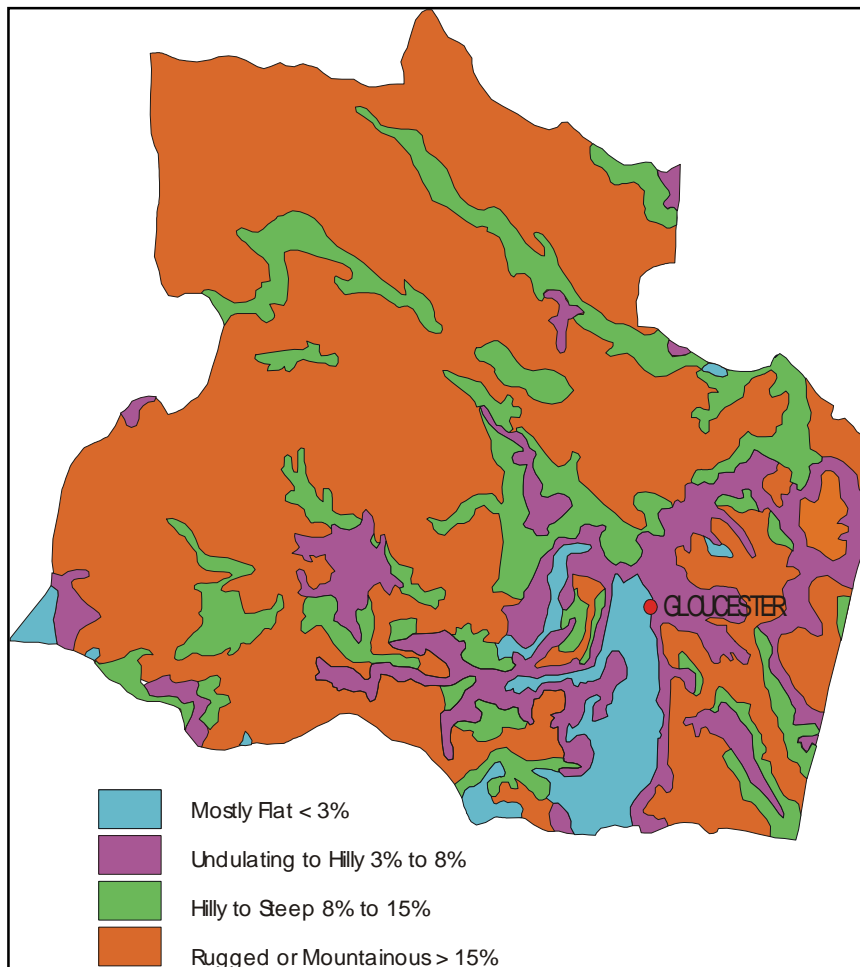


Figure 18 Slope Map of Gloucester Shire

Recommendations:

All development that occurs in slope areas greater than 15% are to provide geotechnical reports before any building works are approved.



Soils

State: Good

Pressure: Low

Response: Low

The Department of Land and Water Conservation (Dungog Soil Landscape Descriptions, 2000) has compiled mapping and description of soils in the Gloucester local government area. The following is a summary:

Barrington-Gloucester Plateau occurs on the undulating to rolling summit surface of Permian granodiorite, Carboniferous sediments and Tertiary basalt. The main soil landscape is Gloucester Tops (gp). The dominant soil types are moderately deep Red and Brown Dermosols, some Brown Kandosols and shallow Peaty Lithic Chernic Tenosols as well as very poorly drained Sapric Organosols in hanging swamps.

The **Barrington-Chichester Mountains** occupy highly dissected, steep to precipitous terrain on Carboniferous sediments in the centre and north-west of the area, including Chichester State Forest, Barrington Tops National Park and Chichester Dam catchment. The predominant soil landscape is Chichester (ci), with small areas of Williams Range (wi) and Wangat (wt). Soil types include moderately deep Red Dermosols, Brown Dermosols, Orthic Tenosols, Bleached-Leptic Tenosols, Chernic-Leptic Tenosols, Yellow Dermosols and some deep Yellow Kandosols.

The **Copeland Mountains** occupy steep hills and mountains on Devonian and Carboniferous sediments in the far north of the area. Dominant soil landscapes are Cockadilly Ridge (cd) and Mountain Maid (mm). Soil types include moderately deep Chernic Tenosols, shallow Leptic Rudosols, Brown Chromosols and deep Red Dermosols on sheltered colluvial midslopes.

The **Berrico Hills** occur on rolling hills comprised of Carboniferous and Devonian sediment in the far north of the area. Typical soil landscapes include Berrico (bo), Lame Cow Gully (lc) and Cockadilly Ridge (cd). Major soil types include moderately deep Brown Sodosols, Brown Chromosols and Red Kurosols, with deep Chernic Tenosols on steep upper slopes and colluvial lower slopes. Some shallow Leptic Rudosols and deep Red Dermosols also occur.

The **Stroud-Gloucester Basin** occurs in the axial centre of the Stroud-Gloucester Syncline on mainly undulating to rolling Permian sediments, with occasional steep hills. The steeper eastern and western boundaries of the syncline comprise basic and acidic volcanics and some sediments. Typical soil landscapes are Gloucester (go), Wards River (wd), Gloucester River (gc), Stroud Road (sr), Gloucester Buckets (gb) and Karuah River (kr).

The dominant soil types of Gloucester are deep Brown Sodosols, shallow to moderately deep Brown, Yellow and Grey Kurosols, moderately deep Bleached-Leptic Tenosols on Permian sediments and deep Yellow Chromosols on plains.

On basaltic parent material, moderately deep Brown Dermosols and Vertosols, Red Ferrosols and Chernic-Leptic Tenosols occur, with shallow Clastic Rudosols on rhyolites and acid volcanics. Deep Orthic Tenosols occur with Brown Sodosols on high terraces, and alluvial fans and plains (Soil Landscapes of the Dungog 1:100000 Sheet).



Recommendations:

Continue to under take REF assessments and Soil and Erosion Sediment control Assessments of proposed Council works to prevent soil erosion and/or loss.

Geology

State: Good
Pressure: High
Response: Fair

The Shire is partly within two geological frameworks. The majority of the Shire lies within the Tamworth Belt and is separated from the Central Block by the Peel and Manning River Fault Systems.

The geology of the Shire varies significantly. Fine to coarse grain sedimentary rocks inter-bedded with basic and acidic rocks are found in the south. The area between Gloucester and Stroud is part of the Gloucester Basin. This is a north south synclinal structure 40km long and 13km wide. It contains sedimentary, conglomerates, sandstones, siltstones, mudstones and coal. This basin represents a significant coal resource, which is presently being developed.

The northern part of the Shire is dominated by coarse siliceous and other sedimentary rocks interbedded with volcanic rocks. The Kangaroo Range and upper catchments of the Pigna Barney and Manning Rivers show outcrops of basic rocks.

The approximate geology of the Shire is shown in Figure 18

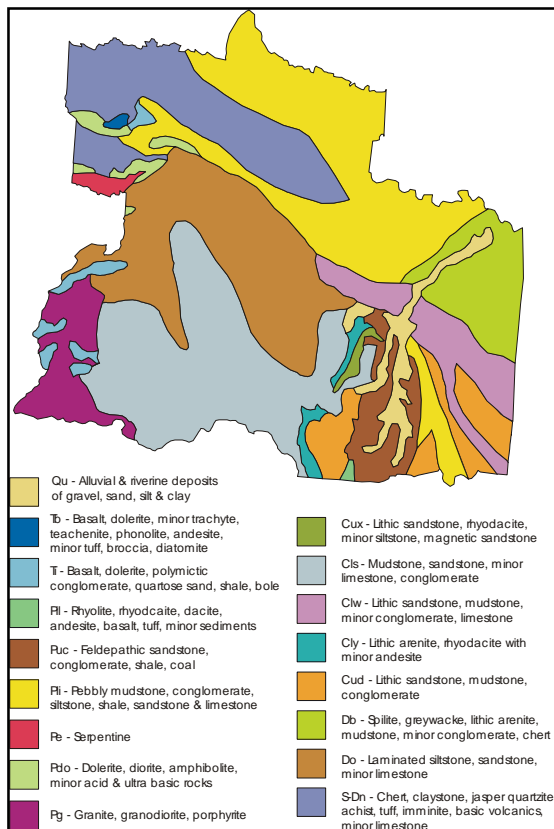
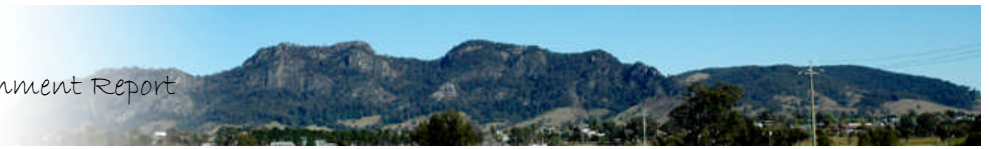


Figure 18 Geology of Gloucester Shire



Extractive Mineral Resources

State: good
Pressure: high
Response: fair

Exploration and mining in NSW have a long history, starting with the discovery of coal in Newcastle in the late 1700's, gold in the Central West in the mid 1800's, and silver in Broken Hill in the late 1800s. Many regional areas were developed following mineral discoveries and subsequent building of mines and communities (DECC 2008).

The recent growth in demand for resources from China and increases in oil and gold prices have led to a boom in exploration for a wide range of commodities. Forecasts indicate that demand will remain strong for the short to medium term, allowing the lead time necessary to discover and develop new resources (DECC 2008).

Exploration and mining in NSW are conducted under licences and leases issued by the Mineral Resources Division of Department of Primary Industries (DPI) under *Mining Act 1992* and *Petroleum (Onshore) Act 1991*. Any company or individual can apply for a title; however they must satisfactorily explain its proposed program and expenditure, demonstrate its technical, environmental and financial capacity to conduct the program, and explain how it will rehabilitate any disturbance and report the results, as required under the conditions of the exploration licence (DECC 2008).

The following maps illustrate the location of the all current Mineral, Petroleum and Coal Titles for the Gloucester local Government Area. The following licences are the current licences:

Petroleum Titles:

PEL 285 – Petroleum Exploration Licence – Expire 15 April 2012 - AGL Gloucester LE Pty Ltd, 19kms S GLOUCESTER

Petroleum Title Applications:

PELA 115 (1991) – Petroleum Exploration Licence Application - Pangaea Oil and Gas Pty Ltd, 8km west of GLOUCESTER

Coal Titles (there are no application titles)

Auth – Authorisation
EL – Exploration Licence
ML – Mining Lease

Auth 311 – Sept 82 to Nov 2012 for 5125HA, GLOUCESTER COAL LTD – 16km SSW of Gloucester

Auth 315 – Dec 82 to Nov 2012 for 7610HA, GLOUCESTER COAL LTD – 20km S Gloucester

EL6523 – Mar 06 to Mar 2012, 5525HA, GLOUCESTER RESOURCES LIMITED – 4km SSW Gloucester

EL6524 – Mar 06 to Mar 2012, 2091HA, GLOUCESTER RESOURCES LIMITED – 17km SSW Gloucester

EL6563 – May 06 to May 2012, 3600HA, GLOUCESTER RESOURCES LIMITED – 17km SSW Gloucester

EL6904 – Oct07 to Oct 09, 1760HA, GLOUCESTER COAL LTD, 19km S Gloucester



- ML1360 – Dec 94 to Dec 2015, 754.70HA, CIM STRATFORD PTY LTD, 13km S Gloucester
- ML1409 – Jan 97 to Jan 18, 87.32HA, CIM STRATFORD PTY LTD, 12km S Gloucester
- ML1447 – Apr99 to Mar 2020, 52.21HA, CIM STRATFORD PTY LTD, 12km S Gloucester
- ML1521 – Sept 02 to Sept 2023, 4.5HA, GLOUCESTER COAL, 14km S Gloucester
- ML1528 – Jan03 – Jan2024, 205.90HA, CIM STRATFORD PTY LTD, 11km S Gloucester
- ML1538 – Jun 03 to Jun 2024, 1.03HA, CIM STRATFORD PTY LTD, 14km S Gloucester
- ML1577 – Mar06 to Feb 27, 2.24HA, GLOUCESTER COAL LTD, 10km S Gloucester

Current Mineral Titles (there are no application titles)

- EL4848 – 31/05/95 to 18/08/10, metallics and mineral sands, HEWETT, Robert Patrick – 45km NW Gloucester
- EL6885 – 21/09/07 to renewal sought, metallics, M.A. ROCHE GROUP PTY LTD – 50kms N Gloucester
- EL7149 – 10/06/08 to 10/06/10, metallics and ruby, HEWETT, Robert Patrick – 47km WNW Gloucester
- EL7188 – 14/08/08 to 14/08/10, metallics, M.A. ROCHE GROUP PTY LTD – 55km N Gloucester
- EL7350 – 10/06/09 to 10/06/11, geothermal substances, GRADIENT ENERGY LIMITED - 15km S Gloucester
- EL7385 – 18/08/09 to 18/08/12, geothermal substances, GEOGEN VICTORIA PTY LTD - 52km WNW Gloucester
- EPL 1094 19/08/88 to 18/08/10, metallics, mineral sands, non-metallics, diamond, corundum, ruby and sapphire, , HEWETT, Robert Patrick – 45km WNW Gloucester

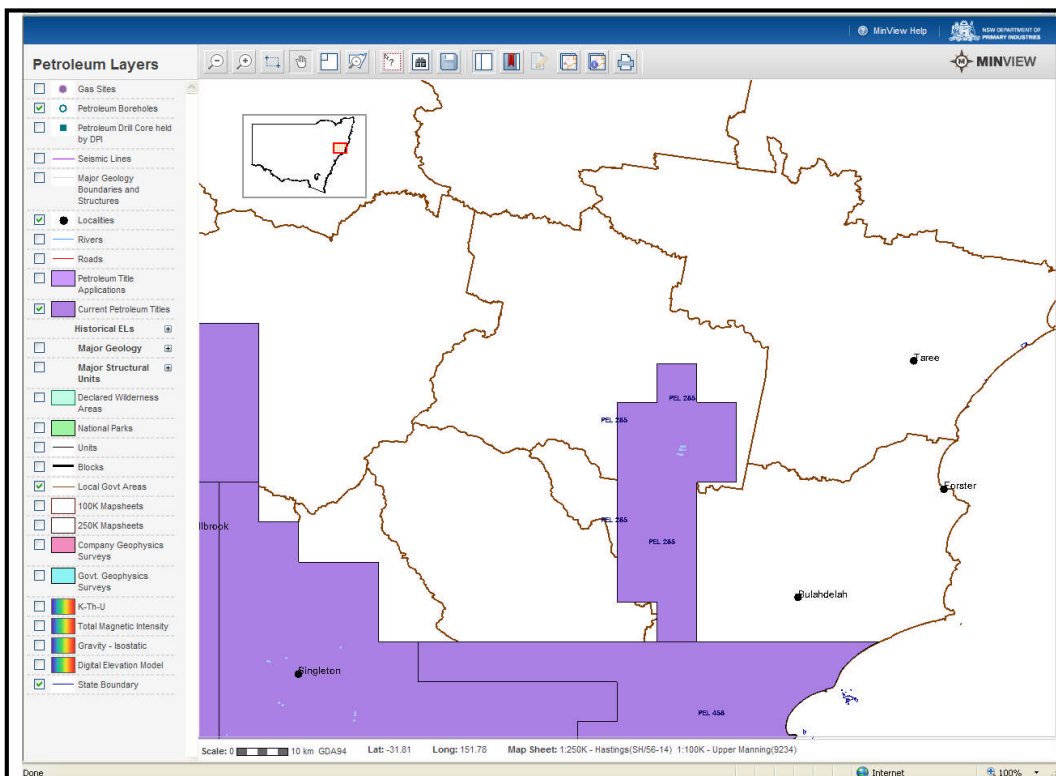


Figure 19 Current Petroleum Licences

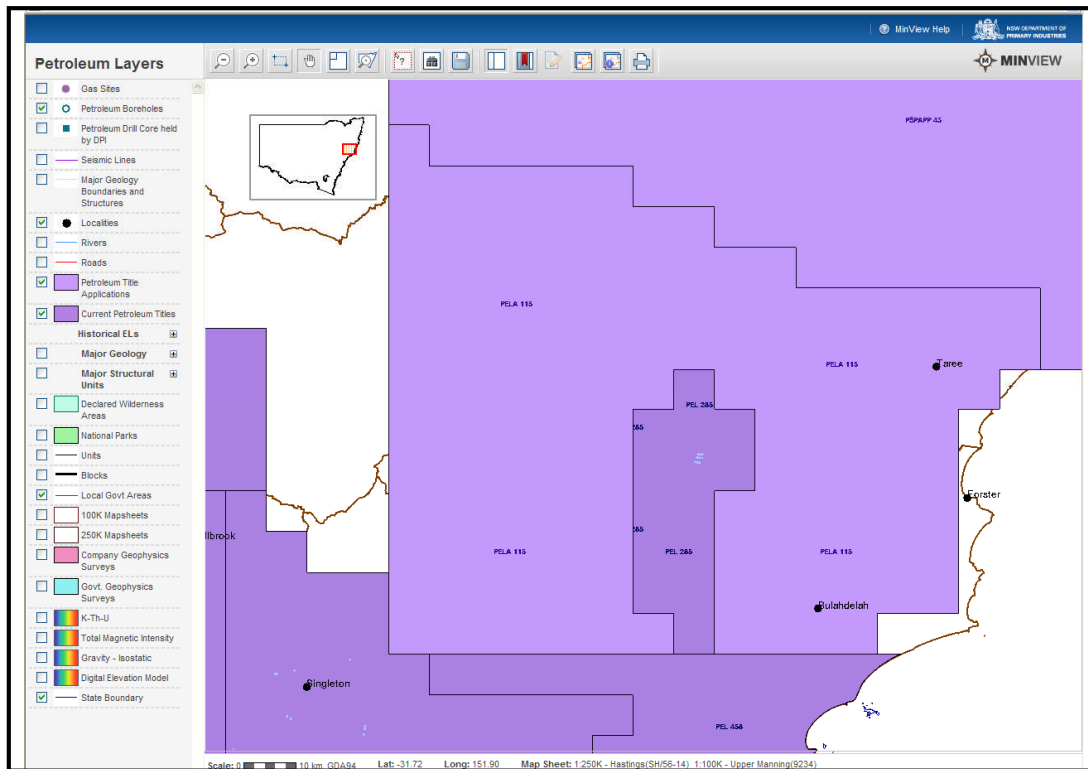
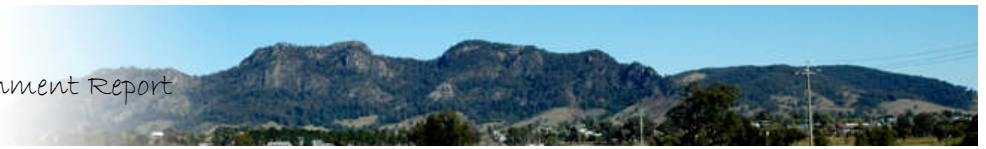


