

Cessnock City Council

State of the Environment Report 2009/10



The 2009/10 Annual Report is available to view online at www.cessnock.nsw.gov.au.

In order to reduce our impact on the environment we encourage printing be kept to a minimum.

To ensure the information is accessible by all, copies of the full report are available at our Administration Building or at Cessnock and Kurri Kurri Libraries. Copies may also be requested by calling our customer service centre on (02) 4993 4100.



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Prepared by Cessnock City Council 2010

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State of the Environment Report

State of the Environment Report - Clause 217 (2) and Clauses 218-226

The Cessnock City Council State of the Environment Report is published as a separate document from the Council's Annual Report.

Increasingly, the actions of local government are being seen as the key to environmental protection and restoration. Local government provides opportunities for the community to become involved in environmental management at a grass roots level.

The success of this involvement is dependent on community awareness and participation. State of the Environment Reporting is a widely accepted means for educating the community about the environment and the management and restoration activities which are taking place in their local area.

Other values of State of the Environment Reporting include the provision of:

- An information base for decision-making and monitoring
- A basis for sound planning and policy development
- A community information source
- A social and economic context for environmental issues, and
- A base for comparison of environmental data, both within and across regions.

Cessnock City Council's 2009/2010 State of the Environment Report is based on the state-pressure-response model used in previous years. This model requires consideration on the state or condition of the environment, the pressures or impacts upon it, and the policies, projects and programs which respond to the pressures.

The report only discusses new information or projects that have arisen in the reporting period July 2009 – June 2010. Background information may be found in previous State of the Environment Reports that are available for viewing at the local libraries and Council's Website. The focus of the report is not restricted to Council's activities, but takes on a community-wide perspective by drawing together information from many different local sources.

INTRODUCTION

The New South Wales (NSW) Local Government Act 1993 (section 428 (2) (c)) requires all councils to produce an annual report on the State of the Environment (SoE).

This report covers the period from 1 July 2009 to 30 June 2010 and is a supplementary report to provide additional information to support the comprehensive report completed for the year 2008-09. As outlined by the Department of Local Government, a supplementary SoE report must:

- Identify any new environmental impacts since the last comprehensive SoE report,
- And, update the trends in environmental impacts that are important to each environment sector.

SoE Reports contain information about the condition of the environment (state), pressures the environment is subject to (pressure) and measures taken to alleviate those pressures (response) during the reporting period. They outline what has been done to address adverse impacts and whether those actions have been successful in delivering results.

This report is structured into several sectors in accordance with the Local Government Act 1993. These are:

- Towards Sustainability
- Human Settlements
- Land
- Air
- Water
- Biodiversity
- Heritage

"At a Glance" tables provided at the start of each section follow the usual State-Pressure-Response model (described above), giving a brief summary of the key points and identifying any data gaps that need to be explored in the future.

This report also continues the process of the transition from environmental reporting to sustainability reporting with the inclusion of economic and social development information in the Towards Sustainability chapter.

CESSNOCK LOCAL GOVERNMENT AREA PHYSICAL PROFILE

The Cessnock City Council (CCC) Local Government Area (LGA) encompasses 1,970 square kilometres of the lower Hunter Valley in eastern New South Wales (CCC, 1994). In August 2006 a census was conducted reporting the population of the Cessnock LGA as 46,206. The Cessnock LGA lies approximately 50km northwest of Newcastle and 120km north of Sydney and has boundaries extending from the watershed between the Hawkesbury and Hunter Rivers, through to Branxton and the New England Highway (Advitech, 1996).

Cessnock City Council – Our Vision, Our Goals

The Local Government Amendment (Ecologically Sustainable Development) Act 1997 took effect on January 1, 1998. The Act strengthens the environmental management role of Councils by incorporating the principles of Ecologically Sustainable Development (ESD) throughout all key aspects of the Local Government Act, 1993. With this in mind, Cessnock City Council has adopted the following statement as its vision:

"Cessnock City Council's vision is for a safe, healthy environment where residents can enjoy a high quality of life"

Corporate objectives and measures to reach those objectives have been formulated and are reviewed and updated annually.



CLIMATE

The Cessnock LGA is subject to a temperate climate, characterised by mild winters and hot summers (Advitech, 1996). Records of temperature and rainfall for 2009-10 are shown in Figures 1 and 2. The maximum temperature recorded for the year at Cessnock Airport was 43.2°C on 20th November 2009 and the minimum temperature was -2.1°C on 9th August 2009. Total rainfall for 2009-10 was 724.4mm (a 22% decrease on 2008-09) and there were 4 days over 40°C.

Figure 1: 2009-10 Cessnock Minimum and Maximum Temperatures

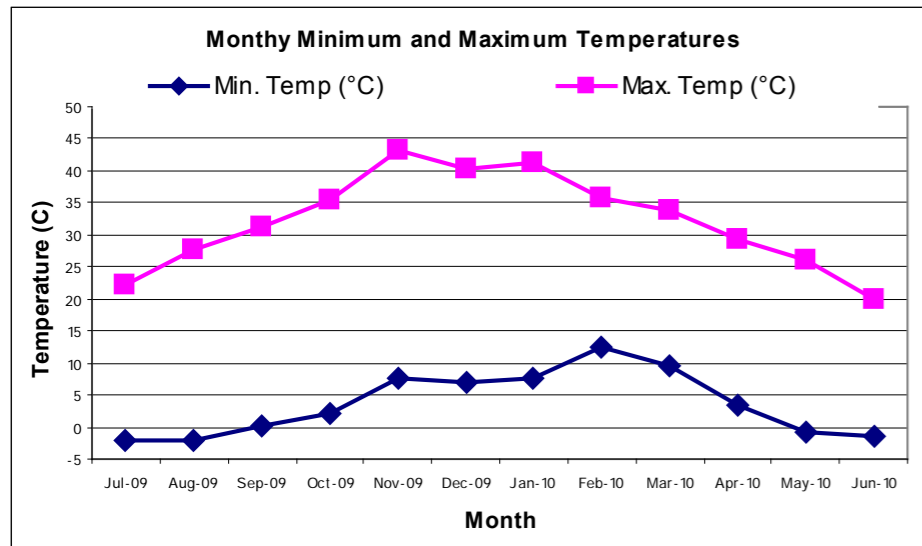
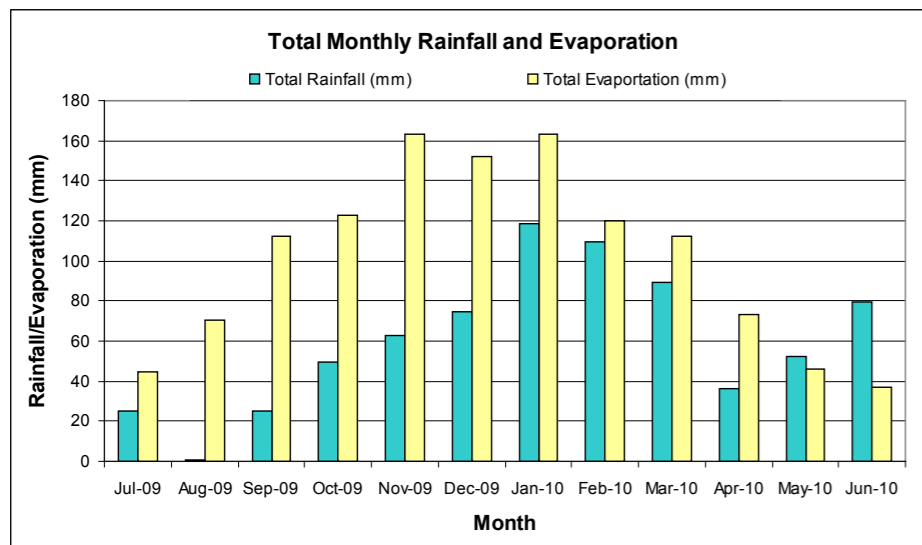


Figure 2: 2009 Cessnock Total Rainfall and Evaporation



LINKS TO CITY MANAGEMENT PLAN

It is important to note that it is not the role of this report to document what actions will be taken to respond to the issues identified, but simply to highlight those issues that need to be addressed. Some issues will require responses from different government departments or community organisations. Council encourages those departments/organisations to take steps to incorporate responses to these issues within their own planning processes.

TOWARDS SUSTAINABILITY

ENVIRONMENTAL PROGRAMS

FOCUS ON ENERGY PROGRAM

FOCUS on Energy Reduction is a community education program that provides energy meters to residents through the library service. The project is a regional initiative coordinated by the Hunter Central Coast Regional Environmental Management Strategy (HCCREMS) that provides a consistent environmental message for the Hunter, Central Coast and Mid North Coast community. The project will increase awareness of home energy use, and provide helpful hints for households on how to reduce their energy consumption. Six meters are available at Cessnock and Kurri Kurri Libraries for borrowing by residents.

CESSNOCK SHED AND COMMUNITY GARDEN

The Cessnock Shed & Community Garden (a project auspiced by The Samaritans Foundation) continues to deliver a variety of programs at Nulkaba. Open on Mondays (9.00am til 3.00pm) and Thursdays (9.00am til noon) the casual and relaxed Men's Shed members undertake woodworking, metal working and other activities, emphasising the health and wellbeing of all men. Organically orientated horticultural pursuits are available by way of plant propagation in the greenhouse, open and raised garden beds, vegetable, seedlings and shrub raising, and a hot house is under construction.



A social gardening group meets on Thursdays and are on the lookout for extra interested participants. Composting bays, a worm farm, and two water tanks all assist with the sustainability direction of the community garden.

ENVIRONMENT COMMITTEE

On 3 June 2009 Council resolved to proceed with the establishment of an Environment Committee. During 2009-10 a working group was established and developed the Terms of Reference that outlines the make up, scope, meeting and reporting responsibilities of the group. The Terms of Reference were adopted by Council on 26th May 2010 and establishment of the formal committee was commenced with a call for members undertaken during June 2010. This provided an opportunity to further consult with the community and gain insight into areas of interest or value within the community.