Figure 20 Current Petroleum Title and Title Applications

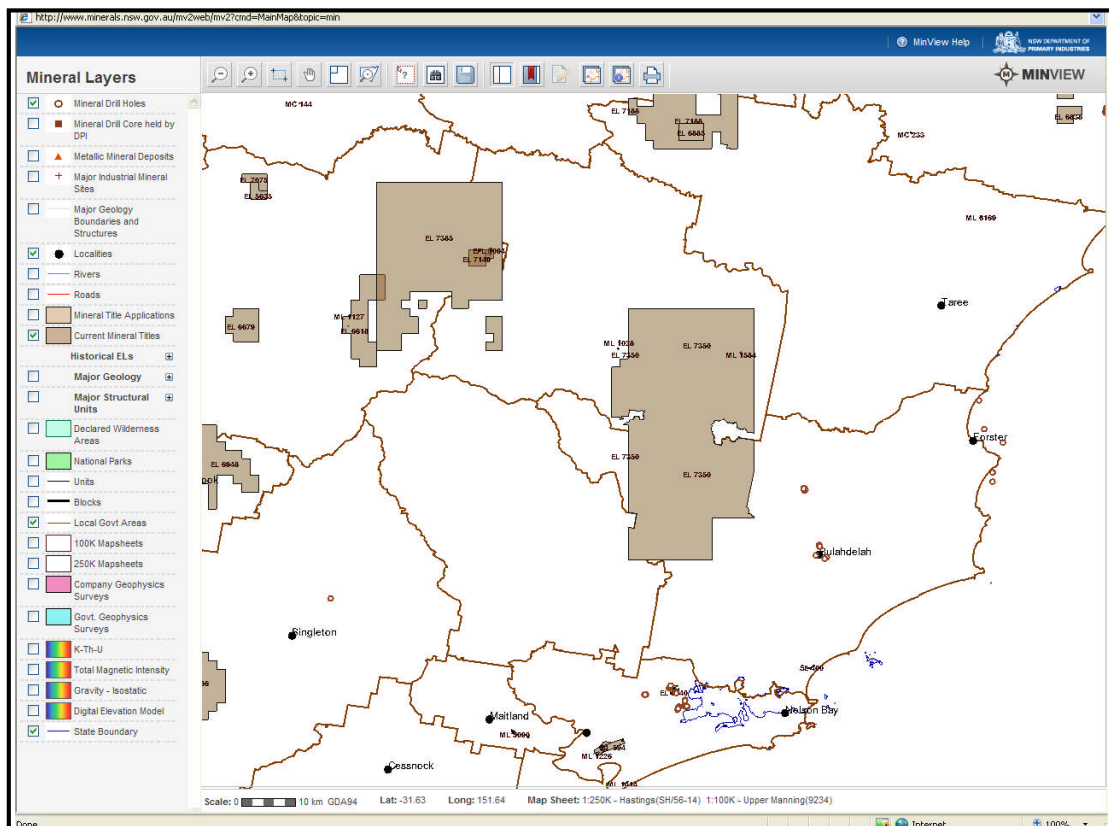


Figure 21 Current mineral Titles (there are no current applications)

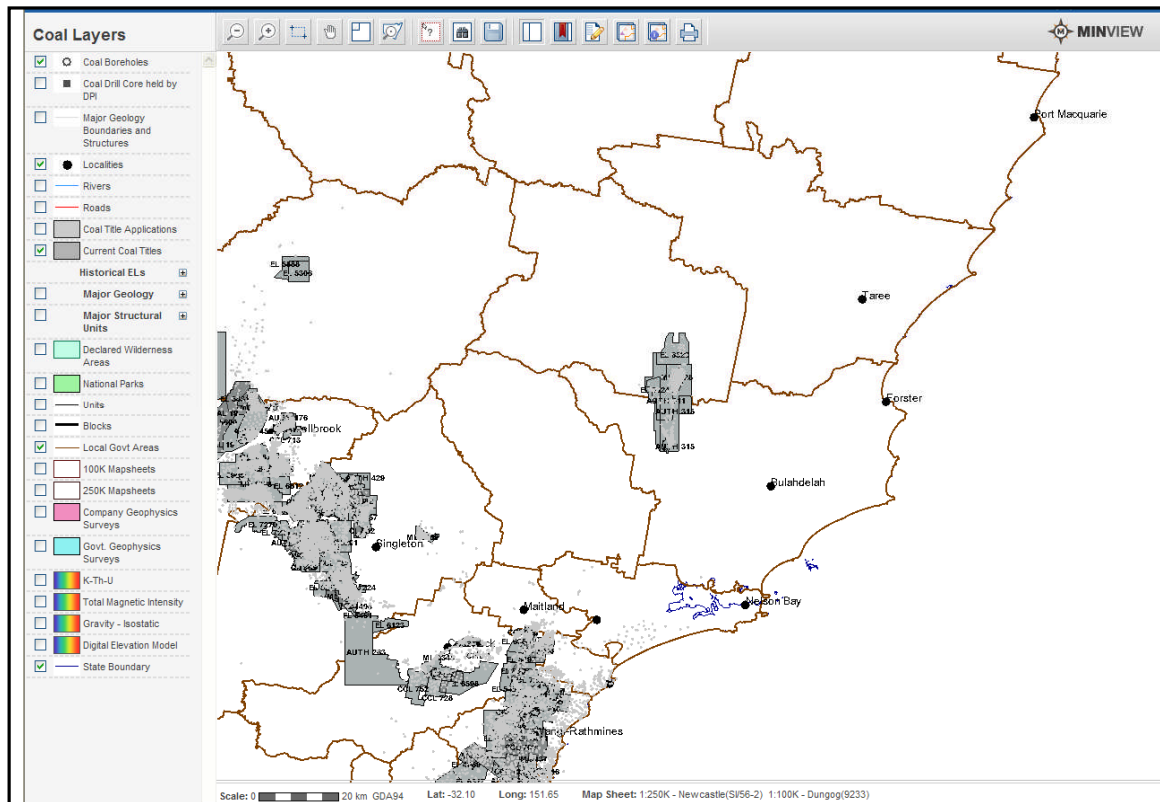


Figure 22 Current Coal Titles

Stratford Coal Mine Operations

The Stratford Coal Mine Operations work within the Gloucester Shire Boundaries. The mine undertakes regular environmental monitoring as a condition of their licensing. The monitoring undertaken includes:

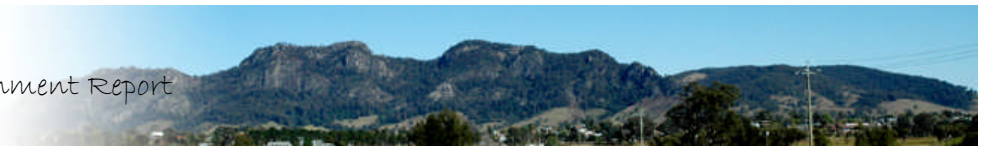
- Surface water quality
- Surface water flow
- Ground water
- Static Dust
- High Volume Air Sampling
- Noise and blasting

Water quality

Water quality sampling is undertaken monthly and presented at the consultative committee. The parameters measured are pH, Total Suspended Solids (TSS) and Electrical Conductivity (EC) (salinity).

Comparing the results of upstream measurements and downstream measurements the results show:

- The pH remains relatively unchanged to natural levels, and is consistently in the pH range of 7-8 at all sites.
- The TSS varies greatly from month to month, and on 3 occasions the downstream levels were higher than the upstream levels, and on 3 occasions the upstream levels were higher than the downstream readings.
- EC is naturally high in around the Stratford area. Upstream readings are considered to represent the quality of the water in a more 'natural' state, and prior to an influence from the mine. Upstream readings range between 180 to



620uS/cm. The ideal reading for inland streams is 300, so this demonstrates that the levels are naturally higher in the monitoring area. The first monitoring site just outside the boundary (W5) showed higher readings (range 180uS/cm to 1500uS/cm) than both upstream and other downstream monitoring sites (180uS/cm to 1000uS/cm). W2 is further downstream from W5 and the readings drop off significantly. Overall the monitoring sites average readings around 600 – 800uS/cm.

Dust Monitoring

Stratford Coals dust monitoring is outlined in the *Dust Management Plan*. Dust monitoring is undertaken in two forms – static dust monitoring, and high volume dust sampling. Static dust monitoring (SDM) is recorded monthly and EPA limits state that this must not exceed 4g/m²/month (Stratford Coal 2002). Monitoring results over the last 12 months indicate that the levels are well under the EPA limits, with one outlier at one location in July 2008 due to contamination of that sample. In general readings were between 0.5 and 1g/m²/month.

The high volume dust monitoring is undertaken every 6 days for a 24hr period and monitors for particulate matter less than 10 microns in size (PM10). EPA limits are 50ug/m³ (24hr ave) and 30ug/m³ (annual mean). Monitoring results show that the mine is consistently well under these limits.

The two types of monitoring are undertaken, PM10 is important for health criterion and SDM is used for determination of amenity impact (Stratford Coal 2002).

Noise

Stratford Coal monitors all noise and conducts quarterly noise monitoring. Complaints are registered and addressed in accordance with Environmental Protection Licence 11745 and/or EPL 5161 and relevant complaint response protocols outlined within the Projects Environmental Management plans. The dominant noise is produced by export train loading in loop and the track dozer operating high on stock pile. September 2008 monitoring indicated that there was potential to cause an adverse impact on some residents of the Stratford/Craven residential/rural landholders. All reports following this time have all recorded acceptable noise levels.

Weather parameters are considered during monitoring as this can have an effect on noise levels, especially wind and temperature inversions.

Gas Exploration

In the last 12 months AGL Energy Limited (AGL) took over full ownership of the Gloucester Gas project from the joint venture shareholders Lucas Energy and Molopo. AGL now owns and operates 100% of PEL 285 and is responsible for all activities in the Gloucester Project (AGL 2009).

AGL commenced the community consultation process in September 2008 with an open day for the community to attend and the development of the Community Consultative Committee (CCC). The committee provides a forum of open discussion between AGL and the community. The committee is made up from representatives from local government, community organisations, and individuals that are interested in the process. Consultation is ongoing with information sessions held and advertised in the Gloucester Advocate (AGL 2009).



Recommendations:

Continue to participate in Community Consultative Committee's for both Gloucester Stratford Coal and AGL

Continually identify and update information on mining activities for Council

Take community concerns to the Community Consultative Committees as received by the community.

Review Community Health Issues

Salinity

State: Good

Pressure: Moderate

Response: Good

Salinity is salt in waterways. The salt entering water bodies can come from both point and diffuse sources. Point sources of salt are identifiable single sites typically associated with urban, industrial, and commercial activities. Diffuse sources of salt are those that are not easily identified as single sites, but are large areas from which salt originates. These are typically associated with areas of agricultural land use.

The main point sources of salt in the Hunter are power stations and coal mines. Groundwater is generally saline, highly mineralised water with slightly to highly acidic pH and is generally unsuitable for domestic consumption or irrigation. Saline groundwater which flows into mine workings must be disposed of to allow efficient mining practices to continue. While most coalmines reuse large amounts of saline wastewater on site, some need to dispose of excess saline water through discharge (Department of Land and Water Conservation 2002).

Salinity can cause many issues in regard to supporting crops and vegetation types that can grow in areas affected by salinity. Potentially salinity could have an effect on the farming practices undertaken in regard to crops and pasture development if not monitored.

Stratford Coal undertakes regular monitoring of the groundwater around the mine as part of their licence requirements and also monitors the surface water. Results are detailed in the above section.

The local Gloucester Environment Group are also looking at extending water monitoring sites and hope to include salinity measurements as part of this work.

Soil Erosion

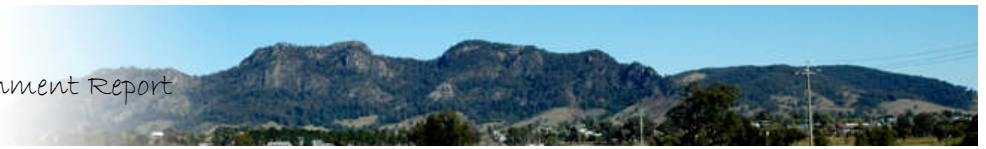
State: Good

Pressure: low

Response: Fair

Some soils are more prone to erosion than others. The most important factor for preventing soil erosion is vegetation cover because plants hold the soil together and shelter the surface of the land from rain and wind.

Soil erosion is increased when the surface of the soil is exposed and can be blown or washed away by wind and rain. When soil becomes compacted, water cannot filter through it and instead runs over the surface eroding it. The soil can then wash into waterways, smothering aquatic ecosystems and adding sediment to streams, which



changes the character of the stream and increases the turbidity of the water (CMA 2007).

Soil profile mapping and erosion hazard mapping carried out by State Forests in the Gloucester Chichester Management areas have found that the majority of the area has low to medium soil erosion hazard. Some areas in the steeper slopes have a high hazard (Hunter Development Brokerage Pty Ltd 2006).

An area of potential erosion hazard is the banks of streams and rivers in the area. Inappropriate management practices including allowing cloved and hooved animals direct access to streams has reduced vegetation along the stream banks and increased their erodibility (Hunter Development Brokerage Pty Ltd 2006).

Hunter Central Rivers CMA has been working with local community groups and farmers to fund off-stream watering and improved riparian fencing and has contributed \$39 000 in funding to projects in the Gloucester Shire.

Fire Management

State: Fair

Pressure: High

Response: Good

Bushfires are a normal part of rural living where there are large areas of maintained bushlands. Bushfire is both a landscape scale disturbance and a landscape management tool (CMA 2007). The management of people and their properties living in these areas are important, to prevent loss of property and life.

Bushfire prone areas

A bush fire prone area is an area of land that can support a bush fire or is likely to be subject to bush fire attack. Bush fire prone areas are identified on a bush fire prone lands map which have been prepared for most councils across NSW. The map identifies bush fire hazards and associated buffer zones within a local government area. These maps are to be updated every 5 years.

Bush fire prone land maps are prepared by local councils across the State of NSW and are certified by the Commissioner of the NSW Rural Fire Service (RFS). New development on areas identified as bush fire prone are subject to the development and planning controls of '*Planning for Bush Fire Protection 2006*' and must be designed to improve the survivability of the development and the occupants that are exposed to a bush fire hazard.

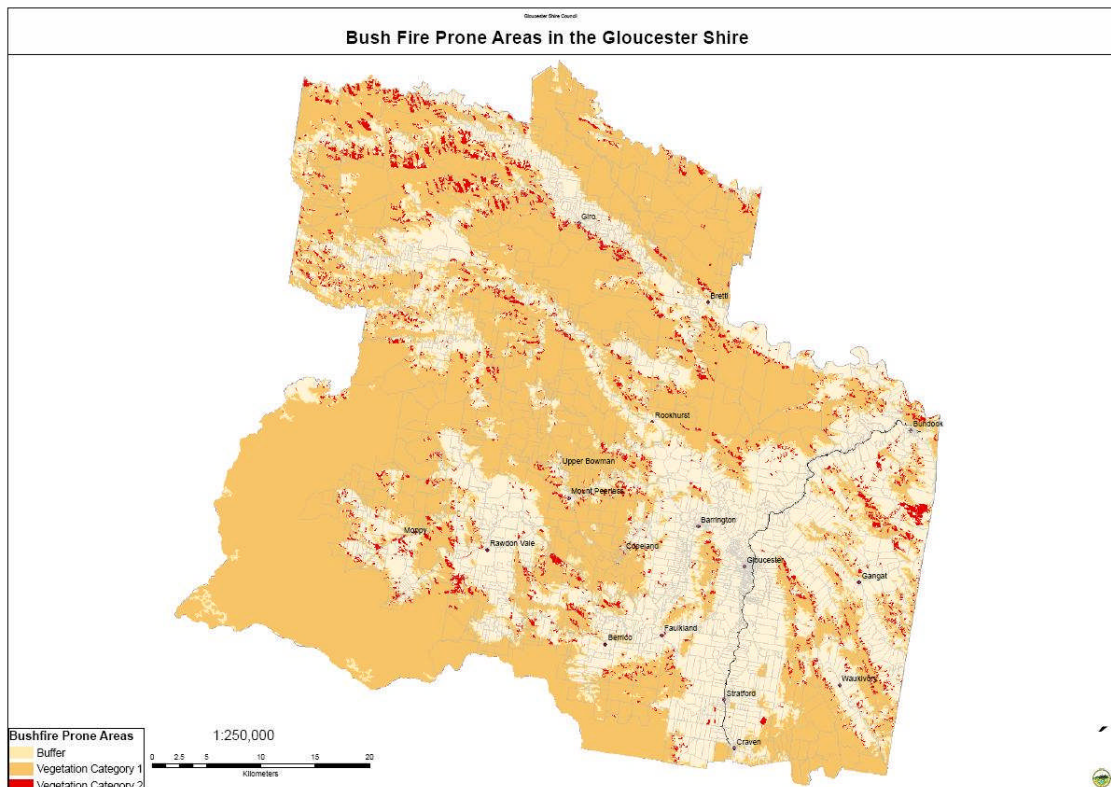


Figure 23 Gloucester Shire Bushfire Prone area Map

Planning requirements for Bushfire prone areas

All Development Applications received by Council are reviewed to determine whether the land is bushfire prone. Properties identified as containing bushfire prone vegetation require the applicant to provide either a Self-Assessment of the proposed building site, or the submission of a report from a bushfire consultant. Where Council is of the opinion that only minor bushfire protection measures are required, a number of standard bushfire conditions are included in the development consent. However, where Council is of the opinion that more stringent conditions may need to be included protect the building, a referral is sent to the Rural Fire Service for their comment. Conditions recommended by the Rural Fire Service are then included in the development consent. Such requirements must then be incorporated into the construction of the building, prior to the issue of an Occupation Certificate.

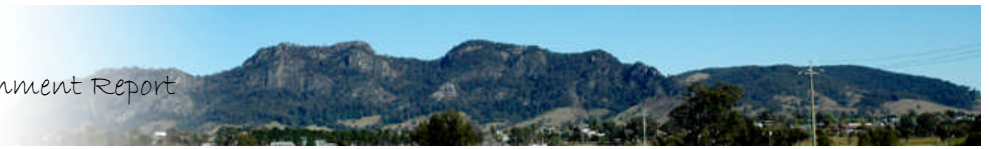
Hazard Reduction

Council undertakes hazard reduction around the Shire. This involves slashing fire breaks around the main village areas including Bundook, Barrington, Stratford and Craven. Other trail areas are slashed regularly to act as fire breaks and these areas include Mt Myra Trail, Bucketts Way East and South and Cuthill Trail.

NSW Rural Fire Service has extensive information on building in a bushfire prone area, household assessment of the risk of bushfire on the home, bushfire survival guide.

Recommendations:

- Continue to work with Rural Fire Service on bushfire matters
- Continue the hazard reduction work around the village areas
- Attend the quarterly Emergency Services Committee



Agriculture

State: good

Pressure: moderate

Response: good

Gloucester Shire covers an area of 2949km². The NSW Department of Primary Industries provides a classification of lands suitable for Agriculture. There are 5 classes of classification. Classes 1-3 are considered prime agricultural land and it should be preserved for agricultural uses. Class 4 is suitable for grazing, however not suitable for cultivation. Class 5 land would only be suitable for rough grazing and not generally suitable for agriculture.

Table 7 Agricultural Classification of Land by Area.

	Area (hectares)	(%) of Total Area
Class I	0	0
Class II	410	0.2
Class III	38450	16.9
Class IV	108209	47.5
Class V	80720	35.4

Gloucester is a typical agriculturally based regional community with a significant reliance on agricultural production and the Agricultural production service sector industry. The main agricultural industries for Gloucester are beef and dairy cattle. There are some intensive agricultural industries including, aquaculture and poultry production. Agriculture is managed by the Department of Primary Industries (DPI) and Gloucester forms part of the Mid Coast Region which also includes Great Lakes, Greater Taree and Hastings.

DPI work closely with the farmers across the region on a range of projects and farm management issues.

Agriculture and sustainability

Making efficient use of resources on dairy farms is the aim of a new project underway across the Mid North Coast of NSW. The EWEN project is an initiative of the Mid Coast Dairy Advancement Group (DAGs), which supports more that 155 dairy farms in the region.

The EWEN project commenced in late 2008 and builds on the success of the Farmer Targets for Change program, which was recognised recently through the Hunter-Central Rivers Champions of the Catchments Awards.

Energy audits have been completed for all participating farmers. The audits have identified both low cost and high cost energy saving options and allow the farmers to access state funding from Department of Environment, Climate Change and Water. A workshop on the energy audits was held here in the Gloucester Shire. Several farmers have taken this option on.

Nutrient reports have also been carried out. These reports enable property owners to identify more accurately their fertilising needs. Good fertiliser management prevents unnecessary excess nutrients been going into waterways.



Currently assessments have just commenced on water management with a focus on irrigation. Property owners will be benchmarked against each other to allow them to see where their systems sit in regard to efficiency against neighbouring properties. The information gathered during the project will be analysed and opportunities for improvements identified.

Hunter – Central Rivers CMA

HCRCMA funded 6 Sustainable Agriculture projects (a total of \$63 825) which delivered a fenced dam, soil erosion control, off-stream watering, internal subdivisional fencing, in-stream works, dairy effluent systems, sustainable grazing management, nutrient management, native vegetation management and protection, weed control and stock access control to waterways.

Recommendations

Support local projects where possible with CMA and DPI



5. Atmosphere

Climate Change

State: Fair

Pressure: Moderate

Response: Poor

The Climate of the Earth has always been and will always be changing. Since the mid 1970s, there is strong evidence that has emerged to show that global temperatures are on the rise, and that human activity is responsible for at least part of this rise (Whitaker, 2007). In recent years climate change has become one of the key issues for all levels of government to address and is intrinsically linked to green house gas production and the Enhanced Greenhouse Effect. It is often referred to as global warming.

Climate change can be addressed by both adaptation and/or mitigation measures.

Adaptation measures

Actions in response to actual or projected climate change and impacts that lead to a reduction in risks or a realisation of benefits. A distinction can be made between a planned or anticipatory approach to adaptation (i.e. risk treatments) and an approach that relies on unplanned or reactive adjustments (Australian Greenhouse Office, 2006).

Mitigation measures

Mitigation is the response to measures that reduce the emission of greenhouse gases into the atmosphere or enhance their sinks, aimed at reducing their atmospheric concentrations and therefore the probability of reaching a given level of climate change (Australian Greenhouse Office, 2006).

Enhanced Greenhouse Effect

State: Moderate

Pressure: Moderate

Response: Poor

The earth's atmosphere is made up of a mixture of gases including nitrogen, oxygen and argon. This also includes greenhouse gases such as carbon dioxide, water vapour, methane, ozone and nitrous oxide. The greenhouse effect is radiation passing through the atmosphere and being reflected back off the earth's surface, this process enables the earth temperature to accommodate human, plant and animal life. The enhanced Greenhouse effect is when more radiation is trapped by an increase in Greenhouse Gas concentrations, effectively 'trapping' radiation within our atmosphere.

With an increase in Greenhouse Gases within our atmosphere, we are trapping more heat within our atmosphere essentially raising the Earth's surface temperature.

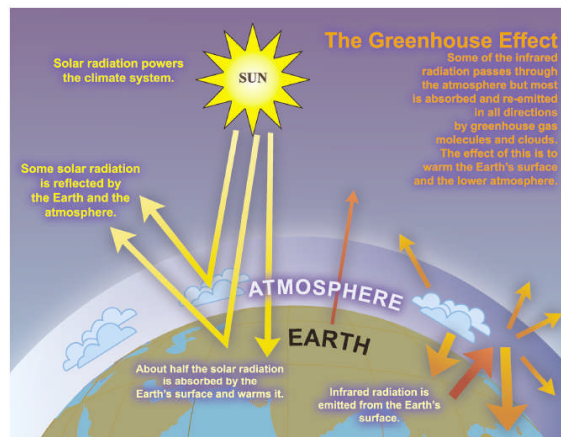


Figure 24 Greenhouse Gas Effect

Council works closely with Hunter Council's environment division (Hunter and Central Coast Regional Environmental Management Strategy) on implementing and developing projects to reduce our Greenhouse Gas emissions. Currently underway Gloucester Shire Council is participating in the Focus on Energy Project, and is involved in the development of several other projects that will further improve our actions towards greenhouse gas reduction.

Hunter, Central and Lower North Coast Regional Climate Change Project.

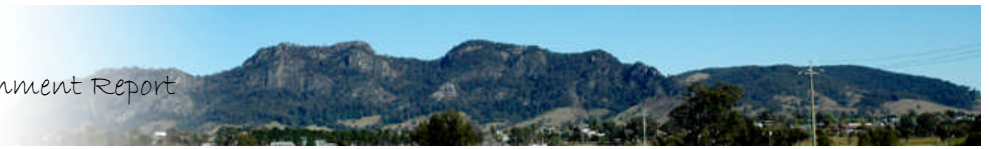
The Hunter, Central and Lower North Coast Regional Climate Change Project is an initiative of the Hunter and Central Coast Regional Environmental Management Strategy (HCCREMS) and its 14 member councils.

The project was commissioned by the councils of the region and completed by the University of Newcastle over a 2yr period. The results generated confirmed impacts of climate change will vary over the region. The information provided by the project is at a level that has previously been unavailable and will be an invaluable tool for government, industry and the community alike.

The official release and media launch occurred at the Gloucester Cattle Sales on in July to emphasise the importance of climate change and the value of the research not only to councils, but to a range of stakeholders including the agricultural sector.

The research was the first of its kind in Australia. The process undertaken was a comprehensive review of the region's climate history, analysis of variability, and identification of the relationship between these historic climate patterns and the 12 synoptic types. The synoptic types are developed from sea level pressure outputs of the CSIRO Mark 3.5 Global Climate Model (which used atmosphere, land surface, oceans and sea ice).

The results have been created at both a regional and sub-regional level that will enable local government, other government agencies, industry and the community to more accurately assess and prepare for the potential risks posed by climate change on both a subregional and seasonal basis.

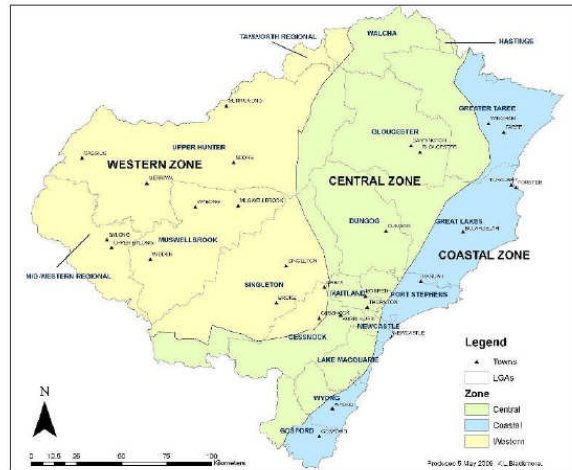


Results for the Gloucester Region

The project area covered all of the 14 Councils, across these Councils the research showed 3 distinct climate zones (see Figure 25). Gloucester falls within the Central zone.

Projections are provided for the period 2020-2040, 2040-2060 and 2060-2080, and where there are minimal changes between these periods projections are provided for the entire period 2020-2080.

Projections are provided for a range of climatic variables including rainfall, temperature, humidity, pan evaporation, water balance, wind, sea level rise, wave climate and extreme events.



Climate zones within the Region

Table 8 Summary for the Gloucester region (HCCREMS, UofN (2009)):

Variable	Summer	Autumn	Winter	Spring
Minimum Temperature	Cooler ~0.8°C decrease	Warmer ~1.5°C increase	Warmer ~1.2°C increase	Cooler ~0.2°C decrease
Maximum Temperature	No significant change	Warmer ~1.8°C increase	Warmer ~1.6°C increase	Warmer ~1.3°C decrease
Rainfall	No significant change	No significant change	Drier ~12% decrease	Wetter ~11% increase
Water Balance	~1.3mm increase	~1.9mm decrease	~0.5mm decrease	~1.3mm increase

Extreme events include storms, high rainfall, extreme heat and frost. This was the most difficult area to predict due to the nature of the events. These types of events also pose a significant risk in regard to personal injury, infrastructure damage and capacity, social disruption and environmental damage.

Projected changes included:

- An increase in Autumn and Winter for storm events
- Increased frequency in Summer and Autumn for extreme rainfall events and a decrease during Winter and Spring
- Increase during Summer and Autumn for extreme heat events
- No change to winter frosts, but Autumn and spring are projected to have increased frost events

Community Workshops

Two workshops were held for the local community to attend and find out more about the projects results and undertake in a discussion on areas of concern and potential



foreseen impacts for the Gloucester Community. Each workshop had approximately 8-10 participants.

The workshops commenced with a 45 minute presentation on the research and its findings. The second half of the workshop involved the participants to list areas of priority/concern/risk regarding the following main elements:

Rainfall

- There will be a need to harvest, collect and store water
- Affect the crop pasture selection to cope with seasonal distribution requirements
- Changes in Cloud cover and sunshine hours could change crop production
- Impact of variation in water flow on electricity generation
- Crop and pest disease (changes with heat and humidity)
- Potential increase in cattle mastitis due to increase in mud and increase in temperatures

Minimum Temperature

- Decrease in heating costs for winter and cooling costs for summer
- Impacts on tourism – decrease levels of snow or not as cold so more people may camp
- Decrease in snow and potential impact this may have on the water supply of local rivers and wetlands
- Improved pasture growth during winter and spring

Maximum Temperature

- Potential warming in autumn and winter beneficial for food crops
- Warming changes the growing seasons – flattening out of temperature ranges may lead to loss of seasonality
- Increase in water and electricity consumption

Pan Evaporation

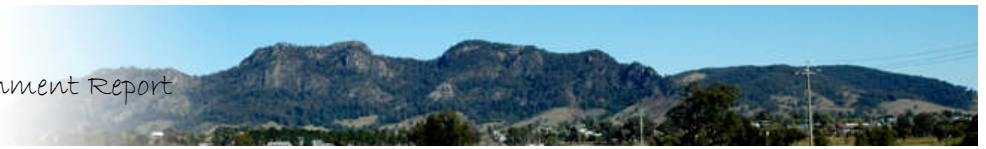
- Water Storage implications
- Opportunity to increase soil moisture retention during high evaporation times
- More soil moisture leading into summer

Water Balance

- Water Storage important
- Potential for decreased snow which could lead to decrease in river flow and availability in summer
- Positive in summer for pasture and crop growth

Extreme Events

- Extreme rain events can impact on hay and silage production
- Storm damage and flooding and their impacts
- Ability of infrastructure to cope with extreme events
- Insurance issues for all extreme events
- Wetter periods affect dairying through – mud, storage ponds and environmental impacts
- Loss of top soil from good farming land
- Potential for increased bushfire severity
- Heat stress on people (especially the elderly), cattle and crops



From the information provided by the participants the two key areas identified as important were:
Water and how the climate changes affect the way we collect and store this valuable resource.
Farm management in regard to potential issues for dairy cattle, pasture and crops

The data will also be able to assist Council in regard to its risk management and infrastructure management

Focus on Energy Project

Australians are the biggest greenhouse gas emitters of the developed world. Every year the average Australian household produces 14 tonnes of greenhouse gases. 66% of household greenhouse gas emissions are a result of electricity use within the home.

The Focus on Energy project provides residents with free access to Power Usage Meters to help households conduct a home energy assessment.

The assessment will help pinpoint high energy consuming appliances and provide information on how much each appliance costs to run. By better understanding energy consumption people can learn to make simple changes, potentially saving several hundred dollars a year and tonnes of greenhouse gas emissions.

The Power Usage Meter is a simple handheld device used to measure the electricity consumption and running costs of electrical appliances. The device calculates how much money it costs you to run your appliances for every hour, quarter or year

The unit can even calculate the power used by appliances, like TV's, that use standby power. Standby power is nearly 10% of household energy consumption. Just by turning appliances off at the wall, households can save around \$100 per year.

The power meters are available from Council's Administration Office and are loaned out for 2 week periods to allow residents ample time to check appliances in the home.

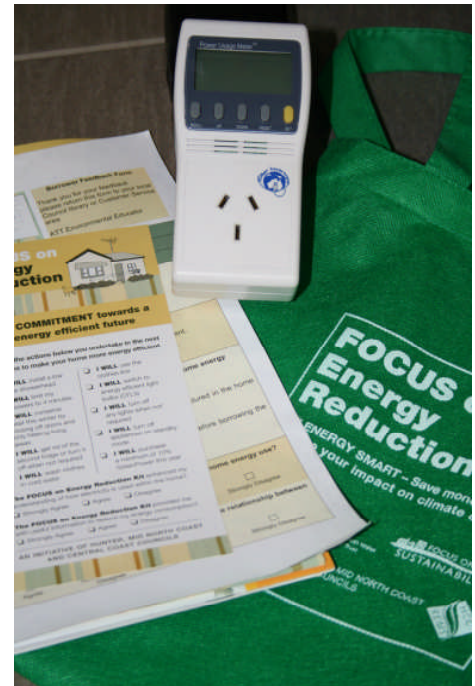


Figure 26 Energy Reduction Kit

Gloucester's Farmers Market – Food Miles reduction

Council is currently driving and assisting local residents and the Gloucester Project in the development of a local Growers Market that is expected to commence early 2010. The markets will provide an outlet for local growers and backyard growers to sell produce locally. This will help reduce food miles and provide residents with the opportunity to purchase truly local produce.

Local Adaptation Pathway Program with HCCREMS

This project is in its infancy and will be implementing a climate change risk assessment and adaptation planning program across the 14 member Council's. Gloucester will be part of the Rural Council's Project.

The Rural Councils' project will undertake a climate change risk assessment and adaptation planning process. Council will identify individual organisational risks



arising from climate change and developing adaptation strategies in response to these. The project will also identify areas of common risk across these councils and determine actions and priorities for collaborative, cross border adaptation planning and implementation.

BASIX

All new development in Gloucester must comply with Building Sustainability Index (BASIX). Introduced by the NSW Government, BASIX, the Building Sustainability Index, ensures homes are designed to use less potable water and be responsible for fewer greenhouse gas emissions by setting energy and water reduction targets for house and units. BASIX is one of the most robust sustainable planning measures in Australia, delivering equitable and effective water and greenhouse gas reductions across NSW.



Figure 27 How BASIX works to reduce Greenhouse Gas emissions

Your Green House Display

Council had Department of Environments Greenhouse Display for 2 weeks at the administration Centre to promote simple steps that individuals can undertake to save energy and water and reduce greenhouse gas and waste. Every room in the house was represented, and a range of tips for each is displayed on the house.

Figure 28 Green House Display





Community works

The Gloucester Project is a community based organisation that is driving climate change research and development for the Gloucester Shire using the Transition Town principles. Some of the major initiatives that are being undertaken by the Gloucester Project include:

Gloucester's Farmers Market – The Gloucester Project is one of the main drivers in the development of the markets and play a strong role in the context of reducing food miles and in the long term developing Gloucester as a 'food bowl' area, and assist small developments for growing and marketing, and the development of a coop arrangement between small growers.

Demonstration Site at Hillview Herb Farm – this site is to demonstrate key food crops and techniques for the local area, key growing times for different fruit and vegetables.

Purification and Sustainable Use of Water from Deep Aquifers – Apart from the disruption and use of surface streams, mining penetrates deep underground water sources. The water is usually highly mineralised, as in the water seeping from the massive heaps of elevated rock. In keeping with its intention to promote food production, The Gloucester Project will give attention to the purification of this mineralised water so that this otherwise waste can contribute to food production (The Gloucester Project 2009).

Energy Use – The Gloucester Project will give emphasis to helping community members reduce reliance on fossil fuels by

- Using less energy
- Researching the use of solar, wind, water, biomass and gas as sources of energy
- Local generation of electricity
- Conversion of farm and road engines

Recommendations:

Continue to work closely with HCCREMS on Greenhouse gas reduction projects that will benefit the community and council operations

Support community groups within our capacity to encourage and engage in projects that work to mitigate and adapt to climate change.

Develop annual energy expo in-conjunction with local and regional businesses



Below are the weather characteristics that create our climate. State, Pressure and Response is intrinsically linked to Climate Change and the Enhanced Greenhouse Effect.

Drought

Gloucester's producers can be seriously affected by drought. The Department of Primary Industries in NSW releases monthly drought maps. These maps are available on the web site and are prepared from information provided by the Rural Protection Boards around the state.

The last few years have seen Gloucester relatively drought free. Recent climate change information indicates a 12% reduction in rainfall in the winter months, which may potentially lead to increased drought occurrences during this time and increased falls in spring, may lead to reduced drought conditions during this time, depending on other external factors.