COMMUNITY AND SOCIAL DEVELOPMENT

SOCIAL AND COMMUNITY PLAN

In November 2009, Council adopted 'Places, Spaces and Faces; The Cessnock Local Government Area Social and Cultural Plan 2009-2014' and is currently implementing the 21 strategies documented in the plan. The strategies aim to provide both Council and agencies external to Council with a five year strategic plan to develop cultural and social services within the Cessnock LGA.

During 2009-10 the following actions were undertaken from the Social and Cultural Plan:

- The Local Area Planning Team Meeting met bi-monthly throughout the year. The meetings were used to provide guidance in the implementation of the Social and Cultural Plan (2009-2014).
- Council continues to be an active participant of the Cessnock Anti-Violence Network Committee and continues to work in partnership with a range of organisations to deliver projects which aim to reduce family violence.
- Outreach activities targeted at youth, including those relating to social and recreation, were delivered across the Local Government Area by a number of Youth Services. Outreach activities included events at local skate parks, including bike and skating competitions. Additionally, there were many activities provided to young people as part of Youth Week.
- The 2009 NAIDOC Event was well attended by both community members and service providers. Furthermore, the event allowed for networking between local Indigenous Service Providers and Cessnock City Council.
- Activities as part of 2010 Seniors Week were well attended by the local community. The calendar of events offered a diverse range of activities. The feedback for Seniors Week 2010 was positive.

- A strategy aiming to promote the range of services available in the community was worked towards. For instance the community directory was updated and promoted, and where possible community and welfare services were encouraged to participate in local community events, for example Seniors Week Event, NAIDOC Week and Youth Week.

- The Community Development Expenditure Scheme Committee for the Cessnock Local Government Area allocated approximately \$95,000 for social and welfare projects.

CRIME PREVENTION

During 2009-10, Council has consistently worked towards implementing the 8 strategies documented in the Cessnock Local Government Area Crime Prevention Plan 2009-2012. These strategies include, delivering a range of community education campaigns, working with NSW Police to deliver a youth crime prevention program and the appointment of a Crime Prevention consultant to progress 2 of the plan's strategies.

YOUTH SERVICES

In the past twelve months, Cessnock Youth Centre and Outreach Service (CYCOS) had approximately 7,526 young people attend and participate in structured programs and drop-in services. Furthermore, CYCOS was involved in the delivery of youth events as part of Youth Week, participated in numerous school based programs and has worked with NSW Police to deliver a youth crime prevention program.

EARLY INTERVENTION AND PREVENTION

- Family and Community Violence - The Cessnock Anti Violence Network continues to meet and is currently working on a range of programs that aim to reduce family violence within the Cessnock LGA.
- Risk Taking / Antisocial Behaviour - A partnership between NSW Police and Cessnock City Council has allowed for the development and implementation of an early intervention, crime prevention program, titled 'Smart Choices'. In total, 162 students from two schools located within the Cessnock Local Government Area have participated in the program.
- Aim: Health and Wellbeing - The Cessnock Healthy Lifestyle Network has been established and has a core interest in raising the profile and awareness of primary health issues. The network is represented by both government agencies and non-profit organisations, all who deliver services within the Cessnock Local Government Area.

TRANSPORT

The community has collectively advocated for a bus service from Cessnock to Morisset Station. As a result the service began its operations in July 2009.

COMMUNITY FACILITIES

Each year Council implements a prioritised Community Facilities Capital Works and Planned Maintenance Program which incorporates the ongoing development and routine maintenance of Council's community halls and buildings. In 2009-10 the following capital works were undertaken within community facilities:

- Installation of kopper log fencing at North Rothbury Playground.
- Installation of retaining wall and fencing around cricket oval at Mulbring Park.
- Construction of a multipurpose court at Laguna Hall.
- Remediation of cricket nets and BBQ at Branxton Oval.
- Replacement of fencing and refurbishment of the kiosk at Kurri Kurri Sportsground.
- Pergola repairs at Rotary park Kurri Kurri.
- Replacement of picnic shelter at Slacks Park Wollombi.
- Installation of large picnic shelter and BBQ at Pokolbin Park.
- Construction of a car park at Miller Park.
- Installation of floodlighting at Hornets Training Ground Cessnock.
- Refurbishment of roof, flooring and enclosure of grandstand at Birralee Oval Kurri Kurri.
- A toilet upgrade at Norman Brown park Greta.
- Replacement of facilities at Howe park Abermain.
- Installation of shade shelter over lower end of main pool at Branxton Pool.

- Purchase of new pool blankets, roller frame and winder and grandstand maintenance at Cessnock Pool.
- Construction of an access ramp and new toilets at School of Arts Abermain.
- Stage 1 of replacement of roof Kurri Kurri Community Centre.
- Construction of toilets, car park and storage at Millfield Community Hall.
- Installation of two columbarium walls at Gordon Williams Memorial Lawn.

Each year grants are offered to Community Building Management Committees and facility user groups for improvements to Council owned community facilities and/or the land surrounding community facilities including the purchase of minor plant. Projects funded in 2009-10 include:

- Abermain Plaza Hall – curtain tracks and stage curtains.
- Bellbird Preschool – room dividers, outdoor furniture and play equipment.
- Branxton Playgroup – shade sail and play equipment.
- Branxton Preschool – refurbishment of toilets and wash basins.
- Cessnock Gem and Mineral Club – microwave oven.
- Cessnock Multipurpose centre – tree removal and playground surfacing.
- Cessnock Occasional Childcare Centre – shelving unit and teaching aids.
- Greta Community Preschool – play equipment.
- Kurri Kurri Community centre – paint and carpet for room 9.
- Kurri Kurri Early Childcare Centre – play equipment.

- North Cessnock Community hall – urinal.
- Weston Civic Centre – ceiling fans and drinks fridge.
- Weston Community Preschool – storage area.
- Wollombi Community Hall – tiling of ladies toilets.

Each year grants are offered to local sporting groups to assist with development and administration of sport on a dollar for dollar basis. Projects funded in 2009-10 include:

- Bellbird junior Soccer Club – bain-marie and P.A. system.
- Branxton Croquet Club – top dressing of lawns.
- Cessnock Rugby League – field renovation.
- Cessnock Minor Rugby League – seating and goal post pads.
- Cessnock City hornets – security shutters.
- Coalfields Horse riding Club – portable P.A. system.
- Cessnock Tennis Club – fencing.
- Cessnock Athletics Club – high jump mats.
- Greta Branxton Football Club – pie warmer and fridge.
- Kurri Kurri Little Athletics Centre – storage.
- Mulbring Cricket Club – storage.
- Weston Workers Bears Football Club – field aeration.
- Wollombi Tennis Club – clubhouse fit out.

CESSNOCK PERFORMING ARTS CENTRE

In October 2009 at the Lower Hunter Urban Design Awards the Cessnock Performing Arts Centre was awarded the:

- Babic Construction Heritage Award - The award is in recognition of designers who reuse, preserve and rehabilitate many of the area's buildings and precincts. A development incorporating the conservation, preservation or rehabilitation of a building or place.
- Hunter Development Corporation Large Scale Development Award (Leisure/Recreation/Entertainment) - for large-scale, non-residential development.
- Landcom Award for Excellence in Urban Design - the overall winner for excellence in urban design.

TIDY TOWNS – SUSTAINABLE COMMUNITIES PROGRAM

Council continues to support the Tidy Towns – Sustainable Communities Program through a Dollar for Dollar Grant Program, payment of annual fees to KABC, supply of plants, paint and materials for approved maintenance works on public land and the promotion of the program.

During 2009-10 a new Tidy Towns group was formed in North Rothbury bringing the total in the LGA to 14.

As in previous years Tidy Towns from the Cessnock LGA groups received a variety of awards for outstanding community and environmental projects from Keep Austral Beautiful in Tamworth:

- Overall Awards - Kurri Kurri came third in population category D and Cessnock was highly commended in population category E.
- Gundfos Water Conservation Award - Laguna won population category A and Kurri Kurri won population category D.
- Country Energy Bush Spirit Award - highly commendeds were given to Kurri Kurri in population category D and Cessnock in population category E.

- Packaging Stewardship Forum Waste Management and Litter Reduction Award – Cessnock was the winner in population category E.
- Bill Way of Kurri Kurri Tidy Towns received an individual award, a Certificate of Recognition for Long Term and Outstanding commitment to Tidy Towns and the Kurri Kurri Community.

Tidy Towns Projects funded from the Dollar for Dollar Grants during 2009-10 were:

- Printing of information flyers and heritage photograph booklets by Kurri Kurri.
- Awnings for Bucketty Community Hall.

In 2009-10, Community Environmental Care Initiatives Grants were distributed to:

- Wollombi for maintaining public areas and part cost of brushcutter.
- Ellalong for repairs and maintenance to ride-on mower.
- Weston for petrol and hardware to maintain Jock Stewart Park and George Smith reserve.

ECONOMIC DEVELOPMENT

WINE AND TOURISM 2009 YEAR IN REVIEW

At the beginning of 2009 the impact of the Global Financial Crisis on the local economy and Tourism industry had started to be felt in various sectors. However it appears that the tourism sectors in Wine Country handled any direct issues to their business as best could be expected.

The Business Tourism and Conferencing sector appears to have been the hardest hit in terms of downturn in overnight conference delegate stays which impacted on the Accommodation Occupancy with negative growth across the full year.

Cellar Door Sales remained steady with small growth over the year, the Wedding Function business increased with a small growth percentage, and Restaurants had a small downturn, which may have been due to a small decline in conference delegate dining out sessions.

Major Outcomes for 2009 included:

- Accommodation Occupancy Percent decreased by 10.6% to 48.7% for 2009 compared to 2008, driven by an increase of 5.1% in inventory and a drop in Business tourism (conferencing) overnight stays.
- Visitor day count numbers decreased by 2.7% to 2.8 million, although overnight visitors increased slightly by 1.6%.
- Cellar Door weighted average sales were up 6.0% to \$73,011 average for 2009, with total tourism spend at the cellar door increasing by 9.5% to over \$94m.
- There were more than 359 wedding receptions conducted in Wine Country for the year (up 50% on 2008), with over 28,392 guests consuming more than 23,800 bottles of wine of which more than 90% was Hunter branded. (Note that not all wedding venues in the region participated in the program.)