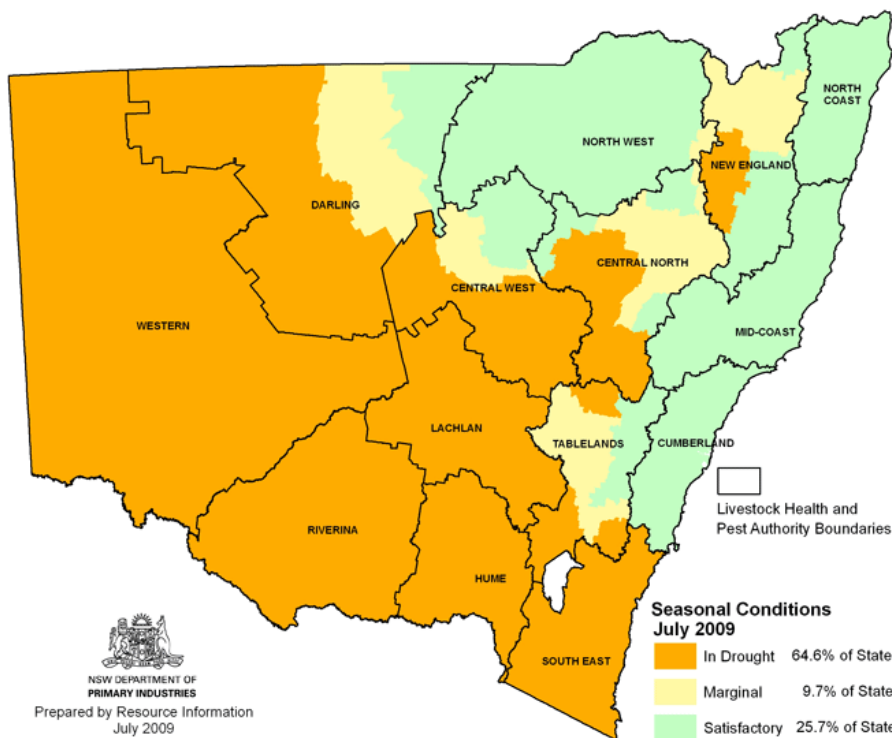


Figure 29 Example of the monthly Maps produced by DPI - July 2009



Table 9 Monthly Drought Declarations from July 2005 to June 2009

Month	Declaration	Month	Declaration
July 2005	Satisfactory	July 2007	Satisfactory
August 2005	Satisfactory	August 2007	Satisfactory
September 2005	Marginal	September 2007	Satisfactory
October 2005	Marginal	October 2007	Satisfactory/Marginal
November 2005	Satisfactory	November 2007	Satisfactory/Marginal
December 2005	Satisfactory	December 2007	Satisfactory
January 2006	Marginal	January 2008	Satisfactory
February 2006	Satisfactory	February 2008	Satisfactory
March 2006	Marginal	March 2008	Satisfactory
April 2006	Satisfactory	April 2008	Satisfactory
May 2006	Marginal	May 2008	Satisfactory
June 2006	Drought	June 2008	Satisfactory
July 2006	Drought	July 2008	Satisfactory
August 2006	Drought	August 2008	Satisfactory
September 2006	Drought	September 2008	Marginal
October 2006	Marginal	October 2008	Marginal
November 2006	Marginal	November 2008	Satisfactory
December 2006	Marginal	December 2008	Satisfactory
January 2007	Marginal	January 2009	Satisfactory
February 2007	Drought	February 2009	Marginal
March 2007	Marginal	March 2009	Satisfactory
April 2007	Marginal	April 2009	Satisfactory
May 2007	Marginal	May 2009	Satisfactory
June 2007	Satisfactory	June 2009	Satisfactory

Rainfall

Rainfall is influenced by terrain and the oceans and varies considerably between coastal and inland areas. The recent climate study undertaken by Hunter Councils and University of Newcastle analysed rainfall data between 1948 to present day to identify any significant trends. The findings were that there are no significant trends, due to the large inter-annual variability (Figure 30), however annually it is expected that winter will become drier and spring will be wetter, and relatively no change for summer and autumn. Gloucester is affected by persistent dry and wet spells that tend to occur in cycles (HCCREMS UofN 2008). Table 10 outlines these cycles.



Figure 30 Rainfall Trends for Gloucester over each Season

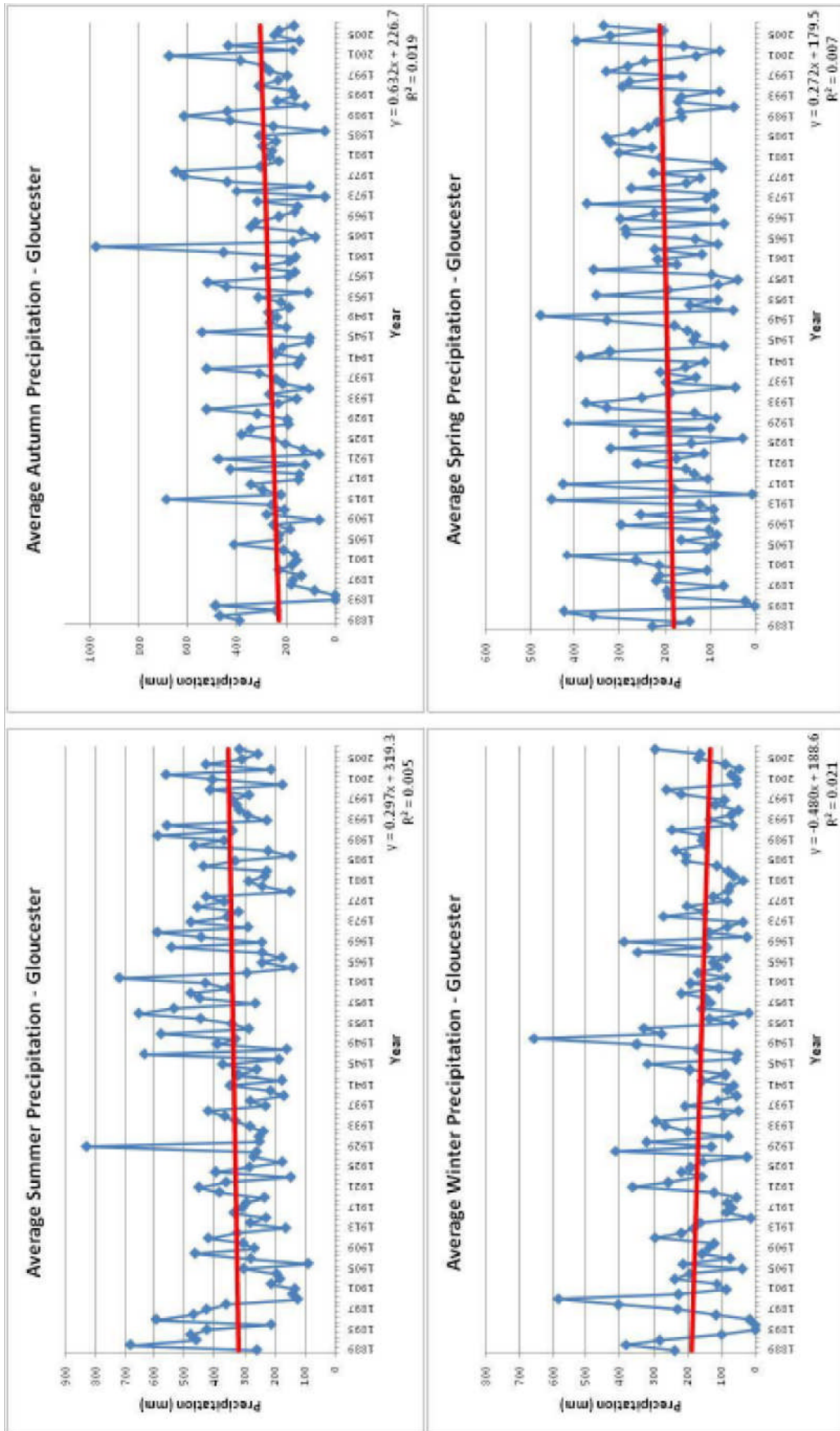




Table 10 – Wet Dry Cycles for Gloucester Shire

Year	Wet or Dry Cycle
1949-1963	Wet
1964-1974	Dry
1978-1984	Dry
1985-1990	Wet
1990-2006	Dry
1995-1998	Wet

The Bureau of Meteorology produces rainfall maps that can map annual to 3-year trends. The figures below give an indication of the rainfall distribution over NSW for the last 12 months and 2006-2009.

New South Wales Rainfall (mm) 1 July 2008 to 30 June 2009
 Product of the National Climate Centre

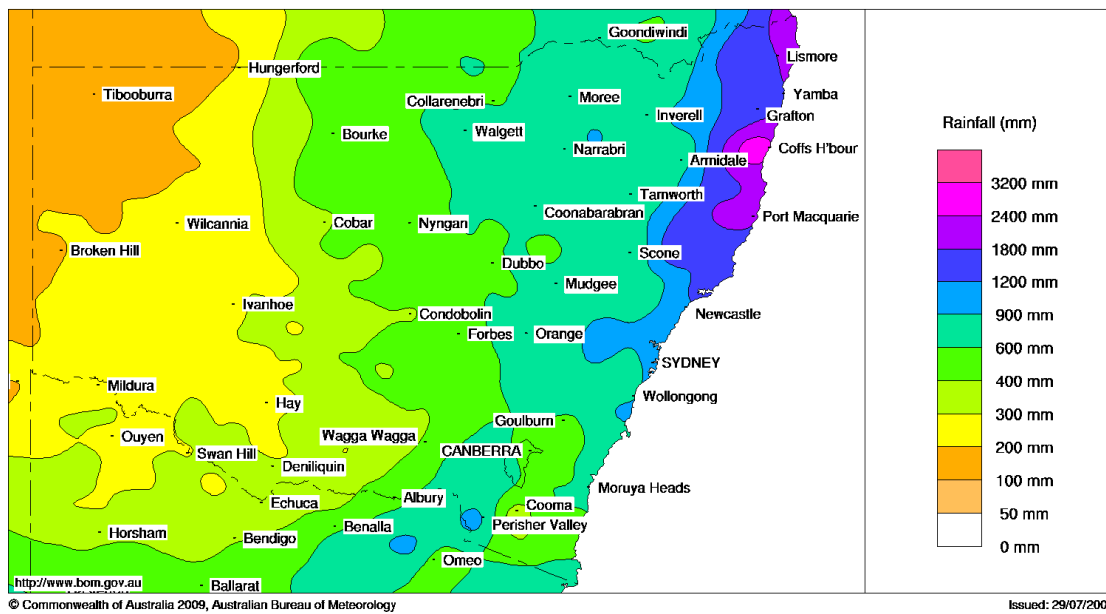


Figure 31 Rainfall Distribution over the 12 month period July 2008 to June 2009



New South Wales Rainfall (mm) 1 July 2006 to 30 June 2009
 Product of the National Climate Centre

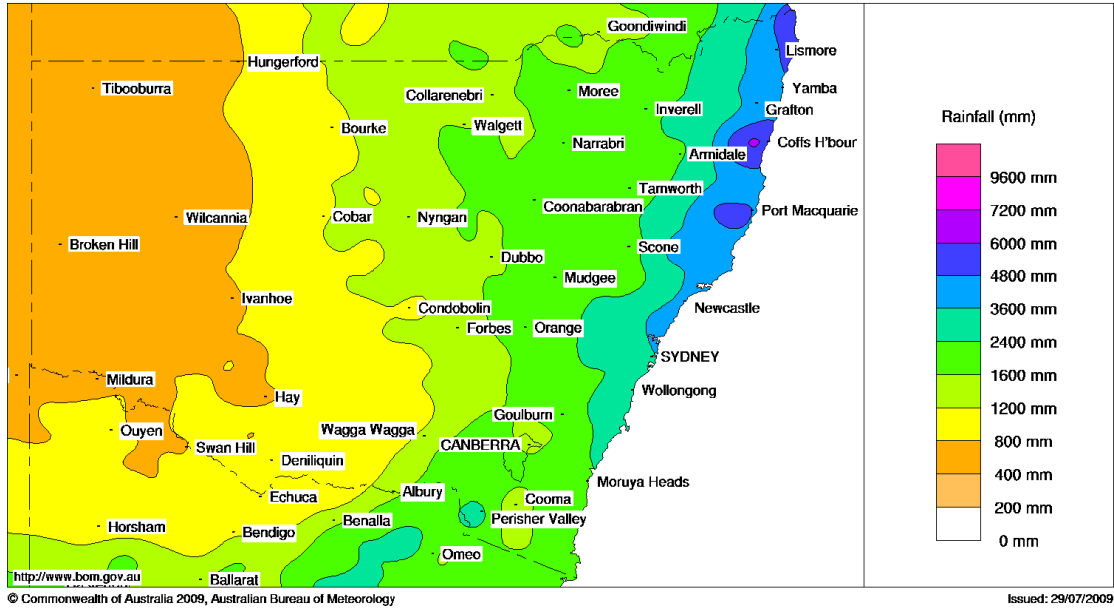


Figure 32 Rain Distribution for 3 years July 2006 – 2009

The rural fire service and Stratford Coal collect annual rainfall data. Council has collated that last six years worth of data to show the variability (Figure 33) that does occur in the Shire. This variability is confirmed by the Climate Study. The peak in February 2009 represents what is classified as an extreme event, where an excess of 50mm fell in one day. On 15th February Gloucester received 81.8mm (Stratford Coal weather Data)

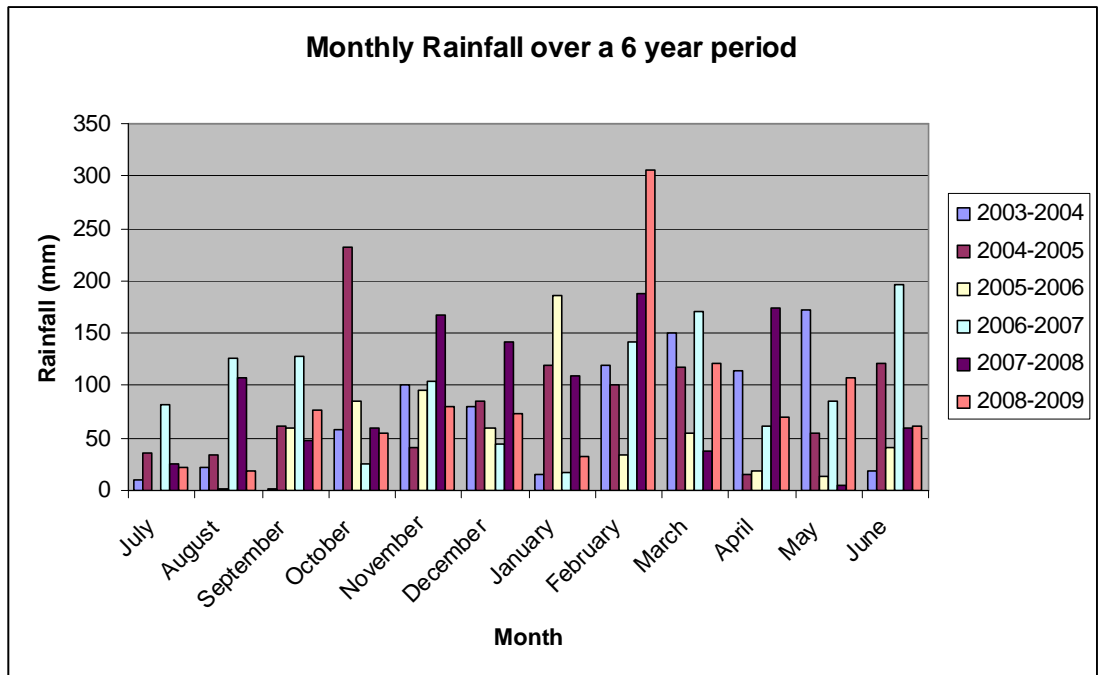


Figure 33 Rainfall Variability since 2003



Temperatures

There is no long term temperature data collection for Gloucester. Long term data for Taree is available however does not correctly reflect the trends of Gloucester. The recent Climate Study has identified trends for the region that Gloucester is a part of and this is detailed in the above section on Climate change. The report did show for the region that there is statistically a significant increase in maximum temperature for the region. The increase of approximately 0.03°C per annum equates to 1°C over the period from January 1970 to December 2007. This trend is consistent both seasonally and across the region; however stronger increases are evident in the coastal region (HCCREMS UofN 2008).

Rural Fire Service and Stratford Coal both collect annual temperature data for Gloucester and over time this will develop into an important data base for the climate history of the community.

The following figures represent the data collected over the past 6 years for both minimum and maximum temperatures

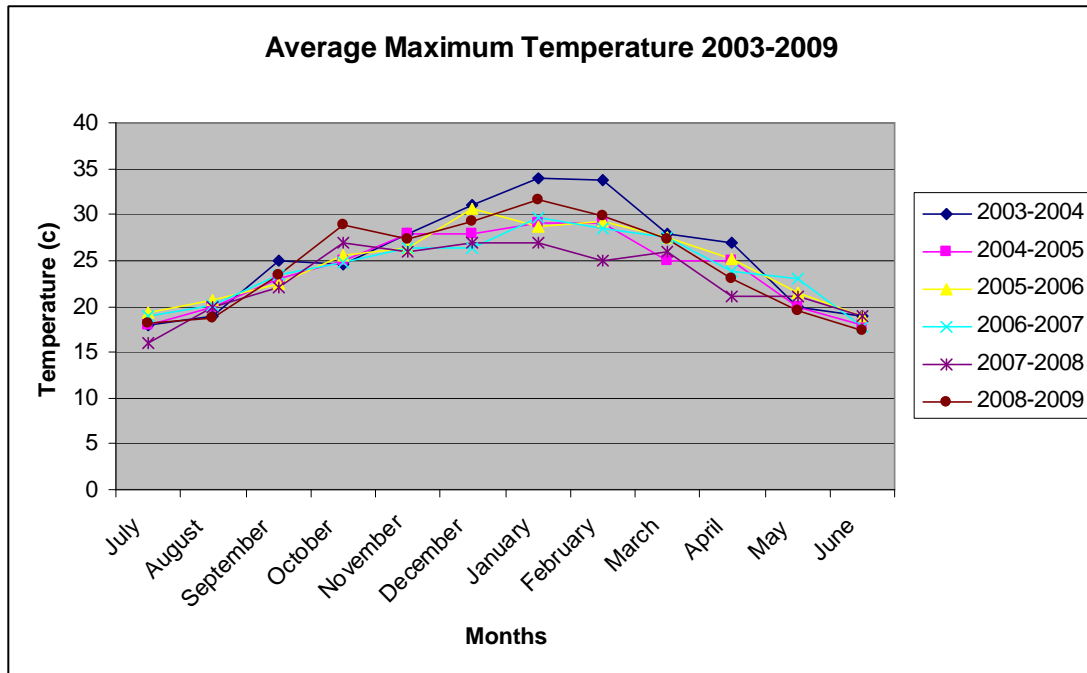


Figure 34 Average Maximum Temperatures between 2003 -2009

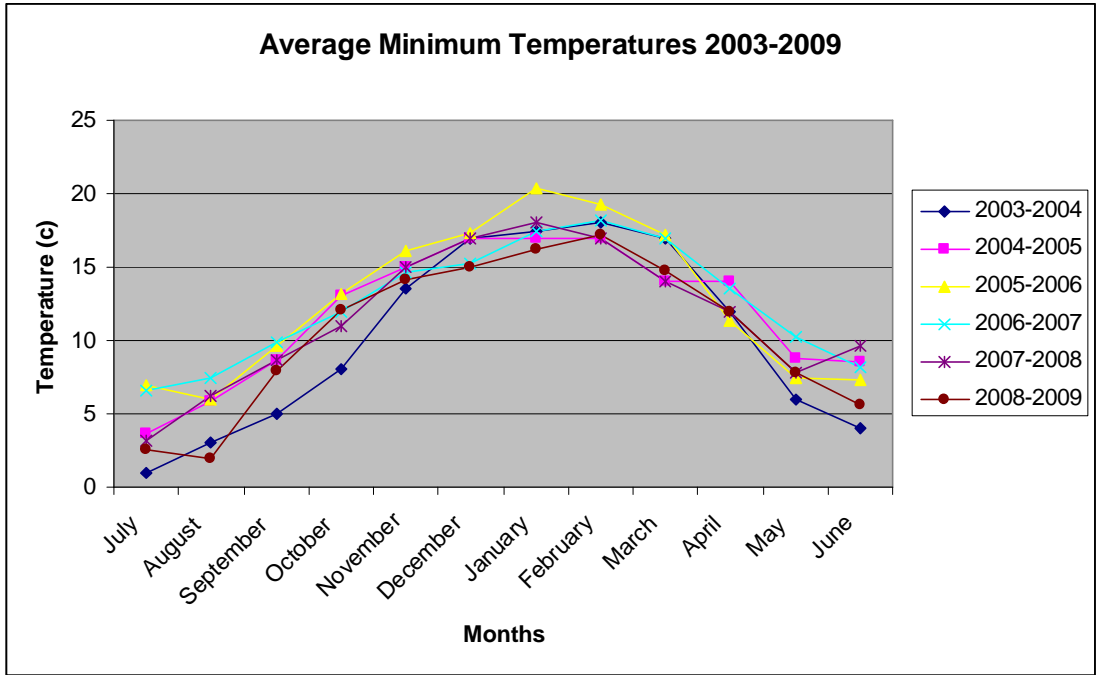


Figure 35 Average Minimum Temperatures between 2003 -2009

Wind

Gloucester has little historical wind data specifically for the area and relies on data collected in Taree. Stratford Coal now also collects wind data as part of their monitoring requirements of their coal operations.