- Total restaurant revenue increased 4.8% for lunch sessions but decreased 8% for the dinner sessions.

All categories experienced a small growth in the number of businesses that contribute to the Tourism Dollar Spend figures:

- Cellar door outlets remained unchanged from 2008.
- Restaurants & Cafes increased by 2.0%.
- Accommodation units increased by 5.1% (102 units with 250 beds)

Tourism Dollar Spend:

All figures were calculated using monthly results with separations and daily trading figures, and expressed as dollars over the number of businesses.

- 109 Cellar Doors
\$94,409,089 +9.5%
- 191 Accommodation facilities
\$74,682,665 -5.9%
- 60 Restaurants & Cafes
\$51,956,283 -4.1%
- 31 Wedding Reception Venues
\$2,072,616
- 13 Golf Courses
\$3,232,000 (estimate)

Visitation Rates:

There was a measured decrease in day trippers (2,774,448 visitors down 2.7% on 2008) but a slight increase in overnight visitors (476,202 up 1.6% on 2008). The decrease in Day Trippers can be attributed to economic slow downs, and Visitor Nights can be attributed to the decrease in Business Conference overnight stays. The slight overall increase comes from Weekend stay which may well be due to major concert stays.

HUNTER REGION BUSINESS EXCELLENCE AWARDS

The winners of the 2009 Hunter Region Business Excellence Awards included The Verandah Restaurant, Pokolbin (Restaurants, Cafes), Johannes Hairtique, Kurri Kurri (Hairdressing/ Beauticians), Topline Garages & Sheds, Kearsley (Construction/Home Improvements), Mortgage Choice Cessnock (Financial Services), Tuffrock Pty Ltd, Weston (Export) and Somewhere Unique, Wollombi (Environmental Excellence in Business). A highly commended was also awarded to Ridgely Didge Pies, Abermain (Fresh Produce).



GRANTS

Cessnock City Council believes strongly in investment in community, demonstrated through participation in community, cultural and environmental activities, and support of local business and preservation of heritage. Council aims to draw on these strengths and provide the support which will help them flourish and grow.

Council has a number of grants and a sponsorship program which provide funding across a range of activities encompassing community, cultural, recreational, environmental and economic. The funding and support provided through these programs supports a diverse range of services and projects that directly benefit the Local Government Area.

The provision of grants and sponsorships are also a mechanism for Council to further the aims identified in social, economic, environmental and cultural policies; applications are assessed against these policies and against broad Council objectives and plans.

Grants are defined as funds given to organisations to assist with the services or projects which they provide, where the Council or grant giver receives acknowledgement.

Types of Grants:

Federal - Federal funds are all monies received directly from the Australian Federal Government, the expenditure of which is administered through or under the direction of any Federal agency.

- State - Tiered funding to other levels of government (local). These grants provide the main source of general revenue for local government.
- Local - a grant of Federal or State funds, allocated for specific programs, that a local council may use for initiatives it wishes to fund.
- Philanthropic - The effort or inclination to increase the well-being of humankind, as by charitable aid or donations by organisations.

- Charitable Foundations - A foundation is a legal categorisation of non-profit organisations. Foundations may also and often have charitable purposes.
- Community Trusts - Community Trusts are created for the purpose of providing money, property or benefits to or for eligible charities or for the establishment of eligible charities.

The Grants Officer at Cessnock City Council is available to assist community groups within the Cessnock LGA to secure funding for the benefit of our wider local community. This role assists Council and community groups in order to maximise external funding, as well as generate partnerships within the community.

The Grants Officer researches funding opportunities and works with applicants; offering advice and support throughout the submissions process. They coordinate Grants Resources which are available to the public: such as current grants available, grant writing tips, and ongoing advice. These documents are available via the Cessnock City Council website under Grants and Sponsorships.

GOVERNANCE

INTEGRATED MANAGEMENT SYSTEM

Council is currently reviewing its Integrated Management System.

2020 COMMUNITY PLAN

During 2009-10 more than 1,000 people have directly participated in the consultation activities that have provided information to develop the draft Cessnock 2020 Community Plan. The extensive program of consultation activities included:

- A community survey of 500 residents.
- A public debate.
- 16 workshops held across the LGA.
- Online discussion forum.
- A school art project.
- A telephone hotline.

A draft has been prepared for exhibition in July 2010.

HUMAN SETTLEMENTS

AT A GLANCE

Population and Settlement Patterns			Data Gaps:
State	Increasing	Continued urban, rural and rural-residential expansion.	
Pressure	Increasing	Demand for land in LGA is placing pressure on undeveloped areas. Few local employment opportunities, isolation and lack of public transport adding to this issue.	
Response	Good	Cessnock DCP 2006 adopted.	
Drinking Water			
State	Stable	5,321,995kL of water consumed in the LGA during 2009-10, an approximate decrease of 4% on last year's consumption.	
Pressure	Stable	Demand has stabilised with the 5yr average falling from 206kL per connection in 2008-09 to 201kL per connection in 2009-10	
Response	Limited	Hunter Water continues to undertake programs such as water tank rebates.	
Transport			
State	Poor	44,694 vehicles registered in the LGA. Private vehicles continue to be the main mode of transport in the area.	
Pressure	Increasing	Lack of public transport and isolation are increasing pressure on this issue.	
Response	Limited	Pathways Program constructed 1.5kms of pathway.	
Waste Management			
State	Increasing	40,610 tonnes of waste was landfilled; 4,195 tonnes of recyclables were collected from kerbsides; a further 8,390 tonnes was diverted from the landfill; and 3,930 ML of waste water was treated during 2009-10.	
Pressure	Stable	The amount of solid and liquid waste has remained constant on a per person basis.	
Response	Good	Numerous waste reduction and recycling programs being undertaken in the LGA.	
Tranquillity and Noise			
State	Unknown	No noise quality monitoring has been undertaken in the LGA. 273 noise complaints (58% barking dogs) were received by Council.	
Pressure	Stable	Noise issues have remained stable on past years.	
Response	Limited	Issues of noise are considered in the development consent process and the EPA regulates noise generating premises.	

RESPONSES TO POPULATION AND SETTLEMENT PATTERNS ISSUES

STATE ENVIRONMENTAL PLANNING POLICIES

On 31 July 2009, State Environmental Planning Policy (Affordable Rental Housing) 2009 commenced. The aims of the SEPP are:

- To provide a consistent planning regime for the provision of affordable rental housing.
- To facilitate the effective delivery of new affordable rental housing by providing incentives by way of expanded zoning permissibility, floor space ratio bonuses and non-discretionary development standards.
- To facilitate the retention and mitigate the loss of existing affordable rental housing.
- To employ a balanced approach between obligations for retaining and mitigating the loss of existing affordable rental housing, and incentives for the development of new affordable rental housing.
- To facilitate an expanded role for not-for-profit-providers of affordable rental housing.
- To support local business centres by providing affordable rental housing for workers close to places of work.
- To facilitate the development of housing for the homeless and other disadvantaged people who may require support services, including group homes and supportive accommodation.

JOINT REGIONAL PLANNING PANELS

Joint Regional Planning Panels (Regional Panels) - independent bodies that will determine regionally significant development applications (DAs) - commenced on 1 July 2009. Regional Panels consist of three State and two council members, with council membership rotating depending on which local government area the proposed development is located in. The classes of regional development to be determined by the Regional Panels include the following development (unless they are a Part 3A project):

- Designated development.
- Development with a capital investment value (CIV) over \$10 million.
- The following development with a CIV over \$5 million:
 - certain public and private infrastructure.
 - Crown development.
 - development where council is the proponent or has a conflict of interest.
 - Ecotourism.
- Subdivision of land into more than 250 lots.
- Certain coastal developments previously assessed under Part 3A of the EP&A Act.

During 2009-10 no Development Applications in the Cessnock LGA qualified for determination by the Hunter and Central Coast Joint Regional Planning Panel.

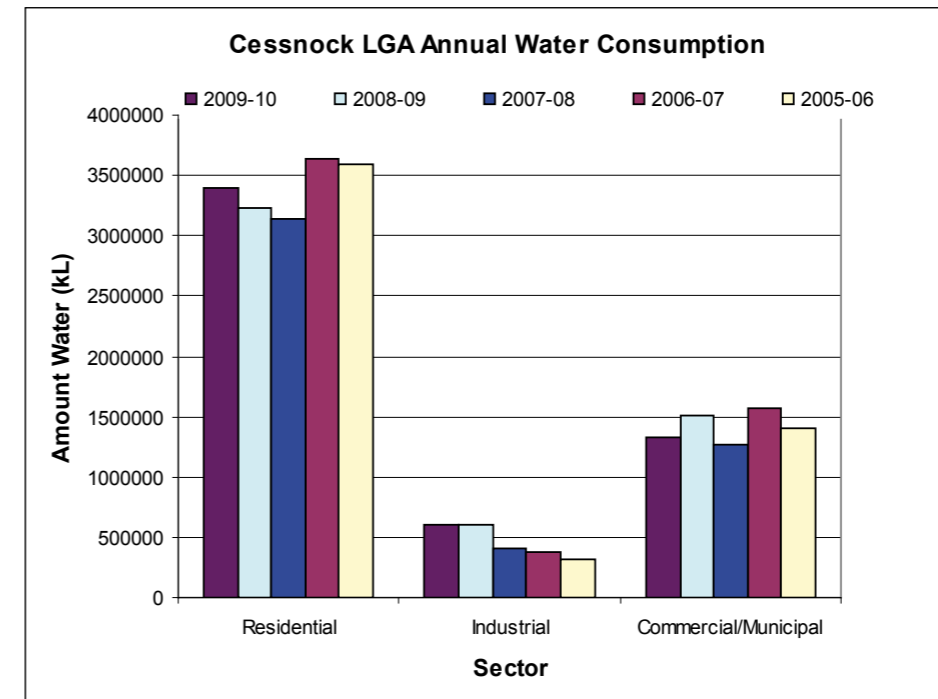
BRANXTON F3 LINK

The new four-lane expressway will be constructed under two contracts, with the eastern section (F3 Freeway to Kurri Kurri) to be built under an alliance contract and the western section (Kurri Kurri to Branxton) under a design and construct contract. The private sector consortium that will partner with the RTA to build the eastern section of the Hunter Expressway was announced in November 2009. The consortium that will build the eastern section of the Hunter Expressway is Thiess Pty Ltd, Parsons Brinckerhoff and Hyder Consulting. Early work on the eastern section of the Hunter Expressway project is continuing and major construction is scheduled to start in the second half of 2010. In November 2009, the construction companies that were short listed to build the western section were announced. AbiGroup Contractors and Leighton Contractors/BMD Joint Venture submitted a tender for the western section of the project. The tender for the western section of the project will be awarded in the second half of 2010.