The Climate study undertaken by Hunter Councils and University of Newcastle has found that the wind speed across the region shows a slight decrease of 2.4km/hr for the period from January 1970 to December 2007.

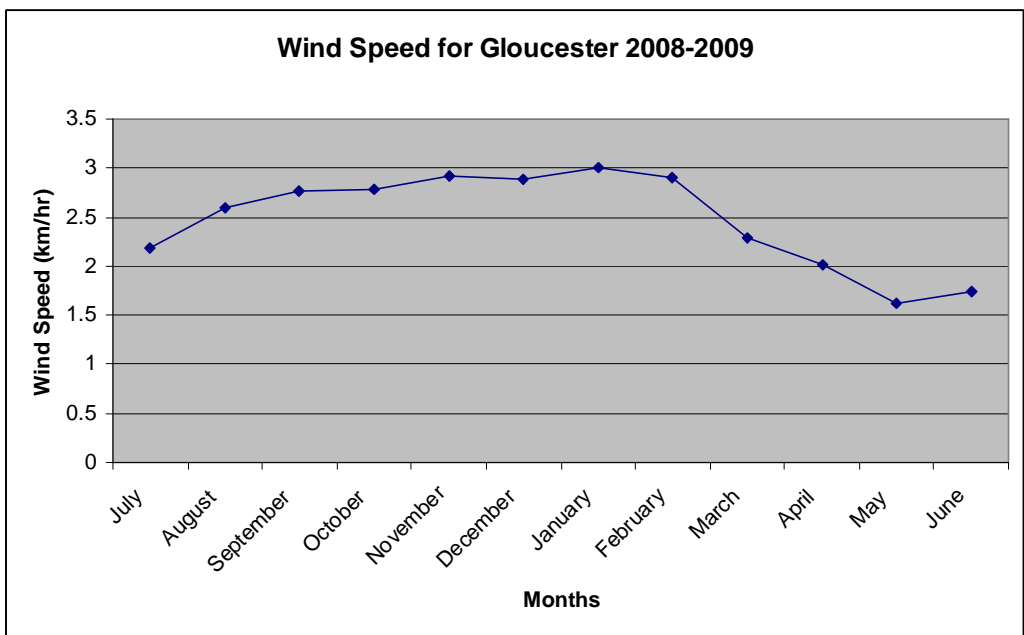


Figure 36 Wind Speed as recorded by Stratford Coal 2008-2009



Air Quality

Air Quality monitoring is not undertaken in the Gloucester Shire (with the exception of Stratford Coal). However Gloucester's air quality is considered to be of a high quality.

Activities that can contribute to reducing air quality of Gloucester include:

Use of wood heaters during winter

Bushfires

Prescribed/permitted burns and pasture burns

Agricultural activities

Motor Vehicle Emissions

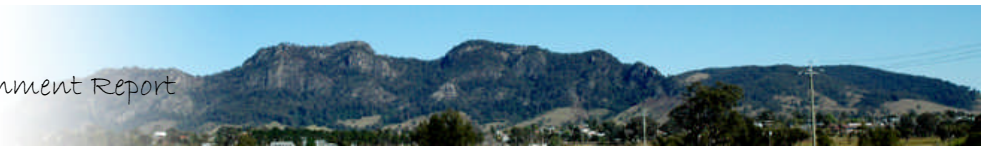
Operations at Stratford Coal Mine and fires within the coal reserve

Stratford Coal has been well under their air quality requirement and details on the monitoring are under the mineral exploration section.

Recommendations:

Share Climate Change information with the Department of Primary Industries and local farmers to enable action in response to expected changes in drought patterns

Support DPI and CMA and local farmers on projects that work towards increasing their resistance to drought conditions



6. Water

State: Good
Pressure: Moderate
Response: Fair

Gloucester Fresh Water Ecosystems

Gloucester's fresh water ecosystems form part of the Manning River Catchment. The main rivers of Gloucester are:

- 1 **The Gloucester River.** This has a significant catchment; rising in the Gloucester Tops to the south west of Gloucester with good all season flows.
- 2 **The Barrington River.** This rises in the Barrington Tops west of Gloucester and is a major tributary of the Manning River. It has a permanent flow and is the largest river in the shire.
- 3 **The Avon River.** This river rises to the south west of Gloucester and joins the Gloucester River north of Gloucester.

The HCRMA funded four small projects (to a total of \$39 000) which delivered weed control, off-stream watering, riparian fencing, willow removal, in-stream works and native vegetation establishment. These works will have a significant positive effect on the fresh water ecosystems that they form a part of.

Fish-passage ways

Gloucester has 8 fish friendly passage ways. NSW DPI (Fisheries) and the CMA provided additional funding for on-ground works to improve fish passage further leading to several of these passageways being improved and 1 new one being installed.

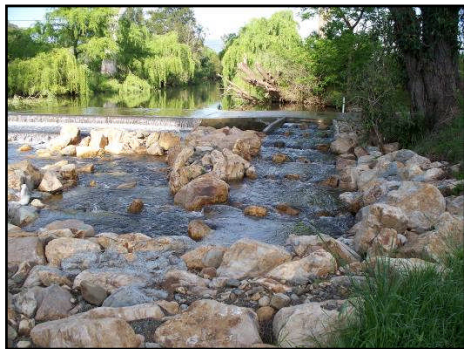
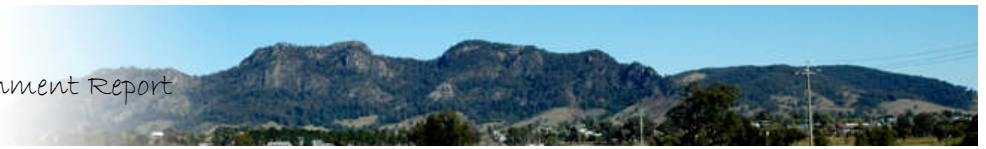


Figure 37 Fishway at Higgins Crossing

Water Watch

The Gloucester Environment Group and Stratford Public School carries out quarterly water testing on several sites within the Gloucester Shire under the Water Watch banner, these sites are located at the Upper Avon River, Avon River, and Gloucester River. The results of the groups work are available on the Water Watch web site, and indicate that the rivers are in relatively good condition. The Avon River has levels of turbidity that are higher than ideal and fall in the 1-30 range that can potentially affect the health of the stream. This river does have some severe erosion areas and limited riparian vegetation. The Gloucester River on the other hand has very little turbidity and all measurements taken indicate a very healthy system. Since commencing



these tests in January 2009 the group has decided to work in with other local groups including Avon River Landcare to extend the testing areas.

Recommendations:

Continue to support local groups and their water monitoring activities.

Council set up complimentary water sites at local rivers to support Gloucester Environment Group's current sites.

Water Supply

State: Good

Pressure: Fair

Response: Fair

Residents of Gloucester Shire are serviced by either the Gloucester Water Supply, Barrington Water Supply or rely fully on their own water supply (rainwater tanks or river access). Currently the NSW Government is developing larger water authorities for the state. This will see Gloucester's water supply being handed over to one of these larger authorities for management. Council is currently reviewing this action.

Rainwater Tanks

Up to 40% of a household's water use can be replaced with rainwater. By using rainwater every day to flush toilets and wash clothes, you will save more drinking water and make room in the tank to collect more water when it rains.

Department of Environment, Climate Change and Water have an established Climate Change Fund to help business, households, schools and government save energy and water.

Gloucester Shire Council promotes this rebate system and residents have taken good advantage of the rebates available with 78 tanks being installed and a rebate value of \$54 600.

Water Use

The Gloucester supply is treated, filtered (including pH correction), chlorination and fluoridation, then pumped approximately 1.5km to the township. The system services approximately 2700 people.

Council also operates a water scheme in the village of Barrington which was constructed in 1969. This scheme obtains water directly from the Barrington River and chlorinates the supply only. There is no filtration or fluoridation Council disinfects drinking water with chlorine to kill micro-organisms which could cause disease.

The fluoridation and chlorine is added in carefully controlled amounts and their levels are monitored to ensure they meet health guidelines.

Council regularly monitors drinking water quality at Gloucester and Barrington. The main bacterium that is monitored is E. coli that indicates possible faecal contamination and possible presence of enteric pathogens. The acceptable level of total coli forms is zero per 100ml as per the NSW Department of Health recommendations.

Barrington water supply is the most likely source to fail the E. coli test. Residents are placed on a "boil water" alert until the levels return back to normal. Barrington water tends to fail quality tests during extended dry periods and after flooding.



Water quality results showed that Barrington water failed 12 times in the last 12 months, most of these failures were due to high turbidity e-coli levels.

Currently Council is investigating extending the Gloucester water service to Barrington as part of the sewer and water plans.

Recommendations

Operate water supply in accordance with Water Supply Strategic Business Plan including achievement of water quality standards

Enter into negotiations with NSW Government and Regional Water/sewer supply authority to provide a high standard of service to the community.

Sewerage Services

State: Fair

Pressure: High

Response: Good

Pressure Sewer

Pressure sewer system was first introduced in the new subdivision areas of Gloucester with the first section being installed at Meadows Estate. Since then the system has also been installed as part of the Thunderbolts and Avon River Estate on Jacks Rd. It is proposed that the sewer and water will be extended to Barrington Village. This proposal will remove approximately 70 properties from individual septic systems if it goes ahead.

On-site sewage systems

Council undertakes routine inspections on on-site sewerage management systems throughout the Shire. The frequency of the inspections depends on the risk category of the system as outlined below:

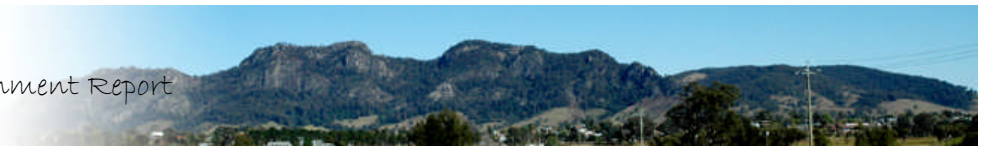
- High risk systems – every two (2) years
- Medium risk systems – every four (4) years
- Low risk systems – every six (6) years

Inspections are also carried out prior to any on-site sewerage management system being installed. In 2007 Council adopted the On-site Sewerage Management System 2007 which now requires every new application to be accompanied by a report carried out by geo technical engineer to ensure the suitability of the soil.

Gloucester Shire Council has an increasing number of Aerated Waste Water Treatment Systems throughout the Shire. As a condition of the approval the owners are required to submit a service report to Council on a quarterly basis to ensure the system is operating effectively.

Dairy Effluent Management

Dairy Effluent is managed by Department Primary Industries. Farmers work closely with Officers to ensure that effluent does not affect rivers and stream catchments by identifying what system should go in to achieve the best results. Farmers are



assisted by the Dairy Effluent Guidelines that have been developed by DPI. These guidelines are there to provide advice but are not legally binding.

In the near future the Dairy Advancement Group for the region (which includes Greater Taree, Great Lakes, Hastings and Gloucester) are planning on working with the Councils to develop uniformity across the region in regard to managing farming and effluent issues.

Recommendations

Minimise the impact on the environment
Operate in accordance with the Sewage Strategic Business Plan

Stormwater Management

State: Good

Pressure: Moderate

Response: Fair

Gloucester Shire Council adopted a Stormwater Management Plan in 2001. The aim of this plan is 'to minimise future stormwater impacts on the environment and to provide a framework for mitigating existing stormwater impacts on the environment with the overall objective of helping to achieve Council's commitment to ecologically sustainable development'.



Gross Pollutant Traps

There is an existing Gross Pollutant Trap installed in the Billabong and is cleaned out following rain periods and storm events. This trap collects gross pollutants like leaf litter, plastic bottles, cans and other general rubbish, and has successfully prevented this waste from entering the Billabong via this stormwater exit point. Investigations are about to commence on management of other stormwater points that do not have the room to accommodate such systems.

Figure 38 Gross Pollutant Trap at Billabong Park

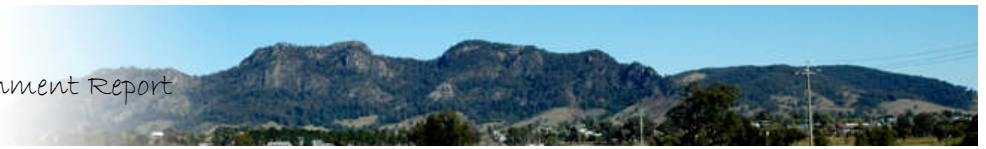
Stormwater Catchment areas and maps

Overall most of the Gloucester area forms part of the Manning River Catchment. Catchment maps were created for the town area so people can identify which catchment their stormwater goes to from their street. The town area drains into either the Billabong catchment or the Avon River Catchment. External funding enabled the installation of signage was on stormwater drains - "This Drains to the Billabong" in an effort to show residents where their waste went if it was thrown in the stormwater drain.

Village Catchment areas:

Barrington Village drains into the Barrington River

Stratford Village flows into the Avon River system



Craven predominately flows via various drainage lines to the Avon River. However the south east section of the town is drained by Coal Creek, a tributary of the Wards River within the Karuah River sub catchment of the Karuah River/Great Lakes catchment.

Copeland flows into Copeland Creek, a tributary of the Barrington River
Bundook flows into Bakers Creek and Belbora Creeks, tributaries of the Manning River downstream of Gloucester in the Manning River Catchment.

Grease Traps

Management of Grease Traps has been a priority with local businesses undertaking up-grades for their grease traps to improve collection of pollutants that discharge to the sewer. These grease traps are inspected regularly to meet environmental requirements.

Stormwater Quality activities

Water Watch recently held a water monitoring day with Council, the Gloucester Environment Group and interested community members. Following this event Council will be setting up regular water monitoring of the Billabong to identify the quality of the water and fluctuations between dry and wet weather. Over time this data will be invaluable to the management of the area.



Figure 39 Water Watch Training Session at Billabong Creek

Recommendations:

- Commence monthly water quality monitoring of the Billabong to assist with stormwater management
- Implement Stormwater Management Plan
- Ensure inlets and outlets of the pipes are clean and free of blockages



Floodplain Management

State: Good

Pressure: High

Response: Good

Gloucester Shire Council has a Floodplain Management plan that identifies areas that are prone to flooding. The building of residential properties is prohibited in these areas. The plan contains maps of the Shire (an example is pictured below) indicating where the flood prone areas are.

If a property is flood prone this aspect is identified as part of the preparation of Section 149 certificates that are done prior to purchasing a property. The only areas identified are within and around the Gloucester Township; however flooding does occur in other areas of the Shire. Many roads across the shire are subject to river and creek rises in rain events and properties along streams are considered to be flood affected.



Figure 40 Flood prone areas of the Gloucester Township



7. Biodiversity

Biodiversity is the term used to describe the variety of organisms (plants, animal, fungi and microbe), the genes they contain and the ecosystems they form. There are numerous and complex relationships present between living entities and the environment. These relationships provide the interconnecting web or fabric, which supports life.

Biodiversity has many pressures placed upon it by human populations and development. These pressures can be direct or indirect. In Gloucester significant losses in plant and animal communities, species and populations have occurred over the years.

In Gloucester Shire the main factors that contribute to biodiversity loss include:

- Habitat destruction associated with land clearing
- Weed invasion and habitat alteration
- Pest and domestic animal predation and the associated impacts
- Poor land management practices and land degradation

Threatened Species

State: Good

Pressure: Moderate

Response: Fair

Threatened Species are protected through legislation at both national and state levels.

The *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act) is the Australian Government's central piece of environmental legislation. It provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places.

In the NSW Hunter/Central Rivers region, that Gloucester Shire forms a part of; there are 63 species of flora and fauna listed under the EPBC Act 1999. Not all these species occur in the Gloucester Shire.

The NSW *Threatened Species Conservation Act 1995* identifies and protects native plants and animals in danger of becoming extinct. The Act also provides for species recovery and management strategies, threat abatement plans for the management of key threatening processes, designation of areas critical habitat for threatened species, populations and ecological communities, and the consideration of threatened species in development control and environmental planning (NPWS 2000). More than 80 species of native plants and animals have recently become extinct in NSW and around 1000 more are threatened with extinction.

Gloucester Shire is home to 57 species of flora and fauna that are listed under the *Threatened Species Conservation Act 1995*.



Gloucester Shire Council has a Grey Crowned Babbler Retention Plan. The Grey Crowned Babbler is listed as vulnerable under the Act, and resides within the Gloucester urban and industrial areas. Council has dedicated 2 areas as Babbler reserves and also introduced a cat free zone around the main reserve area as cats is one of the main predators of the species survival.



Gloucester Shire Council is also working closely with HCCREMS on the development of the Roadside Vegetation Management Plans and Policies that will assist in protecting roadside areas that are utilised by threatened species.

Appendix 1 lists the species under *Threatened Species Conservation Act 1995* (TSC Act) and *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) for the Gloucester Shire.

Figure 41 Grey Crowned Babbler at the Babbler reserve (Cemetery Road)

Recommendations:

Identify significant habitat areas and develop procedures for maintenance of the vegetation (concentrating on roadside areas)
Seek funding to provide protection and education for the designated Grey Crowned Babbler Reserve areas.

Protected Lands

State: Good

Pressure: low

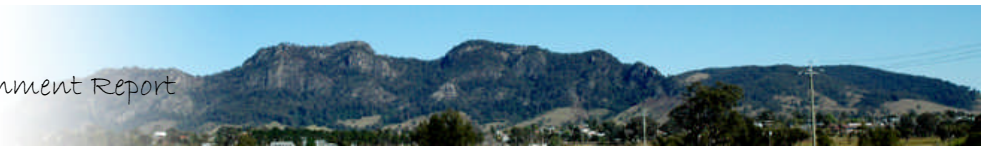
Response: Good

Protecting the environment is a great challenge that faces the world today. One mechanism in place is to protect areas of national and global significance by nominating them as National Parks, Conservation Areas, World Heritage listing and Nature Reserves.