RESPONSES TO DRINKING WATER ISSUES

Domestic water consumption for the Cessnock LGA was 3,392,780kL averaging out to 201kL per household and 111kL per flat/unit. Industrial, Commercial and Agricultural users consumed another 2,112,075kL. This data was supplied by Hunter Water based on the water year which is 20 April 2009 to 19 April 2010. This represents an increase in water consumption in the LGA from 2008-09 as displayed in the Figure 3.

Figure 3: Annual Water Consumption in the Cessnock LGA



RESPONSES TO TRANSPORT ISSUES

VEHICLE REGISTRATIONS

During 2009-10, there was an increase of 1,188 vehicles registered in the LGA from 2008-09. Figure 4 shows a breakdown of types of vehicles registered in the LGA as at 30th June 2010 and Figure 5 a comparison with 2008-09 registrations. Additional data on fuel types of registered vehicles was also provided by the RTA for 2009-10, this is displayed in Figure 6. It is interesting to note that vehicles that run on leaded fuel has dropped 15% from 2008-09 and those running on LPG has increased by 4% from 2008-09.

LGA PATHWAYS PROGRAM

During 2009-10 three projects have been completed:

- 600m of cycleway on McDonalds Rd.
- 750m of cycleway on Wollombi Rd, Millfield.
- 110m of footpath at Kearsley.

Figure 4: Breakdown of types of vehicles registered in the Cessnock LGA.

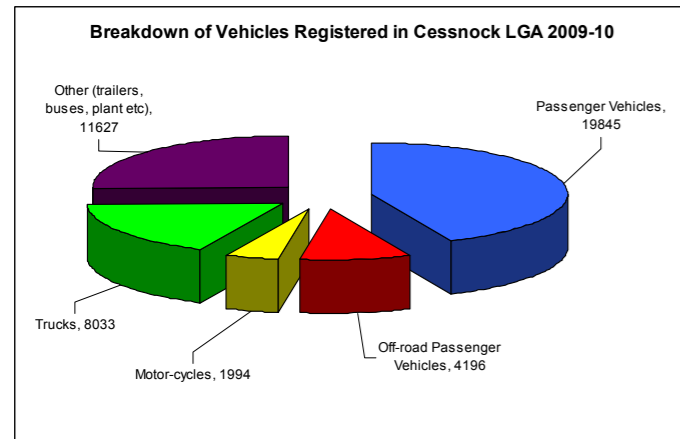


Figure 5: Comparison of vehicles registered in Cessnock LGA over time

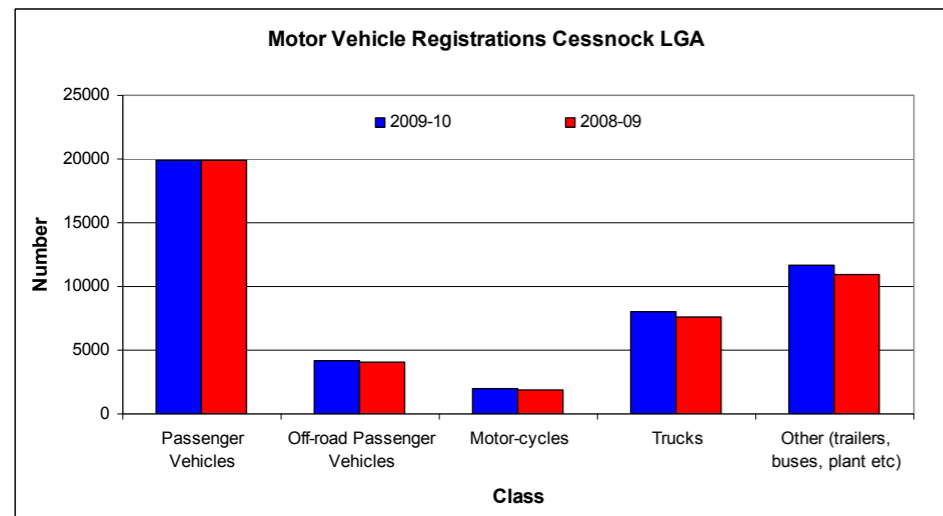
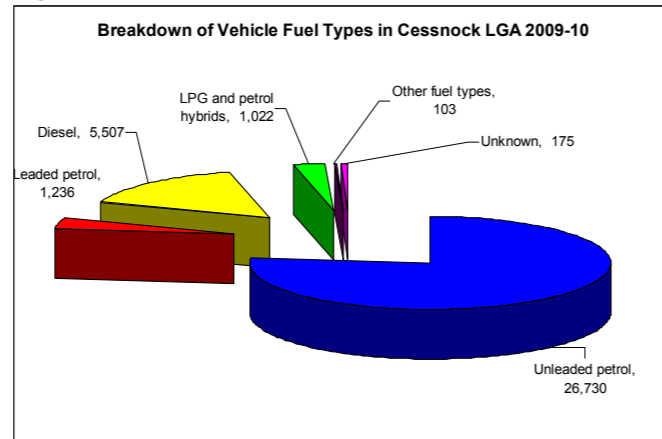


Figure 6: Breakdown of fuel types used by vehicles registered in the Cessnock LGA 2008-2009.



RESPONSES TO WASTE MANAGEMENT ISSUES

SOLID WASTE MANAGEMENT

Landfill Extension

On 9 June 2010 development approval with conditions for the Landfill extension at Cessnock Waste and Reuse Centre was obtained. Umwelt (Australia) Pty Ltd was commissioned by Council to undertake an independent assessment of this application as Council is the proponent, owner and the consent authority for the proposed development. This independent assessment identified that, based on the information provided in the Environmental Impact Statement, the need for the development appeared to be justified and the proposed extension area is a suitable location for an appropriately designed and managed landfill.

Waste Disposal

During 2009-10, 40,610 tonnes of waste was landfilled at the Cessnock Waste and Reuse Centre. From 1st June 2009 the fourth of five annual State Government Waste and Environment Levy increases (aimed at significantly reducing the amount of waste sent to landfill) was imposed on fees charged at the Waste and Reuse Centre.

Domestic waste expressed per person (using 2007 population) is equivalent to 0.88 tonnes (an increase of 200kg per person on 2008-09) of waste produced during 2009-10. Note this does not include greenwaste, reprocessables or recyclables.

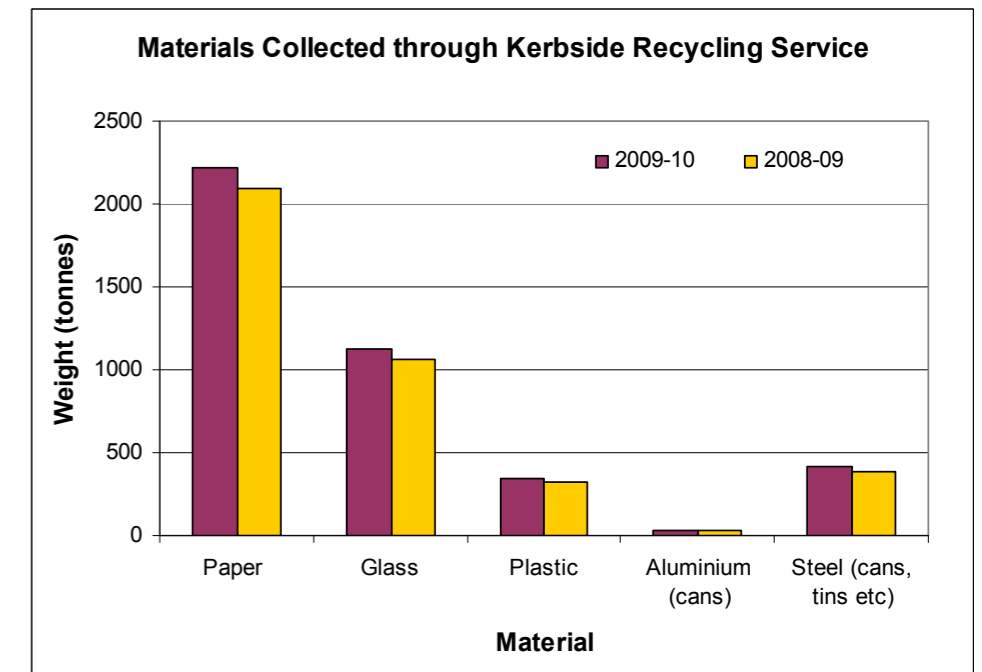
Waste Minimisation at the Cessnock Waste and Reuse Centre

During 2009-10, approximately 205 tonnes of paper and cardboard, 7,369 tonnes of greenwaste, and 816 tonnes of concrete waste was reprocessed and diverted from landfill. In addition, approximately 18,700L of used motor vehicle oil was collected from the waste oil recycling station, and 2,400 tonnes of metal recycled at the Waste and Reuse Centre.

Kerbside Recycling

During 2009-10, 4,195 tonnes of recyclables (up 6% from 2008-09 with an additional 319 households commencing the service) were collected through the kerbside service. The breakdown of the types and amounts of recyclables collected from the Cessnock LGA are shown in Figure 7 (along with a comparison to 2008-09 collection amounts). The recycling of these materials equates approximately to saving enough electricity to power 3,660 homes; enough water to fill 24 Olympic swimming pools; and, removing 593 cars worth of greenhouse gas emissions from the roads for the year.

Figure 7: Cessnock LGA Recyclables Stream (tonnes for 2009-10 displayed and compared to 2008-09 collection)



Hunter Resource Recovery Activities

Over the past 12 months, Hunter Resource Recovery (HRR) has carried out a number of programs and activities aimed at increasing recycling recovery rates including:

- Schools Program - 20 schools in the Cessnock LGA now participate in the free schools recycling service.
- Advertising Program - advertisements were placed in newspapers, radio and TV. In addition HRR purchased space in the White Pages Directory with the "How to Recycle Correctly" advertisement and the 1800 number appearing on page 278. A new e-waste community service announcement was produced and aired on commercial television during January-June 2010.
- Sponsorship - of the Mayoral Academic Awards in 2009 was undertaken and a contribution to the Mayoral Schools Challenge was made.
- Awards - won the overall award for proactively promoting and creatively engaging the community in mobile phone recycling and collection (350 kg in 2009-10) at the Mobile Muster Local Government Awards.
- Lifecycle Program - Life Cycle and Second-hand Saturday collections in Cessnock LGA resulted in 9.1 tonnes diverted from landfill. E-waste recycling conducted 4 collections during the year with residents recycling 32.2 tonnes of material an average of 39.7 kilos per car.

For more information on Hunter Resource Recovery go to www.hrr.com.au.

Clean Up Australia Day

Approximately 220 community volunteers took part in Clean up Australia Day activities on Sunday 7th March 2010 across 22 registered sites in the Cessnock Local Government Area (LGA), cleaning up roadsides, parks, bushland and waterways. In addition, 6 schools across the LGA registered for participation in the schools Clean up Day activities conducted on 5th March 2010.

This year 32 tonnes of rubbish was collected and taken to the waste depot as a direct result of Clean up Australia Day activities. The total waste received at the waste depot on the day was 125 tonnes (up 23 tonnes on 2009). As in previous years residents getting into the Clean Up spirit were able to take waste to the depot free of charge.

drumMUSTER Collection

During 2009-10 the annual drumMUSTER program was held in May 2010, with a total of 1,976 drums being collected ready for recycling. For further information on the drumMUSTER program go to www.drummuster.com.au



Waste as Art

This year's Waste as Art Competition ran from February until June 2010. The event attracted 158 entries (6 from Cessnock LGA) which were displayed at Maitland Town Hall from 5th June 2010 till 24th June 2010 with over 561 people viewing the display. In addition this year's exhibition included a schools day on 16th June 2010 which was attended by 52 students and 9 teachers from 8 Hunter schools (1 from Cessnock LGA).

Adopt-a-Road Program

During 2009-10 new 3-year agreements were entered into with most sponsors. The program currently has 19 sponsors covering 40kms of roadside throughout the LGA. A program of sign renewal (as some signs are over 15 years old) has been commenced and will be rolled out over the next couple of years.

ILLEGAL DUMPING PROGRAMS

During 2009-10 Council received 35 reports of illegal waste dumping on public land.

LIQUID WASTE MANAGEMENT

Wastewater Treatment Plants (WWTP)

Hunter Water operates five wastewater treatment plants in the Cessnock LGA and treated 3,930 ML of effluent during 2009-10. Of the wastewater treated in the Cessnock LGA 7% was reused for irrigation.

Refer to Water Section for further information on volumes of wastewater treated.

On-site Sewerage Management

During 2009-10, Council's On-site Sewerage Management (OSSM) Officers have undertaken the following inspection and regulatory functions:

- A comprehensive internal audit of all systems within the LGA to provide an accurate record of all on-site sewage management systems and their risk classifications. This process has resulted in a more accurate record of system numbers and risk classification. For example, some systems were previously not on Council's register and a number of systems were found to be duplicated on Council's register.
- 997 inspections have been completed. At the completion of the inspection an inspection report is provided to the occupant outlining the results of the inspection. Matters of a more serious nature may receive a written request for actions or an order.
- 7 formal documents (orders or notices of intentions to serve an order) have been served directing that certain works to be undertaken.
- 24 complaints relating to wastewater effluent discharge and odours from OSSM systems have been received and investigated.
- 16 complaints relating to stormwater discharge have been received and investigated.
- Continually liaised with Hunter Water Corporation officers in relation to the Kitchener, Ellalong and Millfield priority sewerage schemes, enabling the officers to provide up to date information to residents.
- Undertake pre-purchase inspections of OSSM systems, upon request, providing prospective purchasers with a report on the condition of the system and any works required.
- Regular newspaper advertisements titled 'Lifting the Lid' to provide short messages on the effective operation and management of OSSM systems. The first advertisement in this series was placed in the Advertiser on 4 November 2009. These advertisements will be placed in a variety of local and regional papers on a rotational basis.
- A new residents' kit is currently being developed to distribute to residents who move to a property that has an OSSM system. This kit will provide information sheets and tips on how to effectively manage systems, cost effective options, appropriate cleaning materials, and information on Council's OSSM team its functions and where to go for help.
- Brochures/information sheets are being developed on the effective operation of OSSM systems based on the common problems identified during inspections. These will be placed on Council's website, included in the new residents' kits, and provided as required with inspection reports.
- Within the next twelve to eighteen months packages on safe greywater reuse options will be produced. As part of this package it is intended to provide free information sessions to interested residents. This is a growing area that many residents are showing an interest in and is an effective way to reduce water;

however, it is important that grey water re-use options are implemented in a safe manner to prevent the spread of diseases.

These initiatives have been designed to raise community awareness in regard to OSSM systems so that individuals understand the need to effectively manage them and the adverse environmental consequences of improper management. The initiatives are being specifically tailored to address the problems being encountered by the OSSM officers and in response to feedback from residents.

RESPONSES TO TRANQUILITY AND NOISE ISSUES

During 2009-10, the number of complaints received by Council in relation to noise pollution totalled 273. Complaints were received in relation to a variety of areas, but the greatest majority of complaints related to barking dogs (58%), followed by motor cycles and trail bikes (19%), domestic poultry (7%) and music (6%).

Council is an active member of the Hunter Illegal trail bike riding working group in an effort to reduce the level of complaints and disturbance from motorbike/trail bike usage. This working group has produced a brochure on 'Trail Bike Riding in the Hunter' informing bike riders on a range of safe trail bike riding issues including noise.

LAND

AT A GLANCE

Landuse Change			Data Gaps:
State	Increasing	Continued development with 1,114 development applications, 657 construction certificates and 82 sub-division certificates approved/issued in 2009-10.	Rate of landuse change over the LGA is required.
Pressure	Increasing	Demand for land in LGA is placing increased pressure on undeveloped areas.	
Response	None		
Open Space			Full extent of vegetation clearing in the LGA is required.
State	Decreasing	No change to the area of land under Council Management.	
Pressure	Increasing	Growing population continually demanding open space for year round recreational purposes.	
Response	Unchanged	Continuing to implement Draft Recreation and Open Space Plan.	Amount and rate of soil erosion in the LGA is required.
Vegetation Removal			Review of the current state and extent of river/stream banks is required.
State	Increasing	HCRCMA approved 3 clearing applications during 2009-10 covering 18 hectares. Other clearing (i.e. for 1(a) rural zone or development) is unknown but assumed to be increasing.	
Pressure	Increasing	Demand for land in LGA is placing increased pressure on clearing land for other purposes.	
Response	Limited	Landcare groups are active in many areas and several strategies/plans have been developed and are being implemented.	
Soil Salinity			
State	Unknown	Salinity identified as an issue in Black Creek and Wollombi Brook Catchments.	
Pressure	Unknown	Little data is available on salinity in the LGA.	
Response	None		
Contaminated Land			
State	Unknown	Full extent of contaminated land unknown.	
Pressure	Unknown	Activities posing contamination risk regulated by Protection of the Environment (Operations) Act 1997.	
Response	Limited	Clean up of Hebburn No. 2 Colliery site.	
Soil Erosion			
State	Increasing	Soils mapping GIS layer provides information to staff and community.	
Pressure	Unknown	No data available on amount of soil lost to erosion in the LGA annually.	
Response	Improving	HCRCMA and community groups implementing several strategies and plans to address this issue.	

RESPONSES TO LANDUSE ISSUES

DEVELOPMENT ACTIVITIES

During 2009-10, Cessnock City Council received 1,114 Development Applications with a total value of \$829,218,060. A further 657 applications were determined for Construction Certificates, and 82 applications for Subdivision Certificates.

LOCAL ENVIRONMENT PLAN

Council resolved on 23 June 2010 to re-exhibit the proposed changes to the draft Local Environment Plan for a period of four weeks commencing 7 July 2010.

OPEN SPACE

Recreation

Council's Recreation and Open Space Strategic Plan (2009) aims to guide the provision of recreation and open space areas within the LGA. Some of the key issues addressed in the Plan are integration of cycleways/footpaths; addressing high levels of obesity and heart disease in the LGA; guidelines and minimum standards/sizes for parks and sporting facilities and rationalisation of open space.

VEGETATION CLEARING

During 2009-10, the Hunter Central Rivers Catchment Management Authority (HCRCMA) approved 3 clearing applications covering 18 hectares.

Native Vegetation Regulation

Information on Property Vegetation Plans (PVP's) from the HCRCMA reported 3 PVP's undertaken in the Cessnock LGA during 2009-10.

LANDCARE ACTIVITIES

Refer to Biodiversity Section for detailed information for Landcare Activities.

FIRE HISTORY AND MANAGEMENT

In 2009-10 there were 370 incidents of bushfires in the Cessnock LGA (of which 81 affected areas greater than 1 hectare) making a total of 903 hectares lost to fire. There were 53 hazard reductions carried out (12 by fire and 41 by mechanical means) treating 271 hectares. There were 13 total fire bans.