National parks are areas of land protected for their unspoiled landscapes, outstanding or representative ecosystems, native plant and animal species and places of natural or cultural significance. In addition to their role in conservation, national parks provide opportunities for public appreciation and enjoyment, sustainable visitor use and scientific research.

Figure 42 Swamps at Pol Blue – Barrington Tops National Park





Nature reserves are areas of land in a predominantly untouched, natural condition which has high conservation value. Their primary purpose is to protect and conserve their outstanding, unique or representative ecosystems, native plant and animal species or natural phenomena. Scientific research is an important objective in nature reserves, as it increases our understanding of their values and provides the information needed to conserve them. Nature reserves have few visitor facilities, such as picnic areas, lookouts and walking tracks, and visitation is carefully managed to minimise disturbance.

State Conservation Areas are lands reserved to protect and conserve significant or representative ecosystems, landforms, natural phenomena or places of cultural significance, while providing opportunities for sustainable visitation, enjoyment, use of buildings and research. The principal difference between the management, objectives and principles of national parks and state conservation areas is that mineral and petroleum exploration and mining may be permitted in state conservation areas.

Wilderness areas are places for nature where people are only an occasional, and respectful, visitor. They are managed so that native plant and animal communities are disturbed as little as possible. Horses and vehicles are not permitted in these places, and bicycles are only allowed on a small number of approved management trails.

The globally recognised **World Heritage** List contains some of the most important examples of natural and cultural heritage in the world. Protected by international convention, they are part of a group of more than 800 treasures that include the Great Barrier Reef, Mount Everest, the pyramids of Egypt and the Great Wall of China.

Within the Gloucester local government area we are lucky enough to have examples of each of these protected lands.

There are private options for conservation on private lands; Gloucester currently has no private land listings.

Table 11 lists the protected area types and size within the Gloucester local government area.



Table 11 Protected area reserve types for Gloucester Shire

RESERVE TYPE	RESERVE NAME	TOTAL AREA in Gloucester LGA (hectares)
National Park	Barakee NP	323
<i>Includes parts listed for Wilderness and World Heritage</i>	Barrington Tops NP	30826
	Woko NP	8225.7
	Curracabundi NP	10763.8
NP TOTAL		50138.5
Nature Reserve	Berrico NR	893
	Bretti NR	2900
	Camels Hump NR	513.7
	Mernot NR	320
	Monkeycot NR	1606.6
	The Glen NR	2723.1
	Watchimbark NR	749.8
NR TOTAL		9706.2
State Conservation Area	Barrington Tops SCA	1518.5
	Coneac SCA	798.2
	Copeland Tops SCA	2166.8
	Curracabundi SCA	729.2
SCA TOTAL		5212.7
TOTAL Gazetted		65057.4

Roadside Areas of significance

State: Good
Pressure: Moderate
Response: Good

Roadside environments area defined by the NSW Roadside Environment Committee as the area of land '*adjacent to the road and extending to a maximum distance of 20m from the edge of the road surface but specifically excluding areas of private land within this proximity*'. However, in some cases the distance from road edge to the nearest private property boundary may extend up to 100 metres (Environment Division of Hunter Councils Inc, 2007).



Figure 43 McKinleys Lane – an example of roadside environments

Roadside environments criss-cross Australia in their connection of cities, towns and rural villages. However these reserves are not only corridors of land that enable the movement of people, goods and livestock, they also conserve remnant vegetation, contain a range of cultural and heritage values and provide a diverse range of economic, social and environmental services. More specifically these values and services include:

1. **Ecological values** including habitat for threatened and other fauna species, retention of Endangered Ecological Communities (EEC's), wildlife corridors, a source of native seed for rehabilitation programs, protecting waterways and acting as buffer zones from strong wind, dust and noise;
2. **Social values** such as conserving Aboriginal and non-Aboriginal heritage, creating visual amenity and providing community recreation zones; and
3. **Economic values** such as providing a refuge for livestock in times of drought, reducing wind and evaporation of crops and pastures.

Council has been working with Environment Division of Hunter Councils for several years on the development of tools Roadside Vegetation management. The final stages (ground truthing) of mapping and prioritising significant sites is commencing late 2009, and includes the finalisation of guidelines that will have field guide information that will assist in roadside significance identification and management tools to enhance Council's knowledge and ability to maintain these roadside environments. This project is of particular significance for Gloucester and the Grey-Crowned Babbler that frequents sections of the Bucketts Way South on the approach into the Gloucester Township.

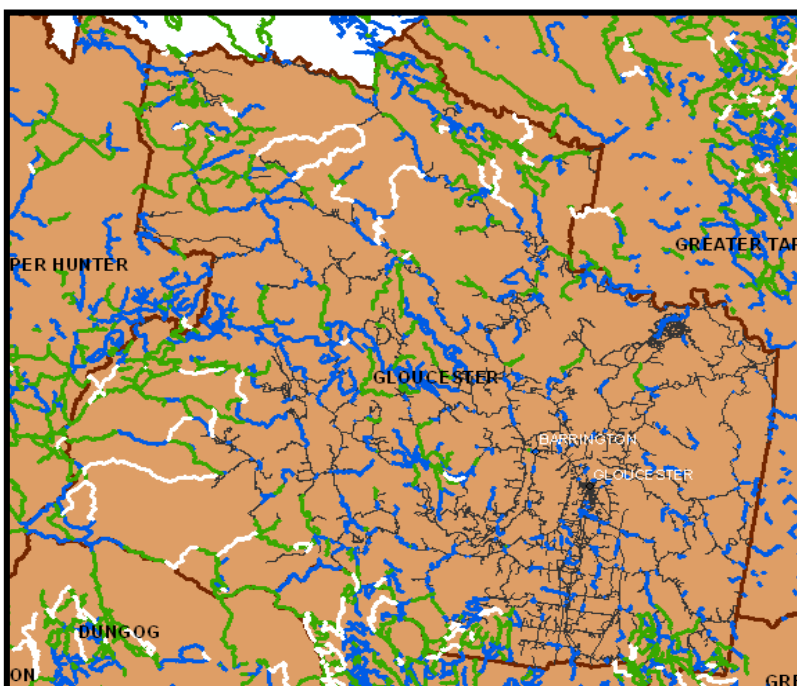
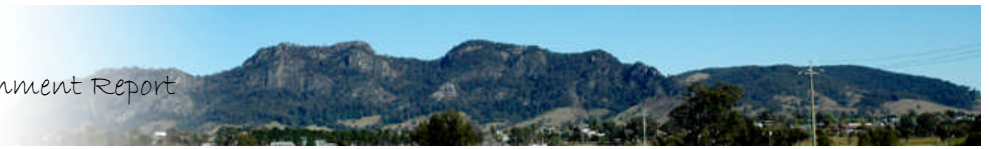


Figure 44 Roadside vegetation significance identified through desktop assessment



Mapping process

Each roadside environment was assessed against 10 different criteria.

White lines – are sites that met 5-10 of the criteria

Green lines – are sites that met 3-4 criteria

Blue lines – are sites that met 2 criteria

Recommendations:

Continue to work with Hunter Councils to identify significant native habitat areas within the Shire
Develop procedures for Council staff for roadside maintenance of vegetation

Land Clearing

State: Fair

Pressure: Medium

Response: Fair

In 2005, the NSW Government introduced the Native Vegetation Act 2003 (NV Act) to end broad-scale land clearing across the state. Catchment Management Authority's play a key role in the implementation of the NV Act and its regulation, and are responsible for assessing and approving clearing proposals through the Property Vegetation Plan (PVP) or Development consent process.

Clearing is defined as cutting down, felling, thinning, logging, removing, killing, destroying, poisoning, and ringbarking, uprooting or burning native vegetation.

Clearing therefore includes, for example:

- any type of ploughing that kills native groundcover
- the under-scrubbing of native forests
- herbicide spray drift that kills or destroys native vegetation, or
- thinning of native woodlands.

Under the NV Act, all clearing requires approval through either a Property Vegetation Plan (PVP) or a Development Consent, unless it is: (i) on land that is excluded from the NV Act; (ii) categorised as excluded clearing; or (iii) a permitted clearing activity.

Activities such as pruning, lopping or slashing of native groundcover, that do not kill the native vegetation, are not considered clearing. Burning that does not kill native vegetation or substantially reduce the composition and proportion of native species may not be considered as clearing, check with your local Catchment Management Authority (CMA).

Except for the commercial collection of firewood, the removal of dead timber is not considered clearing under the NV Act.

Since the introduction of the legislation land clearing for NSW has reduced. Between 2006 and 2008 the number of hectares approved for clearing has fallen by 1000 hectares from 3060ha to 2060ha (DECC 2009).

The legislation is currently under review with a Discussion Paper completed in July and submissions to the Discussion Paper close late September 2009.



HCRCMA provided funding assistance (to a total of \$598 500) to private landholders to conserve 675ha of regionally significant terrestrial native vegetation. These properties have Property Vegetation Plans over them providing conservation in perpetuity.

Recommendations

Identify areas for management in cooperation with Catchment Management Authority

Weeds

State: Fair

Pressure: High

Response: Good

Weeds are problem plants that invade natural ecosystems, reduce agricultural production and/or threaten other species including both plants and animals. Weeds tend to be introduced species but can also be native species growing outside their natural range.

Weeds pose one of the most significant threats to biodiversity after land clearing and habitat destruction.

Weeds compete with native plants for nutrients, sunlight, water and space. Some weeds can smother and kill native plants, prevent natural regeneration, change the structure and function of an environment. This in turn affects the native animals that depend on native plants and certain habitat types for their survival (food and shelter).

Weeds of National Significance

Under the National Weeds Strategy, 20 introduced plants (Appendix 3) have been identified as Weeds of National Significance (WoNS). A national management strategy has been published for all of these species. The selection of the weeds for this list was identified through the following criteria:

- Invasiveness
- Impacts
- Potential for Spread
- Socioeconomic and environmental values

Noxious Weeds

A noxious weed is a weed that is declared noxious by the Minister for Primary Industries in accordance with the *Noxious Weeds Act 1993*. Weeds declared must be controlled by law. The level of control is determined by the category that the weed is listed under.

There are five different categories, which are determined by the detrimental effect a plant has on the environment and its ability to cause severe economic loss to agriculture. Table outlines the details of each category.



Table 12 Control classes of noxious weeds

Control class	Weed type	Example control requirements
Class 1	Plants that pose a potentially serious threat to primary production or the environment and are not present in the State or are present only to a limited extent.	The plant must be eradicated from the land and the land must be kept free of the plant. The weeds are also "notifiable" and a range of restrictions on their sale and movement exist.
Class 2	Plants that pose a potentially serious threat to primary production or the environment of a region to which the order applies and are not present in the region or are present only to a limited extent.	The plant must be eradicated from the land and the land must be kept free of the plant. The weeds are also "notifiable" and a range of restrictions on their sale and movement exist.
Class 3	Plants that pose a potentially serious threat to primary production or the environment of a region to which the order applies, are not widely distributed in the area and are likely to spread in the area or to another area.	The plant must be fully and continuously suppressed and destroyed.*
Class 4	Plants that pose a potentially serious threat to primary production, the environment or human health, are widely distributed in an area to which the order applies and are likely to spread in the area or to another area.	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority.*
Class 5	Plants that is likely, by their sale or the sale of their seeds or movement within the State or an area of the State, to spread in the State or outside the State.	There are no requirements to control existing plants of Class 5 weeds. However, the weeds are "notifiable" and a range of restrictions on their sale and movement exists.

NOTE: All Class 1, 2 and 5 weeds are prohibited from sale in NSW.

Taken from www.dpi.nsw.gov.au/agriculture/pests-weeds/weeds/definition

A weed will only be declared noxious if there are reasonable and enforceable means of control. Weeds are declared noxious on local and state levels. Weeds may be added or deleted from declaration and categories may be changed at any time (Great Lakes Council 2009).

Environmental Weeds

Environmental weeds do not naturally occur in a specific area or ecosystem and that are invasive and often detrimental to the ecosystem they invade. 65% of environmental weeds originated in and have escaped from home gardens (Great Lakes Council 2009). These weeds tend to grow rapidly, survive extreme conditions, and reduce biodiversity, change soil chemicals and increase erosion.

Not all environmental weeds are declared noxious, regardless of the severe threat they pose to natural systems.



Council's Inspection Program

Council is bound by legislation to manage declared weeds, and in response to this responsibility developed the Noxious Weed Policy 2006 and Pesticide Use Notification Plan 2006. These policies are in place to ensure that weeds are managed in accordance with the legislation and to assist in notifying the public of any pesticide spraying that is being undertaken in public area that are owned or controlled by public authorities.

Council also implements the Regional Weeds Strategy 2008-2012 (developed by Mid North Coast Weed Advisory Committee). This strategy provides landholders and land managers with a set of standards and guidelines for implementing effective and coordinated weeds control programs. Priority is also given to new incursion surveillance and education and awareness programs.

This strategy is aligned to the NSW State Strategies & Hunter/Central Rivers and Northern Rivers Catchment Action Plans.

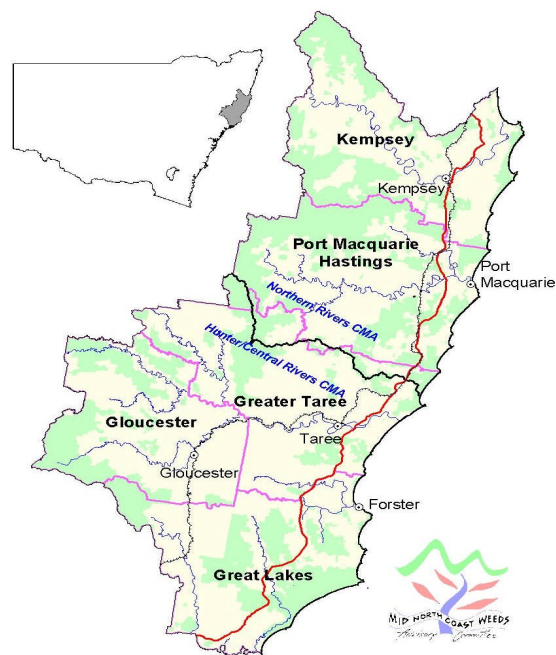
Council's annual inspection program focuses on certain catchments each year. The 2008/2009 annual program focused on the Barrington River Catchment and Barnard River Catchments. Council notifies all property owners by mail of their requirements under the Noxious Weeds Act before the property inspections are undertaken. In the 2008/2009 year Council undertook 427 inspections.

Mid North Coast Weed Advisory Committee

Gloucester Shire Council is an active member of the Mid North Coast Weeds Advisory Committee. Meetings for the committee are quarterly and Council is represented by a Councillor and the Weed Inspector. Council's Weed Inspector also attends monthly meetings with the committee. Other councils within the committee include Port Macquarie-Hastings, Great Lakes, Kempsey and Greater Taree. The committee was formed in 1997 to provide a cooperative and coordinated approach to weed control and management.

Appendix 2 lists the weeds identified in the Gloucester Shire, and what category they fall into.

Figure 45 Mid North Coast Weed Advisory Committee Area





Teaming up to tackle a prickly pest – CMA and Weeds Advisory Committee

With seed pods of up to 20 cm containing as many as 30 seeds each, Honey Locust has spread rapidly in dense thickets along watercourses on the central coast, western slopes and tablelands of northern NSW and in south eastern Queensland. The tough spines (as pictured) of the honey locust tree are creating a formidable barrier along a number of waterways in the Gloucester area, but the Mid North Coast Weeds Advisory Committee is fighting back.



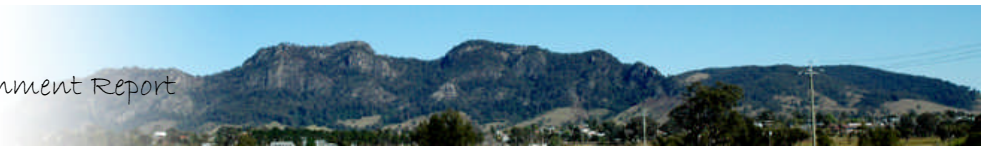
With support from the CMA and funding from the Australian Government, the committee is working to control honey locust infestations along Waukivory Creek and the Gloucester River as part of a larger partnership project with local councils targeting riparian weeds in the Manning, Great Lakes and Gloucester catchments.

Chairman of the Mid North Coast Weeds Advisory Committee Wayne Deer believes the project will have far-reaching benefits, not only environmental but also social and economic through the training and employment of local Aboriginal people, who will carry out the majority of the work.

Other weeds targeted as part of the project will be blue periwinkle along the Upper Bowman River; bridal creeper along Gloucester River and Copeland Creek; cockspur coral tree along the Manning River and its tributaries; and mysore thorn and black locust along the Karuah River and Port Stephens catchments.

Recommendations:

- Continue to undertake the Council's Inspection Program
- Under take community education on weeds, their control and management
- Map weed infestations across the Shire and make this information publicly available.
- Identify areas of co-operative support with Catchment Management Authority.



8. Heritage

Aboriginal Heritage

State: Good

Pressure: Low

Response: Good

Aboriginal people have occupied the NSW landscape for more than 42 000 years. Evidence and important cultural meanings relating to this occupation are present throughout the landscape. It also lives in the memories, stories and associations of Aboriginal people. Aboriginal cultural heritage provides essential links between past and present – it's an essential part of Aboriginal people's cultural identity, connection and sense of belonging to their land/Country (DECC 2009).

Aboriginal heritage is protected under the National Parks and Wildlife Act 1974. The act defines a relic as a deposit, object or material evidence relating to indigenous and non-European habitation of the area that comprises New South Wales. It is illegal to disturb, damage, deface or destroy a relic without the prior written consent of the Director of the National Parks and Wildlife.

The Gloucester area was originally inhabited by the Worimi People. Their native language was Kattang. The National Parks and Wildlife Service have a record of sites in the Gloucester Local Government area. This list is not exhaustive as the occupation of the area was extensive, and there would be many unrecorded sites and artefacts throughout the Shire.

Members of the local indigenous community work hard to protect and enhance the indigenous culture in the Gloucester region. This work includes working closely with AGL and Stratford Coal in relation to managing new finds as works are undertaken by these companies, and celebrating NAIDOC Day each year within the local schools and the general community.

European Heritage

State: Fair

Pressure: Low

Response: Fair

Heritage protection

The heritage provisions for Gloucester Shire prevent uncontrolled demolition, alterations and changes to the fabric of heritage items and buildings in the heritage conservation area. All such works therefore require development consent, and assessment of the proposal is made to ensure the works are consistent with the heritage provisions.

The Gloucester Local Environmental Plan 2000 (hereafter referred to as LEP 2000) contains several clauses relating the protection of local heritage items (see Part 4 – Heritage Provisions). In addition to listings of items of heritage significance (Schedule five), The LEP 2000 also lists the main business district of the Gloucester township as a Heritage Conservation Area. The provisions include a series of aims



that must be considered when assessing development applications relating to heritage items. This part also details the types of development of heritage items (and buildings in the Heritage Conservation Area) which require development consent. The details are listed in Appendix 5

Heritage listings for Gloucester

The LEP 2000, in schedule 5 lists all heritage protected buildings. This schedule is included in Appendix 5

Cultural Heritage

State: Good
Pressure: High
Response: Fair

Gloucester is a rural community located in a fertile valley bordered by the Bucketts and Mograni Ranges; 2 1/2 hours north of Sydney, 1 3/4 hours north of Newcastle and an hour west of Taree Gloucester township is surrounded by 3,000 sq kms of rugged terrain incorporating farm land, hills, forests, rivers and streams. Gloucester is considered the gateway to Barrington Tops.

Gloucester has a range of accommodation options and events for everyone. Accommodation choices range from:

- Bed and Breakfast
- Caravan/Camping
- Farmstay
- Hotel/Motel
- Lodging
- Resorts

Festivals and events run throughout the whole year. Gloucester Arts and Cultural Council Inc arrange plays, concerts, bus trips, talent quests, photographic competitions and more throughout the year. Major events include:

Gloucester Chill out in July

Shakespeare on Avon Festival in May

Mountain Man Tri Challenge in September

Spring Festival runs events throughout October

Recommendation

Implement Heritage protection as outlined in LEP 2009



9. References

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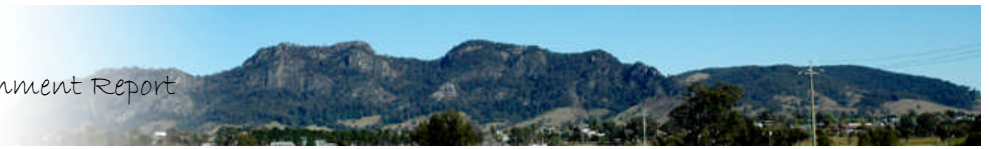
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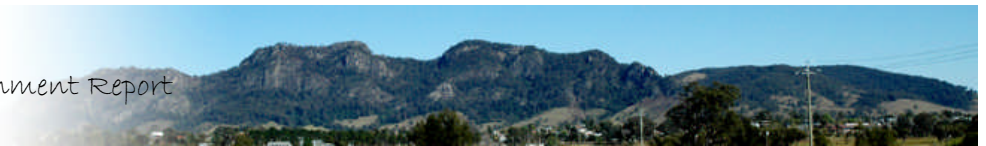


10. Appendices

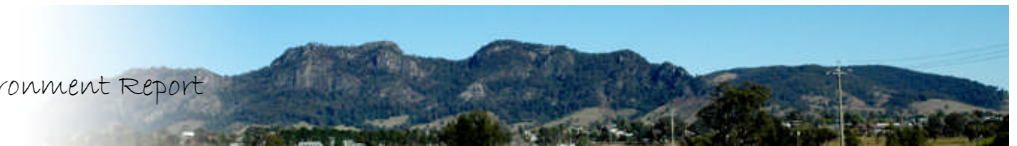
Appendix 1

Threatened Species under the *Threatened Species Conservation Act 1995* (TSC Act) and *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) for the Gloucester Shire.

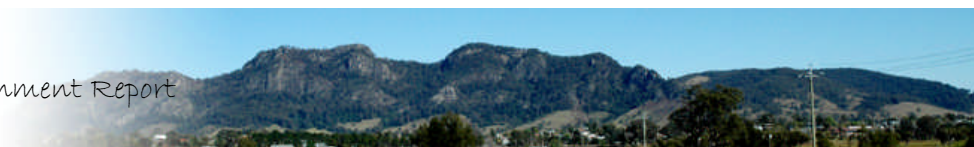
FAUNA			
Scientific Name	Common Name	Listing Status	Act listed under
<i>Dermochelys coriacea</i>	Leatherback Turtle	Endangered Vulnerable	EPBC Act TSC Act
<i>Elseya belli</i>	Bell's Turtle	Vulnerable	EPBC Act TSC Act
<i>Litoria booroolongensis</i>	Booroolong Frog	Endangered	EPBC Act TSC Act
<i>Litoria littlejohni</i>	Littlejohn's Tree Frog	Vulnerable	EPBC Act TSC Act
<i>Litoria daviesae</i>	Davies' Tree Frog	Vulnerable	TSC Act
<i>Litoria subglandulosa</i>	Glandular Frog	Vulnerable	TSC Act
<i>Mixophyes balbus</i>	Stuttering Frog	Endangered	TSC Act
<i>Pyrrholaemus saggitatus</i>	Speckled Warbler	Vulnerable	TSC Act
<i>Atrichornis rufescens</i>	Rufous Scrub-bird	Vulnerable	TSC Act
<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	Vulnerable	TSC Act
<i>Calyptorhynchus lathamii</i>	Glossy Black-Cockatoo	Vulnerable	TSC Act
<i>Ephippiorhynchus asiaticus</i>	Black-necked Stork	Endangered	TSC Act
<i>Ptilinopus magnificus</i>	Wompoo Fruit-Dove	Vulnerable	TSC Act
<i>Ptilinopus superbus</i>	Superb Fruit-Dove	Vulnerable	TSC Act
<i>Pachycephala olivacea</i>	Olive Whistler	Vulnerable	TSC Act
<i>Pomatostomus temporalis temporalis</i>	Grey-crowned Babbler (eastern subspecies)	Vulnerable	TSC Act
<i>Glossopsitta pusilla</i>	Little Lorikeet	Vulnerable	TSC Act
<i>Ninox strenua</i>	Powerful Owl	Vulnerable	TSC Act
<i>Tyto novaehollandiae</i>	Masked Owl	Vulnerable	TSC Act
<i>Tyto tenebricosa</i>	Sooty Owl	Vulnerable	TSC Act
<i>Cercartetus nanus</i>	Eastern Pygmy-possum	Vulnerable	TSC Act
<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	Vulnerable	TSC Act
<i>Dasyurus</i>	Eastern Quoll	Endangered	TSC Act



<i>viverrinus</i>			
<i>Phascogale tapoatafa</i>	Brush-tailed Phascogale	Vulnerable	TSC Act
<i>Planigale maculata</i>	Common Planigale	Vulnerable	TSC Act
<i>Macropus parma</i>	Parma Wallaby	Vulnerable	TSC Act
<i>Petrogale penicillata</i>	Brush-tailed Rock Wallaby	Endangered	TSC Act
<i>Thylogale stigmatica</i>	Red-legged Pademelon	Vulnerable	TSC Act
<i>Mormopterus norfolkensis</i>	Eastern Freetail-bat	Vulnerable	TSC Act
<i>Mastacomys fuscus</i>	Broad-toothed Rat	Vulnerable	TSC Act
<i>Mastacomys fuscus</i>	Broad-toothed Rat at Barrington Tops in the local government areas of Gloucester, Scone and Dungog	Endangered	TSC Act
<i>Petaurus australis</i>	Yellow-bellied Glider	Vulnerable	TSC Act
<i>Petaurus norfolcensis</i>	Squirrel Glider	Vulnerable	TSC Act
<i>Phascolarctos cinereus</i>	Koala	Vulnerable	TSC Act
<i>Aepyprymnus rufescens</i>	Rufous Bettong	Vulnerable	TSC Act
<i>Potorous tridactylus</i>	Long-nosed Potoroo	Vulnerable	TSC Act
<i>Pteropus poliocephalus</i>	Grey-headed Flying fox	Vulnerable	TSC Act
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	Vulnerable	TSC Act
<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle	Vulnerable	TSC Act
<i>Kerivoula papuensis</i>	Golden-tipped Bat	Vulnerable	TSC Act
<i>Miniopterus australis</i>	Little Bentwing-bat	Vulnerable	TSC Act
<i>Miniopterus schreibersii oceanensis</i>	Eastern Bentwing-bat	Vulnerable	TSC Act
<i>Myotis macropus</i>	Southern Myotis	Vulnerable	TSC Act
<i>Scoteanax rueppellii</i>	Greater Broad-nosed Bat	Vulnerable	TSC Act
<i>Vespadelus trougtoni</i>	Eastern Cave Bat	Vulnerable	TSC Act
<i>Hoplocephalus stephensii</i>	Stephen's Banded Snake	Vulnerable	TSC Act
FLORA			
<i>Asperula asthenes</i>	Trailing Woodruff	Vulnerable	EPBC Act TSC Act



<i>Chiloglottis platyptera</i>	Barrington Tops Ant Orchid	Vulnerable	TSC Act
<i>Cynanchum elegans</i>	White flowered Wax plant	Endangered	EPBC Act TSC Act
<i>Diuris venosa</i>	Veined Doubletail	Vulnerable	EPBC Act TSC Act
<i>Eucalyptus glaucina</i>	Slaty Red Gum	Vulnerable	EPBC Act TSC Act
<i>Euphrasia ciliolate</i>	Polblue Eyebright	Vulnerable	TSC Act
<i>Grevillea obtusiflora</i>		Endangered	TSC Act
<i>Parsonsia dorrigoensis</i>	Milky Silkpod	Vulnerable	TSC Act
<i>Pomaderris queenslandica</i>	Scant Pomaderris	Endangered	TSC Act
<i>Prasophyllum fuscum</i>	Slaty Leek Orchid	Vulnerable	TSC Act
<i>Senna acclinis</i>	Rainforest Cassia	Endangered	TSC Act
<i>Tasmannia glaucifolia</i>	Fragrant Pepperbush	Vulnerable	EPBC Act TSC Act
<i>Tasmannia purpurascens</i>	Broad-leaved Pepperbush	Vulnerable	EPBC Act TSC Act
<i>Zieria lasiocaulis</i>	Willi Willi Zieria	Endangered	TSC Act
Ecological Communities			
	Littoral Rainforest and Coastal Vine Thickets of Eastern Australia	Critically Endangered	EPBC Act
	Upland Wetlands of the New England Tablelands and the Monaro Plateau	Endangered	EPBC Act TSC Act
	Weeping Myall – Coobah – Scrub Wilga Shrubland of the Hunter Valley	Critically Endangered	EPBC Act
	White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered	EPBC Act

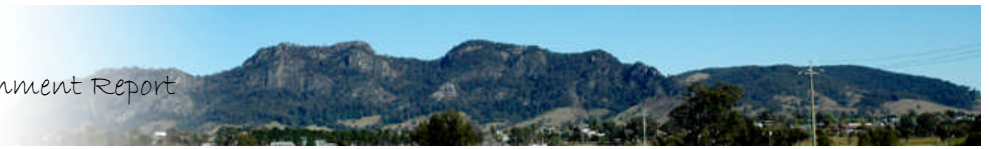


Appendix 2

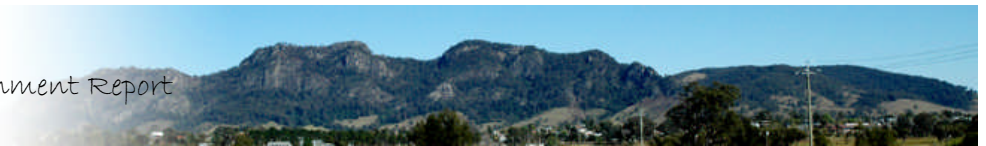
Noxious weed declarations for Gloucester Shire Council (DPI 2009)

The following weeds are declared noxious in the control area of Gloucester Shire Council:

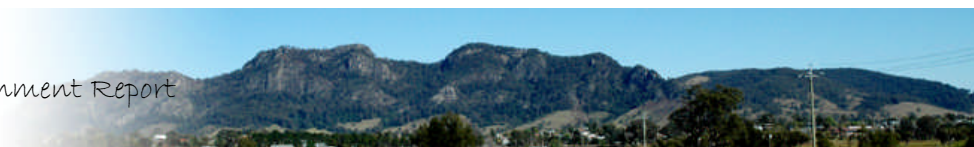
Weed	Class	Legal requirements
African boxthorn [Lycium ferocissimum]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
African feathergrass [Pennisetum macrourum]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
African turnipweed [Sisymbrium runcinatum]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
African turnipweed [Sisymbrium thellungii]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Alligator weed [Alternanthera philoxeroides]	2	The plant must be eradicated from the land and the land must be kept free of the plant
Anchored water hyacinth [Eichhornia azurea]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Annual ragweed [Ambrosia artemisiifolia]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Arrowhead [Sagittaria montevidensis]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Artichoke thistle [Cynara cardunculus]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Athel pine [Tamarix aphylla]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Bathurst/Noogoora/Hunter/South American/Californian/cockle burr [Xanthium species]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Bear-skin fescue [Festuca gautieri]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Black knapweed [Centaurea nigra]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Blackberry [Rubus fruticosus aggregate species] except cultivars Black satin, Chehalem, Chester	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated



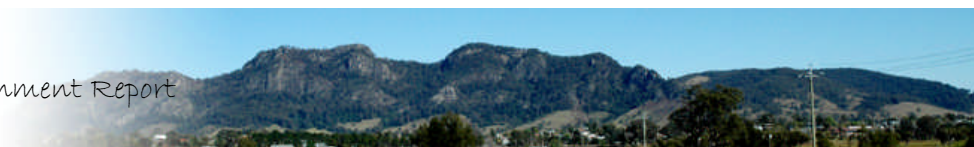
Thornless, Dirksen Thornless, Loch Ness, Murrindindi, Silvan, Smoothstem, Thornfree		or knowingly distributed This is an All of NSW declaration
Bridal creeper [Asparagus asparagoides]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Broad-leaf pepper tree [Schinus terebinthifolius]	3	The plant must be fully and continuously suppressed and destroyed
Broomrapes [Orobanche species] Includes all Orobanche species except the native O. cernua variety australiana and O. minor	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Burr ragweed [Ambrosia confertiflora]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Cabomba [Cabomba caroliniana]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Cayenne snakeweed [Stachytarpheta cayennensis]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Chilean needle grass [Nassella neesiana]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Chinese celtis [Celtis sinensis]	3	The plant must be fully and continuously suppressed and destroyed
Chinese violet [Asystasia gangetica subspecies micrantha]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Clockweed [Gaura parviflora]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Columbus grass [Sorghum x alnum]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Corn sowthistle [Sonchus arvensis]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Crofton weed [Ageratina adenophora]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Dodder [Cuscuta species] Includes All Cuscuta species except the native species C. australis, C. tasmanica and C. victoriana	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
East Indian hygrophila [Hygrophila polysperma]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
English broom [Cytisus scoparius]		See Scotch broom



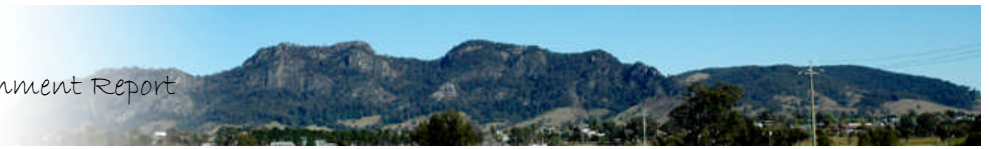
Espartillo [Achnatherum brachychaetum]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Eurasian water milfoil [Myriophyllum spicatum]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Fine-bristled burr grass [Cenchrus brownii]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Fountain grass [Pennisetum setaceum]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Gallon's curse [Cenchrus biflorus]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Giant Parramatta grass [Sporobolus fertilis]	3	The plant must be fully and continuously suppressed and destroyed
Giant rat's tail grass [Sporobolus pyramidalis]	3	The plant must be fully and continuously suppressed and destroyed
Glaucous starthistle [Carthamus glaucus]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Golden dodder [Cuscuta campestris]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Golden thistle [Scolymus hispanicus]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Green cestrum [Cestrum parqui]	3	The plant must be fully and continuously suppressed and destroyed
Groundsel bush [Baccharis halimifolia]	3	The plant must be fully and continuously suppressed and destroyed
Hackleberry, Celtis [Celtis sinensis]		See Chinese celtis
Harrisia cactus [Harrisia species]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed This is an All of NSW declaration
Hawkweed [Hieracium species]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Horsetail [Equisetum species]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Hymenachne [Hymenachne amplexicaulis]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Italian bugloss [Echium species]		See Paterson's curse, Vipers bugloss, Italian bugloss
Johnson grass [Sorghum halepense]	4	The growth and spread of the plant must be



		controlled according to the measures specified in a management plan published by the local control authority
Karoo thorn [Acacia karroo]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Kochia [Bassia scoparia] except Bassia scoparia subspecies trichophylla	1	except B.scoparia subspecies trichophylla The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Lagarosiphon [Lagarosiphon major]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Lantana [Lantana species]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Lantana [Lantana species]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Leafy elodea [Egeria densa]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Long-leaf willow primrose [Ludwigia longifolia]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Mexican feather grass [Nassella tenuissima]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Mexican poppy [Argemone mexicana]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Miconia [Miconia species]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Mimosa [Mimosa pigra]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Mossman River grass [Cenchrus echinatus]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration
Mother-of-millions [Bryophyllum species and hybrids]	3	The plant must be fully and continuously suppressed and destroyed and the plant may not be sold, propagated or knowingly distributed
Nodding thistle [Carduus nutans]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Noogoora burr [Xanthium species]		See Bathurst/Noogoora/Hunter/South American/Californian/cockle burr
Onion grass [Romulea species] Includes all Romulea species and varieties	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with



except <i>R. rosea</i> var. <i>australis</i>		This is an All of NSW declaration
Oxalis [Oxalis species and varieties]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with
Includes all Oxalis species and varieties except the native species <i>O. chnoodes</i> , <i>O. exilis</i> , <i>O. perennans</i> , <i>O. radicata</i> , <i>O. rubens</i> , and <i>O. thompsoniae</i>		This is an All of NSW declaration
Pampas grass [Cortaderia species]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Parthenium weed [Parthenium hysterophorus]	1	The plant must be eradicated from the land and the land must be kept free of the plant
		This is an All of NSW declaration
Paterson's curse, Vipers bugloss, Italian bugloss [Echium species]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Pond apple [Annona glabra]	1	The plant must be eradicated from the land and the land must be kept free of the plant
		This is an All of NSW declaration
Prickly acacia [Acacia nilotica]	1	The plant must be eradicated from the land and the land must be kept free of the plant
		This is an All of NSW declaration
Prickly pear [Cylindropuntia species]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
		This is an All of NSW declaration
Prickly pear [Opuntia species except O. ficus-indica]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
		This is an All of NSW declaration
Red rice [Oryza rufipogon]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with
		This is an All of NSW declaration
Rhus tree [Toxicodendron succedaneum]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
		This is an All of NSW declaration
Rubbervine [Cryptostegia grandiflora]	1	The plant must be eradicated from the land and the land must be kept free of the plant
		This is an All of NSW declaration
Sagittaria [Sagittaria platyphylla]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with
		This is an All of NSW declaration
Salvinia [Salvinia molesta]	3	The plant must be fully and continuously suppressed and destroyed
Sand oat [Avena strigosa]	5	The requirements in the Noxious Weeds Act 1993



		for a notifiable weed must be complied with
		This is an All of NSW declaration
Scotch broom [Cytisus scoparius]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Senegal tea plant [Gymnocoronis spilanthoides]	1	The plant must be eradicated from the land and the land must be kept free of the plant
		This is an All of NSW declaration
Serrated tussock [Nassella trichotoma]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Siam weed [Chromolaena odorata]	1	The plant must be eradicated from the land and the land must be kept free of the plant
		This is an All of NSW declaration
Smooth-stemmed turnip [Brassica barrelieri subspecies oxyrrhina]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with
		This is an All of NSW declaration
Soldier thistle [Picnomon acarna]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with
		This is an All of NSW declaration
Spiny burrgrass [Cenchrus incertus]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Spiny burrgrass [Cenchrus longispinus]	4	The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority and the plant may not be sold, propagated or knowingly distributed
Spotted knapweed [Centaurea maculosa]	1	The plant must be eradicated from the land and the land must be kept free of the plant
		This is an All of NSW declaration
St. John's wort [Hypericum perforatum]	3	The plant must be fully and continuously suppressed and destroyed
Texas blueweed [Helianthus ciliaris]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with
		This is an All of NSW declaration
Water caltrop [Trapa species]	1	The plant must be eradicated from the land and the land must be kept free of the plant
		This is an All of NSW declaration
Water hyacinth [Eichhornia crassipes]	3	The plant must be fully and continuously suppressed and destroyed
Water lettuce [Pistia stratiotes]	1	The plant must be eradicated from the land and the land must be kept free of the plant
		This is an All of NSW declaration
Water soldier [Stratiotes aloides]	1	The plant must be eradicated from the land and the land must be kept free of the plant
		This is an All of NSW declaration
Willows [Salix species]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with





