HCCREMS REGIONAL SOILS MAPPING PROJECT

In 2008, soils consultants and the Department of Environment and Climate Change were commissioned under the HCCREMS program to undertake production of a seamless soil landscapes map for the entire region, and to derive soil facet (topographical subdivisions of soil landscapes) modelling for the region. This work was completed in October 2009 and the outputs will underpin a range of projects including vegetation modelling, land capability mapping and identification of significant agricultural lands.



AIR (ATMOSPHERE)

AT A GLANCE

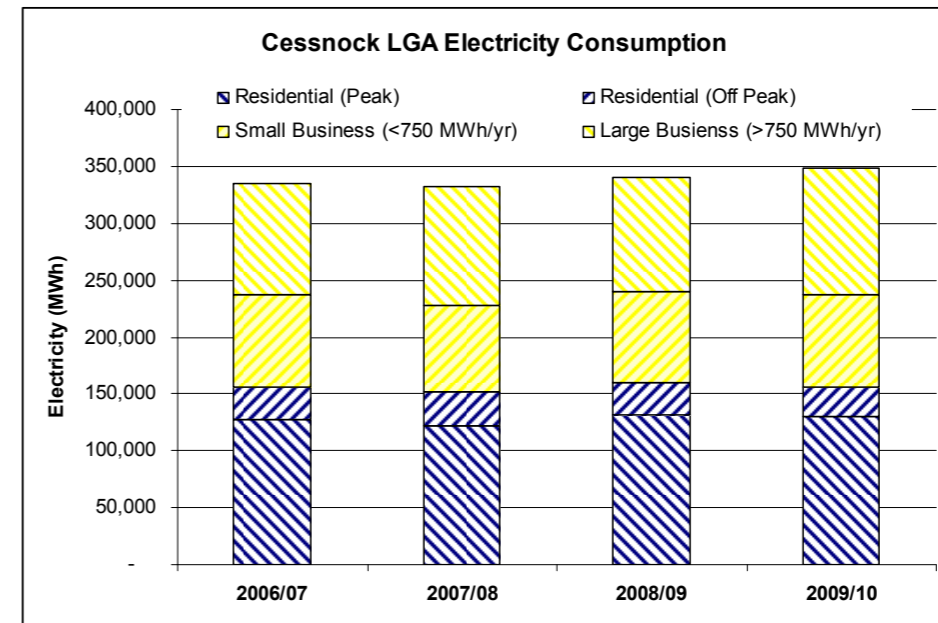
Greenhouse Gas Emissions			Data Gaps: No information is available on the amount of greenpower consumed in the LGA. Further information on travel to work is required. Information on volume of pollutants produced in bushfires or wood fires is unknown. Impact of Upper Hunter coal burning power stations on Cessnock LGA air quality unknown. More data required on impact of indoor air quality. Recommendations: Council fund initiatives that have outcomes aimed at savings in energy, water, waste, etc.
State	Increasing	348,834 MWh of electricity was consumed in the LGA (an increase of 2.3% on 2008-09).	
Pressure	Increasing	Electricity consumption is assumed to increase in line with population growth. Heavy reliance on motor vehicles for transportation.	
Response	Limited	Council Energy Improvement Program, REMS Climate Action Project and pathways program being implemented to address this issue.	
Diffuse Air Pollution Sources			
State	Limited	36 odour complaints (20 from Chicken sheds) reported to Council. National Pollutant Inventory identified 75 substances from 11 sources.	
Pressure	Unknown	Difficult to identify sources of pollution and odour but assumed to be increasing with development growth.	
Response	Poor	No resources identified to undertake comprehensive monitoring or analysis of air pollution or odour issues.	
Point Source Air Pollution			
State	Limited	RFS reported 81 bushfires covering areas greater than 1 ha and conducted 12 hazard reduction burns covering 227 ha.	
Pressure	Unknown	Impacts of domestic heating and burning associated with agriculture or forestry unknown.	
Response	Poor		
Indoor Air Quality			
State	Unknown	51 regulated air-conditioning systems in the LGA.	
Pressure	Unknown	Increased reliance on air conditioning systems expected as temperatures continue to rise from climate change.	
Response	Limited	Council maintains a register of regulated air cooling systems and conducts routine inspections of commercial facilities, tourist and wine production premises.	

RESPONSES TO GREENHOUSE GAS EMISSIONS ISSUES

ENERGY CONSUMPTION

During 2009-10, Energy Australia reported 348,834 MWh of electricity was consumed in the Cessnock LGA. There was a 2.7% drop in residential consumption (compared to 2008-09) from a drop in Off Peak use which is primarily for storage hot water systems which may indicate a move away from this type of hot water system to more efficient solar and gas systems. There was a 6.7% increase in business electricity consumption which is mainly for large business users. Figure 8 compares 2009-10 electricity consumption with the past 3 years consumption.

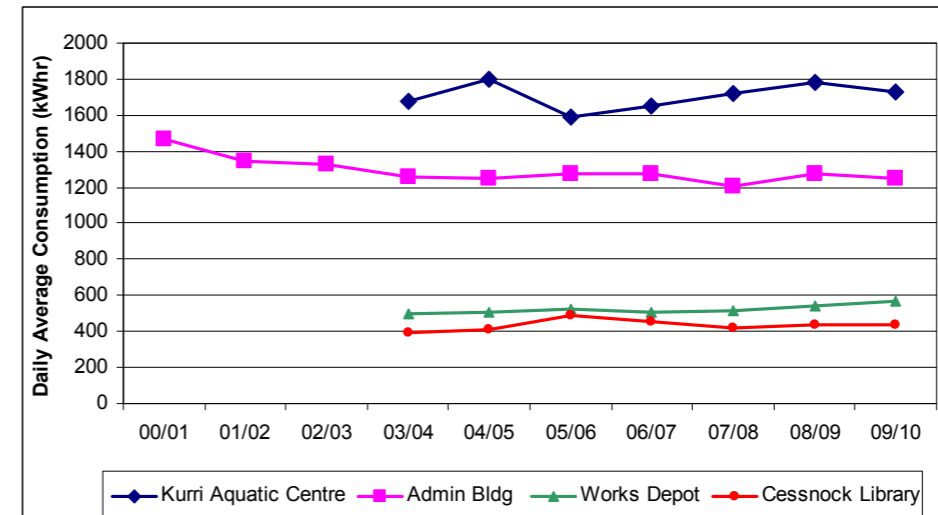
Figure 8: Cessnock LGA Electricity Consumption



CESSNOCK COUNCIL ENERGY IMPROVEMENT PROGRAM

A summary of the electricity consumption data since the Energy Improvement Program commenced for Council's 4 highest consumers is provided in figure 9.

Figure 9: Council Energy Consumption History



Council resolved on 5 August 2009 to participate in supply of electricity for major sites and street lighting through the Regional Procurement Division of Hunter Councils. As a result of the tender Council has been able to purchase 10% greenpower and achieve combined savings in the order of \$51,000 over the term of the contract (1 July 2010 to 31 December 2012).

Table 1: Council Energy Consumption History

Year	Admin Building	Works Depot	Cessnock Library	Kurri Aquatic Centre
2000/01	1,470	-	-	-
2001/02	1,346	-	-	-
2002/03	1,326	-	-	-
2003/04	1,255	498	396	1,674
2004/05	1,247	508	412	1,796
2005/06	1,272	520	486	1,587
2006/07	1,272	503	457	1,652
2007/08	1205	512	420	1722
2008/09	1279	541	441	1781
2009/10	1251	568	435	1727

Council is responsible for a large fleet of vehicles that are required to assist Council in carrying out all its functions. The fleet varies from 4-6 cylinder cars, four wheel drives, light plant and heavy vehicles. In 2009-10 the car fleet travelled a total of 2,587,965km averaging 10L/100km.

Table 2: Council Fuel usage across vehicle fleet

Type of Fuel	2009-10 Consumption
Unleaded	232,519L
Diesel	14,179L
LPG	-
E10	11,945L

Council is working towards reducing fuel consumption by encouraging staff to swap their larger 6 cylinder lease back vehicles with smaller more fuel efficient 4 cylinder vehicles.

RESIDENTIAL REBATE PROGRAM

From the 30 June 2009 to 31 March 2010, 786 rebates for hot water systems and 144 rebates for ceiling insulation were paid by the Department of Environment, Climate Change and Water NSW (DECCW) for the Cessnock Local Government Area.

HCCREMS - CLIMATE ACTION PROJECT

Regional Forum

A successful regional forum was convened by HCCREMS in August 2009 to assist Councils with an understanding of the potential implications of National Greenhouse and Energy Reporting Scheme (NGERS) & the Carbon Pollution Reduction Scheme (CPRS) on local government. The event included a particular focus on landfill facilities, the most likely area of exposure. A total of 53 delegates participated in the Forum representing a wide range of council roles.

Climate Change Research

HCCREMS have completed detailed climate profiles for each of the coastal, central and western sub regional climate zones. These profiles document both the historic and projected climate trends for each of these zones and effectively demonstrate the variability that exists across the region.

Individual LGA climate profiles have been completed for all HCCREMS member councils. These profiles have been developed to further increase understanding of existing and projected climate change at an LGA level. Each profile provides an overview of the key results generated by the research and the process by which they were generated. In particular, the key results in regard to both historical climate variability and projected climate change as they relate specifically to each LGA are provided.

Hunter Wine Industry Case Study

The outcomes of the Case Study on the Hunter Wine Industry developed under the Regional Climate Change Research Program were officially launched at the Hunter Valley Table Lunch on 16th October 2009.

Regional Risk Assessment and Adaptation Project

Funded through the Commonwealth Government's Local Adaptation Pathways Program and the NSW Environmental Trust, the project has 2 focuses:

- Rural Councils Project (Taree, Gloucester, Dungog, Upper Hunter, Singleton, Maitland, Cessnock and Muswellbrook councils):
 - identifying individual organisational risks arising from climate change and developing adaptation strategies in response to these; and
 - identifying areas of common risk across participating councils and determining actions and priorities for collaboration, cross border adaptation planning and implementation.
- Coastal Councils Project (Taree, Great Lakes, Port Stephens, Newcastle, Lake Macquarie, Wyong and Gosford councils):
 - identifying and documenting areas of common risk across coastal councils; and
 - identifying the nature and focus of actions and priorities for collaborative and consistent cross border adaptation responses.

A significant data collation process was undertaken with councils and state government agencies from November 2009 to March 2010. This process acquired spatial datasets and other relevant information to inform the impacts analysis and climate scenario planning process which informs the risk assessment completed by councils.

Three cross council climate change adaptation planning workshops were delivered during May 2010. The adaptation workshops were structured around key themes or issues that reflect the risks that were identified by Councils and will identify adaptation responses for the risks rated 'Extreme' and 'High'. The workshops were regional events that encouraged information sharing and collaboration between councils. The workshop outcomes will be integrated into both the individual and regional risk assessment and adaptation plans being prepared for councils.

Focus on Energy Reduction

Six energy meters for loan have been placed in Cessnock and Kurri Kurri Libraries.



RESPONSES TO AIR QUALITY ISSUES

OUTDOOR AIR QUALITY

Diffuse Source Air Pollutants

During 2009-10 Council received 21 reports of air pollution incidents. Of these complaints 13 related to backyard burning and 8 related to dust issues including dust from private and public property and roads.

During 2009-10 Council received 36 complaints in relation to odour, 20 of these complaints were in relation to odours from chicken sheds.

Woodsmoke Reduction Program

Council received 13 complaints in relation to woodsmoke with Council Officers working with all parties to resolve the issues, no notices or orders were issued. There was not woodsmoke educational activities undertaken during 2009-10.

POINT SOURCE AIR POLLUTANTS

During 2009-10, there were 81 bushfires affecting more than 1 hectare of land in the Cessnock LGA.

NATIONAL POLLUTION INVENTORY

Within the Cessnock LGA, 75 substances were identified from 11 sources. More information on the National Pollutant Inventory can be found at www.npi.gov.au.

INDOOR AIR QUALITY

On 1st July 2010 Council approved the adoption of a Legionella Management Plan to assist Council in the coordination, preparation, planning and operation of its resources to control Legionnaires' disease, and to revoke Councils previous policy for the Installation and Maintenance of Regulated Systems for Control of Legionnaires Disease. The Legionella Management Plan supersedes Council's Policy L14.1 'Installation and Maintenance of Regulated Systems for Control of Legionnaires Disease'. There are currently 51 cooling towers registered in the Cessnock LGA.

WATER AT A GLANCE

Water Quality			Data Gaps:
State	Fair	LGA water quality varies within each catchment (affected by the level and type of development). 15 Waterwatch groups monitored 26 sites and reported 137 datasets. 19 complaints to Council on water quality (15 regarding wastewater/effluent discharges) were received.	Verified water quality data is required in the LGA to accurately assess state.
Pressure	Increasing	Increasing development for a variety of landuses in the LGA and continued land degradation affects water quality.	Information on environmental flows of LGA waterways is unknown - including impacts of landuse change and management of runoff.
Response	Improving	Hunter Water and Community water quality monitoring programs. Several strategies/plans are being implemented at selected sites.	Information on unlicensed water extractions and farm dams and their impacts is unknown.
Wastewater			Recommendations:
State	Improving	WWTP's monitor water quality above and below discharge points. Continued reliance on on-site effluent treatment.	A register of GPT's in the LGA be established providing the location, type, maintenance schedule and materials collected data for reporting and planning purposes.
Pressure	Increasing	Much of the LGA is rural and as such is outside the reach of the reticulated sewerage system. As the demand for rural and rural-residential development continues to increase additional pressure will be placed on on-site effluent treatment systems.	
Response	Fair	14 NSW EPA licensed premises for water discharge. WWTP's monitor water quality above and below discharge points.	
Ground and Surface Water			
State	Unknown	Little data exists on the current groundwater quality. Ground and surface water extractions are regulated by DNR through licensing. Currently 250 surface water licences and 280 groundwater licences.	
Pressure	Increasing	Groundwater quality is under continual pressure from agricultural activities and on-site effluent disposal. Changing land uses from grazing to viticulture are increasing pressure on water resources.	
Response	Limited	Water tank and washing machine rebates and HCCREMS Regional Water Project are addressing some surface water issues.	
Stormwater			
State	Fair	All new developments must meet requirements in relation to stormwater management.	
Pressure	Increasing	In line with increasing development.	
Response	Improving	Council Stormwater Management Plan and HCCREMS Regional Water Program	

RESPONSES TO WATER QUALITY ISSUES

WATER QUALITY

The Hunter Water Corporation (HWC) conducts a water quality monitoring program to assess the impact of point sources of wastewater pollution from their wastewater treatment works on the aquatic environment. This data has been used to assess the compliance of Cessnock's waterways to ANZECC and NHMRC water quality guidelines (see Appendix 1) for potable water supply, the maintenance of aquatic ecosystems and agricultural uses (see Table 3). The mean of the data set for each parameter has been used as the value to assess the water quality guidelines against.

Table 3: Water Quality Monitoring Data 2007-08 for upstream and downstream of HWC wastewater treatment plants. Updates currently not available.

Water Quality Sampling Site	Water Quality Parameter						
	pH	Turbidity	Conductivity	Nitrate Nitrogen	OP	Faecal Coliforms	Chlorophyll-a
Anvil Creek – Upstream							
Potable Water Supply	-	-	-	√	-	-	X
Agriculture	-	-	-	√	-	-	*
Maintenance of aquatic ecosystems	-	-	-	√	-	*	√
Anvil Creek – Downstream							
Potable Water Supply	-	-	-	√	-	-	X
Agriculture	-	-	-	√	-	-	*
Maintenance of aquatic ecosystems	-	-	-	√	-	*	√
Congewai Creek – Upstream							
Potable Water Supply	√	-	X	-	-	X	-
Agriculture	√	-	√	-	-	√	*
Maintenance of aquatic ecosystems	√	-	√	-	-	*	-
Congewai Creek – Downstream							
Potable Water Supply	√	-	X	-	-	X	-
Agriculture	√	-	√	-	-	√	*
Maintenance of aquatic ecosystems	√	-	√	-	-	*	-
Swamp Creek – Upstream							
Potable Water Supply	√	X	X	-	-	X	X
Agriculture	√	√	X	-	-	√	*
Maintenance of aquatic ecosystems	√	√	√	-	-	*	√
Swamp Creek – Downstream							
Potable Water Supply	√	X	X	-	-	X	√
Agriculture	√	√	X	-	-	X	*
Maintenance of aquatic ecosystems	√	√	√	-	-	*	√
Swamp Creek – VAW/Hydro							
Potable Water Supply	√	-	X	√	√	X	√
Agriculture	√	-	X	√	√	√	*
Maintenance of aquatic ecosystems	√	-	√	√	√	*	√
Black Creek – Upstream							
Potable Water Supply	√	X	X	√	√	X	X
Agriculture	√	√	X	√	√	X	*
Maintenance of aquatic ecosystems	√	√	X	√	√	*	√
Black Creek – Downstream							
Potable Water Supply	√	X	X	√	X	X	√
Agriculture	√	√	X	√	X	√	*
Maintenance of aquatic ecosystems	√	√	√	√	X	*	√

√ denotes compliance with ANZECC and NHMRC guidelines * denotes no guideline available
 x denotes non-compliance with ANZECC and NHMRC guidelines - denotes information unavailable

WATER POLLUTION COMPLAINTS/INCIDENTS

Council received 19 water pollution incident reports in 2009-10 representing a 50% reduction on the water pollution complaints received by Council in 2008-09. 15 of the 19 water pollution incidents were related to wastewater, effluent or sillage discharge.

WATERWATCH ACTIVITIES

During 2009-10 15 groups (22 in 2008-09) undertook Waterwatch sampling at 26 sites (44 in 2008-09) reporting a total of 137 datasets (125 in 2008-09). A full report of Cessnock LGA Waterwatch group's results for 2009-10 are summarised in Appendix 2. Quality Assurance (QA) Trials did not occur during the 2009-10 year, due to changes to NSW Waterwatch. Waterwatch intend to investigate options for QA Trails in 2010-11

Water Bug Surveys

The results of Water Bug surveys carried out in the Cessnock LGA in 2009-10 are included in Table 4.

Table 4: Water Bug Survey Results for the Cessnock LGA

Group	Stream	Stream Pollution Index	
		Spring 2009	Autumn 2010
Ellalong Public School	Ellalong Lagoon	Fair	-
Abermain Junior Girl Guides	Centenary Park, Abermain	-	Poor
Congewai Public School	Congewai Creek, Congewai	Poor	-
Friends Weretaka	Deadmans Water Holes	Good	-

Phosphorus Day

3 Waterwatch groups in the Cessnock LGA participated in Phosphorous Day in November 2009 taking readings at 6 sites. Readings recorded were in the low range for 5 sites and high range for 1 sites. No sites in the Cessnock LGA were recorded in the very high range.

Catchment Crawl

No Catchment crawls were held in the Cessnock LGA during 2009-10. For further information on NSW Waterwatch visit www.waterwatch.nsw.gov.au and Water Bug Surveys visit www.bugsurvey.nsw.gov.au.



RESPONSES TO WASTEWATER ISSUES

PROTECTION OF THE ENVIRONMENT OPERATIONS ACT, 1997 SCHEDULED PREMISES

In relation to the Protection of the Environment Operations Act 1997 there are currently 14 scheduled premises (for water) within the Cessnock LGA (these are listed in table 5 below).

Table 5: EPA licensed premises (in relation to water pollution) under the Protection of the Environment Operations Act in Cessnock LGA during 2008-09.