Includes all Salix species except S. babylonica, S. x reichardtii, S. x calodendron		This is an All of NSW declaration
Witchweed [Striga species] Includes all Striga species except native species and Striga parviflora	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Yellow burrhead [Limnocharis flava]	1	The plant must be eradicated from the land and the land must be kept free of the plant This is an All of NSW declaration
Yellow nutgrass [Cyperus esculentus]	5	The requirements in the Noxious Weeds Act 1993 for a notifiable weed must be complied with This is an All of NSW declaration



Appendix 3

WoNS species from www.weeds.org.au

Thumbnail	Common Name	Scientific Name
	<u>Prickly Acacia, Blackthorn, Prickly Mimosa, Black Piquant, Babul</u>	 <i>Acacia nilotica</i>
	<u>Alligator Weed</u>	 <i>Alternanthera philoxeroides</i>
	<u>Pond Apple, Pond-apple Tree, Alligator Apple, Bullock's Heart, Cherimoya, Monkey Apple, Bobwood, Corkwood</u>	 <i>Annona glabra</i>
	<u>Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus</u>	 <i>Asparagus asparagoides</i>
	<u>Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba</u>	 <i>Cabomba caroliniana</i>
	<u>Boneseed</u>	 <i>Chrysanthemoides monilifera</i> subsp. <i>monilifera</i>
	<u>Bitou Bush</u>	 <i>Chrysanthemoides monilifera</i> subsp. <i>rotundata</i>
	<u>Rubber Vine, Rubbervine, India Rubber Vine, India Rubbervine, Palay Rubbervine, Purple Allamanda</u>	 <i>Cryptostegia grandiflora</i>
	<u>Hymenachne, Olive Hymenachne, Water Stargrass, West Indian Grass, West Indian Marsh Grass</u>	 <i>Hymenachne amplexicaulis</i>
	<u>Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage</u>	 <i>Lantana camara</i>
	<u>Mimosa, Giant Mimosa, Giant Sensitive Plant, Thorny Sensitive Plant, Black Mimosa, Catclaw Mimosa, Bashful Plant</u>	 <i>Mimosa pigra</i>
	<u>Chilean Needle grass</u>	 <i>Nassella neesiana</i>
	<u>Serrated Tussock, Yass River Tussock, Yass Tussock, Nassella Tussock (NZ)</u>	 <i>Nassella trichotoma</i>



[Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean](#)  *Parkinsonia aculeata*



[Parthenium Weed, Bitter Weed, Carrot Grass, False Ragweed](#)  *Parthenium hysterophorus*




[Mesquite, Algaroba](#)  *Prosopis spp.*




[Blackberry, European Blackberry](#)  *Rubus fruticosus aggregate*




[Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow](#)  *Salix spp. except S.babylonica, S.x calodendron & S.x reichardtiji*



[Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed](#)  *Salvinia molesta*



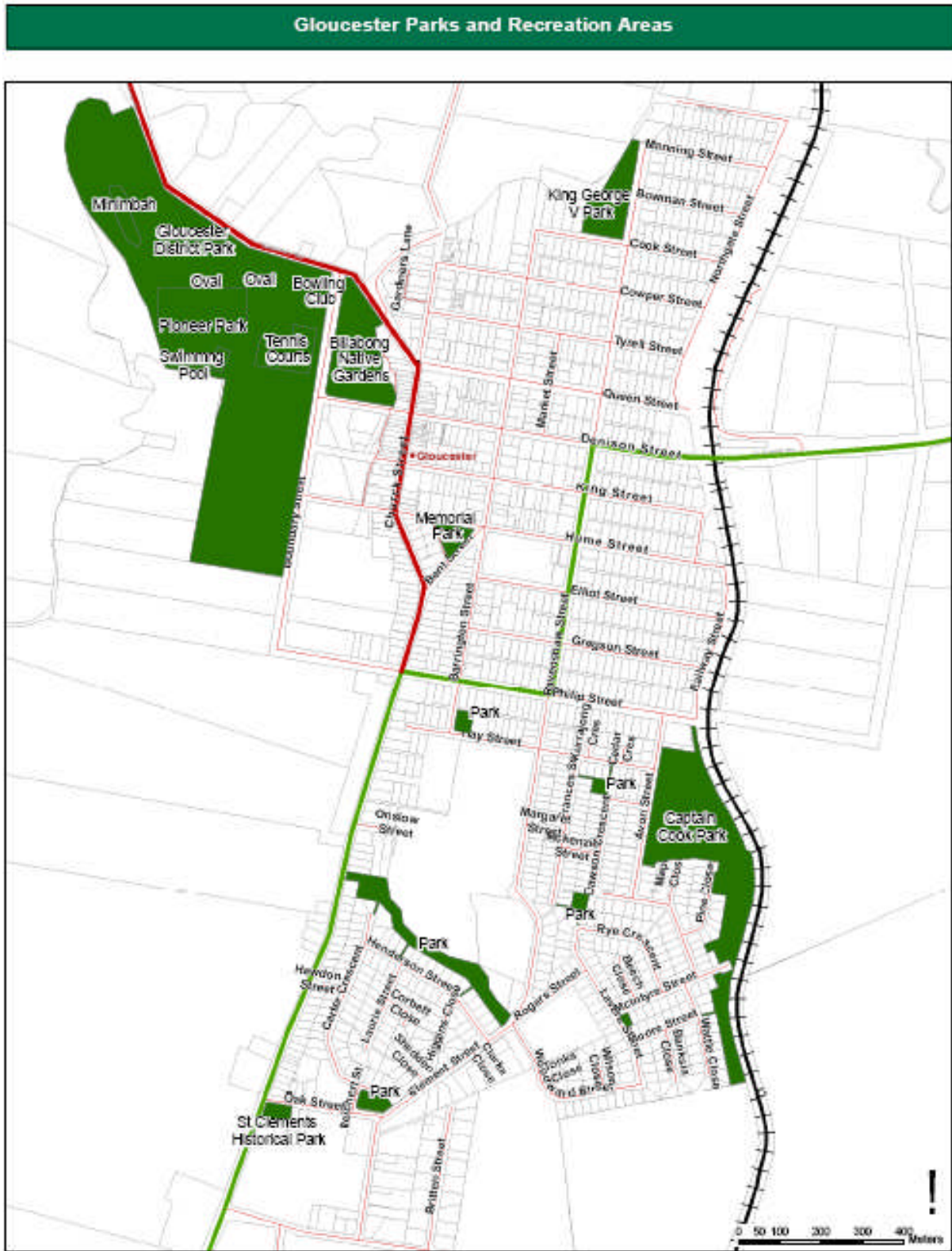
[Athel Pine, Athel Tree, Tamarisk, Athel Tamarisk, Athel Tamarix, Desert Tamarisk, Flowering Cypress, Salt Cedar](#)  *Tamarix aphylla*

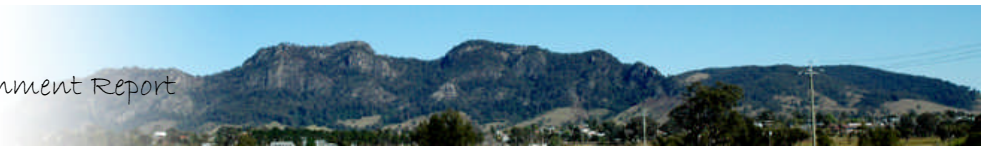


[Gorse, Furze](#)  *Ulex europaeus*



Appendix 4





Appendix 5

Gloucester Local Environmental Plan 2000

Part 4 Heritage provisions

41 Aims in relation to heritage

The aims of this plan in relation to heritage are:

- (a) to conserve the environmental heritage of the Gloucester area, and
- (b) to integrate heritage conservation into the planning and development control process, and
- (c) to provide for public involvement in the conservation of environmental heritage, and
- (d) to ensure that any development does not adversely affect the heritage significance of heritage items and heritage conservation areas and their settings.

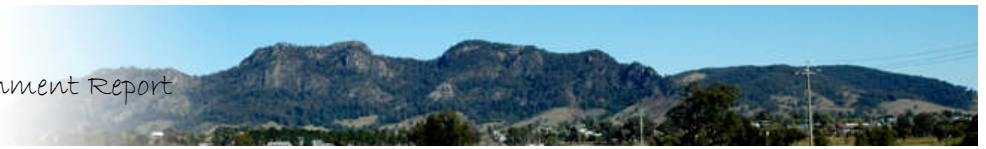
42 Protection of heritage items, heritage conservation areas and relics

- (1) The following development may be carried out only with development consent:
 - (a) demolishing, defacing, damaging or moving a heritage item or a building, work, relic, tree or place within a heritage conservation area,
 - (b) altering a heritage item or building, work or relic within a heritage conservation area by making structural changes to its exterior,
 - (c) altering a heritage item or a building, work or relic within a heritage conservation area by making non-structural changes to the detail, fabric, finish or appearance of its exterior, except changes resulting from any maintenance necessary for its ongoing protective care which does not adversely affect its heritage significance,
 - (d) moving a relic, or excavating land for the purpose of discovering, exposing or moving a relic,
 - (e) erecting a building on, or subdividing land on which the heritage item is located or which is within a heritage conservation area.
- (2) Development consent is not required by this clause if the Council is of the opinion that the proposed development would not adversely affect the heritage significance of the heritage item or heritage conservation area.
- (3) When determining a development application required by this clause, the Council shall take into consideration the extent to which the carrying out of the proposed development would affect the heritage significance of the heritage item or the heritage conservation area.

Note. The website of the Heritage Branch of the Department of Planning has publications that provide guidance on assessing the impact of proposed development on the heritage significance of items (for example, *Statements of Heritage Impact*).

43 Notice of certain heritage development applications

Sections 79, 79A and 79C of the Act (which provide for the giving of notice, and for the making and consideration of submissions, about the proposed development) apply to the demolishing, defacing or damaging of a heritage item or a building, work, relic, tree or place within a heritage conservation area (and to the use of a building or land referred to in clause 47 for a purpose which, but for that clause, would be prohibited by this plan).



44 (Repealed)

45 Development of known or potential archaeological sites

- (1) The Council may grant consent to the carrying out of development on an archaeological site that has Aboriginal heritage significance, (such as a site that is the location of an Aboriginal place or a relic within the meaning of the [National Parks and Wildlife Act 1974](#)) or a potential archaeological site that is reasonably likely to have Aboriginal heritage significance only if:
 - (a) it has considered an assessment of how the proposed development would affect the conservation of the site and any relic known or reasonably likely to be located at the site prepared in accordance with any guidelines for the time being notified to it by the Director-General of National Parks and Wildlife, and
 - (b) except where the proposed development is integrated development, it has notified the local Aboriginal communities (in such a way as it thinks appropriate) of the development application and taken into consideration any comments received in response within 21 days after the notice was sent, and
 - (c) it is satisfied that any necessary consent or permission under the [National Parks and Wildlife Act 1974](#) has been granted.
- (2) The Council may grant consent to the carrying out of development on an archaeological site that has non-Aboriginal heritage significance or a potential archaeological site that is reasonably likely to have non-Aboriginal heritage significance only if:
 - (a) it has considered an assessment of how the proposed development would affect the conservation of the site and any relic known or reasonably likely to be located at the site prepared in accordance with any guidelines for the time being notified to it by the Heritage Council, and
 - (b) (Repealed)
 - (c) it is satisfied that any necessary excavation permit required by the *Heritage Act 1974* has been granted.

46 Development in the vicinity of heritage items, heritage conservation areas, archaeological sites or potential archaeological sites

- (1) The Council shall take into consideration the likely effect of the proposed development on the heritage significance of a heritage item, heritage conservation area, archaeological site or potential archaeological site, and on its setting, when determining an application for consent to carry out development on land in its vicinity.
- (2) When determining an application for consent to carry out development in the vicinity of a building, works or relic which is more than 50 years old, the Council shall take into consideration the likely effect of the proposed development on the heritage significance of the building, work or relic whether or not the building, work or relic is listed in Schedule 5.

47 Conservation incentives

- (1) The Council may grant consent to the use, for any purpose, of a building that is a heritage item or is within a heritage conservation area, or of the land on which the building is erected, even though the use would otherwise be prohibited by this plan, if it is satisfied that:



- (a) the proposed use would not adversely affect the heritage significance of the item or heritage conservation area or the amenity of the heritage conservation area, and
 - (b) the conservation of the building depends on the granting of consent.
- (2) When considering an application for consent to erect a building on land on which a heritage item is located or on land within a heritage conservation area, the Council may, for the purpose of determining:
- (a) the floor space ratio, and
 - (b) the number of parking spaces to be provided on site, exclude the floor space of the building from its calculation of the floor space of the buildings erected on the land, but only if the Council is satisfied that the conservation of the building depends on it making the exclusion.

48 Karst conservation areas

- (1) A person shall not carry out development (including excavation) in a karst conservation area without the consent of the Council.
- (2) The Council shall not grant a consent referred to in subclause (1) unless the Council has made an assessment of the extent to which the development would affect the scientific significance of the karst features.
- (3) The Council shall not grant consent referred to in subclause (1) if the development would, in the opinion of the Council, destroy or damage underground karst features.

Schedule 5 Heritage conservation

(Clause 5 (1))

Part 1 Heritage conservation areas

Gloucester Main Street precinct

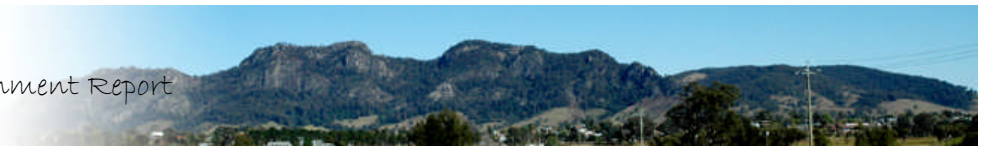
Part 2 Heritage items

Items of State significance

- Barrington Tops National Park (Gloucester part)
- Woko National Park, via Curricabark Road
- Camel's Hump Nature Reserve, Nowendoc Road
- former Mountain Maid Gold Mine, Copeland
- Cyanide Treatment Works (Rainbow Battery), Copeland
- "Airlie", Rawdon Vale Road, Rawdon Vale
- "Stobo", The Moppy Road, Rawdon Vale

Items of Regional significance

- Gloucester Police Station, 8 Church Street
- Gloucester Courthouse, 10 Church Street
- former ABC Bank building, 23 Church Street
- Gloucester Coop Dairy Co factory buildings, Railway Street
- Australian Agricultural Company Manager's House (formerly known as "Gloucester Cottage") and outbuildings, Bucketts Way



- Australian Agricultural Company Dam, Bucketts Road
- Barrington Pioneer Cemetery, East Barrington Road, Barrington
- Copeland No 2 General Cemetery, Scone Road, Copeland
- Copeland Tops Forest Preserve, including former Hidden Treasure Gold Mine, Scone Road, Copeland

Items of local significance

- former Presbyterian church manse, 7 Barrington Street
- former timber worker's house, Barrington/Cowper Street
- St Andrews Presbyterian Church and Hall, Barrington/Tyrell Streets
- former "Hillcrest" hospital, Barrington/Tyrell Street
- "Roma", Barrington/Gregson Streets
- War Memorial clocktower, Bent Street
- original Shire Council Chambers, 12 Church Street
- Sellicks Chambers, 42 Church Street
- Westpac Bank, 47 Church Street
- School of Arts, 56 Church Street
- McRae's building, 73 Church Street
- Majestic Theatre, 78 Church Street
- Avon Valley Inn, 82 Church Street
- Payless building, 84 Church Street
- Masonic Temple, Church/Cowper Streets
- St Clement's Park historic site, Church/Oak Streets
- "Easton's" house, 16 Cowper Street
- "Gloucester Cottage", 61 Denison Street
- former Sisters of St Joseph convent, Denison Street
- Federation house, Gardiners Lane
- "Narraweena", 10 Gregson Street
- original Gloucester Public School building, Hume Street
- St Pauls Anglican Church and Rectory, Hume/Ravenshaw Streets
- "Fairview" (concrete block house), 1 Market Street
- Gloucester Post Office, 9 Queen Street
- former Bank of NSW building, 2 Queen Street
- former CBC Bank building, 10 Queen Street
- former Abbots Auctioneer's building, 16 Queen Street
- second "Hillcrest" hospital, 16 Tyrell Street
- Water tower, Tyrell Street
- John McKenzie's grave, Gloucester Cemetery
- disused Upper Avon Road Bridge, Avon State Forest
- Gloucester Sports Ground Grandstand, Barrington Road
- Gloucester Showground precinct, Barrington Road
- Thunderbolt's Cave, via the Bucketts Road
- Free Presbyterian Church, Barrington
- early (1910) Barrington Public School building, Barrington
- original school residence, Barrington East Road
- slab house, 402 Barrington East Road
- Barrington House, Barrington
- Barrington Rover bridge, Scone Road, Barrington



- “Faulkland”, Faulkland Road, Faulkland
- “Rawdon Vale”, The Moppy Road, Rawdon Vale
- “Bonnie Doon”, Rawdon Vale Road, Rawdon Vale
- Presbyterian Church, Rookhurst
- Original Public School building, Rookhurst
- “PGK” survey peg mark, Nowendoc Road

Part 3 Archaeological sites

none at present

Part 4 Potential archaeological sites

- The Glen/Craven logging tramline, Glen Road, Craven
- Mount McKenzie massacre site, Barrington National Park
- Gloucester Main colliery site, King George Park
- Avon Valley Colliery site, Waukivory Road