Business Name	Activity
Austar Coal Mine P/L	Coal Mining
Hunter Enviro-mining (Operation) P/L	Coal Mining
Cessnock City Council	Landfilling
Cessnock City Council	Herbicide Application
Donaldson Coal P/L	Coal Mining
Enviroking Investments P/L	Waste Storage
HWC – Branxton WWTW	Sewerage Treatment
HWC – Kurri WWTW	Sewerage Treatment
HWC – Cessnock WWTW	Sewerage Treatment
HWC – Kearsley WWTW	Sewerage Treatment
HWC – Paxton WWTW	Sewerage Treatment
Hydro Aluminium Kurri P/L	Aluminium Production
Valley Feeds P/L	Animal Slaughter
Orica Australia P/L	Explosives

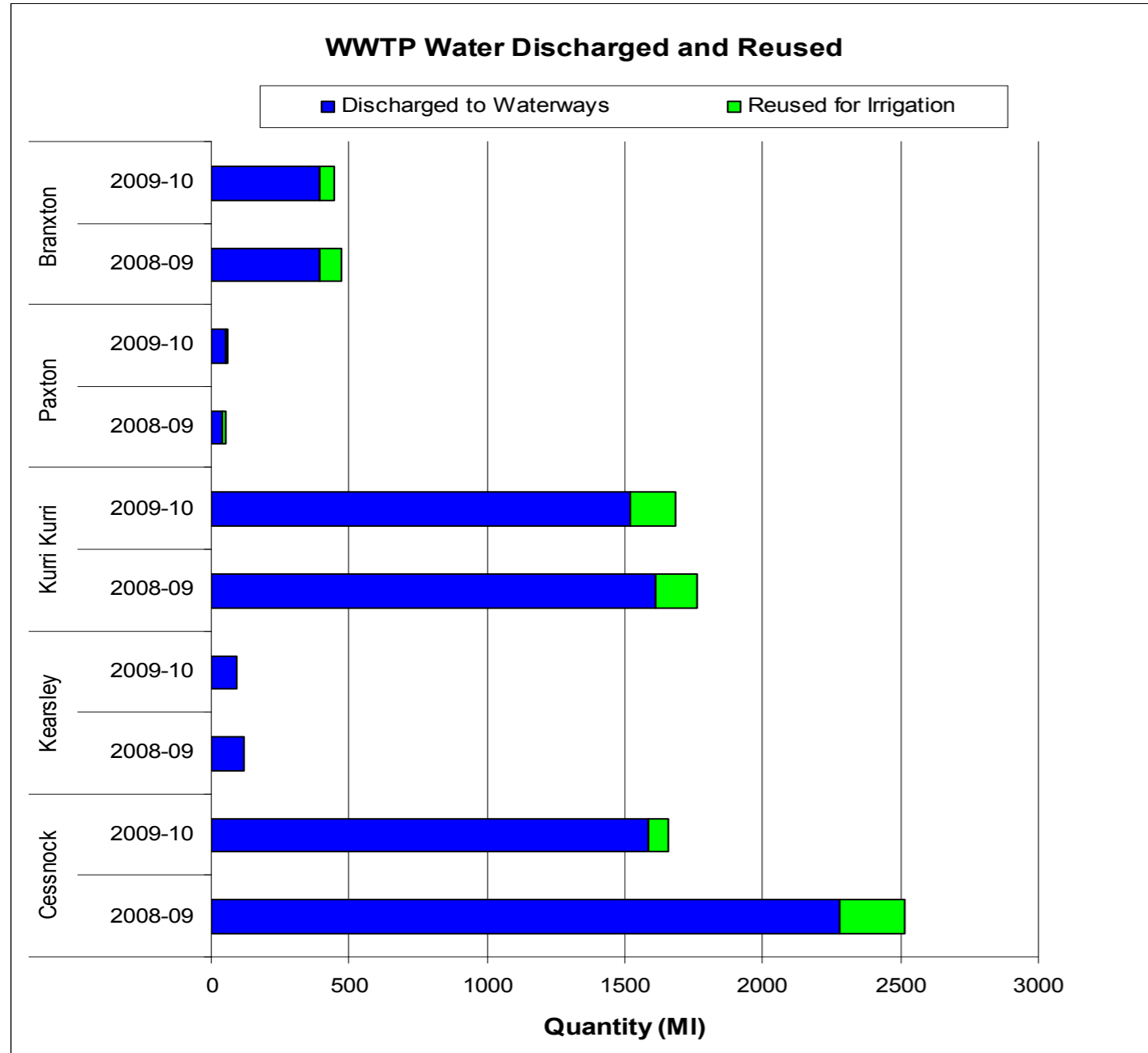
During 2009-10 18 trade waste permits and 10 renewals were issued by Hunter Water in the Cessnock LGA. In addition there were 437 sewerage overflows with 337 being due to tree roots.



CESSNOCK LGA WASTEWATER TREATMENT PLANTS

The effluent discharge for 2009-10 (with comparison to 2008-09) of each of the wastewater treatment plants in the Cessnock LGA is summarised in Figure 10.

Figure 10: Effluent treated and disposed of at HWC wastewater treatment plants during 2009-10 and 2008-09 in the Cessnock LGA.



RESPONSES TO WATER USAGE ISSUES

SURFACE AND GROUNDWATER EXTRACTION

DNR records indicate that there are currently 225 surface water extraction licenses and 280 groundwater extraction licenses in the Cessnock LGA. The most common use for this water is for irrigation, stock and grape vines.

RAINWATER TANK REBATES

During 2009-10, DECCW provided rainwater tank rebates to 92 homes (22 of which were included connection to toilets and washing machines) and Hunter Water issued 102 water tank rebates in the Cessnock LGA. For details of eligibility and amounts of water tank rebates see the DECC website at http://www.hunterwater.com.au/files/DECC_Hunter_Water_Tank_Rebate_form.pdf.

WASHING MACHINE REBATES

From the 30 June 2009 to 31 March 2010, 352 rebates have been paid by DECCW for the Cessnock Local Government Area. (Note: The Washing Machine Rebates program ceased on 30th June 2010.)

HCCREMS FOCUS ON WATER SENSITIVE URBAN DESIGN PROGRAM

A regional MUSIC (Model for Urban Stormwater Improvement Conceptualisation) modelling training course was delivered on 16 September to Council DA Assessors and staff from Water Authorities. The training provided staff with the skills and knowledge to determine if the MUSIC models submitted with Development Applications are correct modelling and will actually result in the outcomes they indicate, or if the models are flawed and may then create environmental incidents.

Water Sensitive Urban Design issues are being incorporated into workshop sessions being delivered to the region's Compliance Officers through the Compliance Network. Sessions on how to develop enforceable conditions will utilise WSUD Devices as one of the topic areas covered.

HCCREMS is working with a range of staff stakeholders from councils to design and deliver a capacity building initiative on key issues associated with the lifecycle maintenance and management of Water Sensitive Urban Design (WSUD) assets – with a focus on constructed wetlands.

Discussions are being held with key staff from all councils to map out the objectives for the review and update of regional guidance for WSUD and Sustainable Urban Water Management (SUWM). The review will include consideration of the updates needed to the WaterSmart Model Planning Provisions and Water Smart Practice Notes.

BIODIVERSITY

AT A GLANCE

Terrestrial Biodiversity			Data Gaps:
State	Declining	Various developments pose threats to terrestrial biodiversity in the LGA. Currently listed under the Threatened Species Conservation Act 1995 for the LGA are 72 fauna species, 18 flora species, 1 endangered population and 9 endangered ecological communities. CMA approved 18 hectares of clearing.	Information required on impacts of habitat fragmentation (i.e. fauna corridors, core koala habitat) and rate of vegetation clearing.
Pressure	Increasing	Demand for rural, rural residential, industrial and urban expansion as a result of population growth increasingly affects biodiversity.	Long-term monitoring of riparian vegetation required to develop management strategies.
Response	Poor	Landcare programs, Threatened Flora of Lower Hunter Recovery Program, REMS Roadside Environmental Management and Vegetation Management programs are having effects.	Data on aquatic species composition and distribution is unknown.
Aquatic Biodiversity			
State	Unknown	Little is known of the aquatic biodiversity in the LGA.	Wetlands mapping in the LGA, condition of flora and fauna and associated impacts/ threats (i.e. aquatic noxious weeds, stormwater, effluent, industrial processes, cattle grazing) is unknown.
Pressure	Increasing	Increasing development is placing pressure on aquatic ecosystems through disturbance, pollution and changes in water quality and quantity.	Information on the impact of feral animals on local fauna populations is unknown.
Response	Limited	Salvinia removal programs are continuing to address this menace but are limited by resources.	The full distribution of weed species and their extent of competition with native species is unknown.
Introduced Flora and Fauna			
State	Unknown	Complete numbers of introduced species are unknown. Preliminary list of 25 Regional Weed of Significance established.	
Pressure	Increasing	Development in the LGA is increasing the incidence of weed infestation and introduction of feral animals into natural bushland.	
Response	Fair	Council employs 2 Weeds Officers and participates in many regional weed programs as well as receiving grant funding to initiate programs.	

RESPONSES TO BIODIVERSITY ISSUES

THREATENED FAUNA SPECIES

A complete list of threatened fauna species within the Cessnock LGA is contained in Appendix 3 and is available on the NSW Threatened Species website (www.threatenedspecies.environment.nsw.gov.au). Since 1980 there have been 2,111 records comprising 62 threatened fauna species placed on NPWS Atlas of NSW Wildlife. 51% of these sightings (covering 45 species) have been recorded in the last two years.

THREATENED FLORA SPECIES

A complete list of threatened flora species within the Cessnock LGA is contained in Appendix 3 and is available on the NSW Threatened Species website (www.threatenedspecies.environment.nsw.gov.au). Since 1980 there have been 3,710 records comprising 23 threatened fauna species placed on NPWS Atlas of NSW Wildlife. 88% of these sightings (covering 21 species) have been recorded in the last two years.

DECCW CESSNOCK BIODIVERSITY CONSERVATION PROGRAM

DECCW is currently preparing a biodiversity conservation program for the valley floor region of the Cessnock Local Government Area. The program aims to address the conservation needs of all 65 threatened species and ecological communities in the area. By identifying clear objectives it is hoped to encourage landholders, individuals, community groups, schools and other government departments to initiate and become involved in threatened species recovery projects. The project will be delivered initially through a poster and associated project website.

HABITAT FRAGMENTATION AND CLEARING

During 2009-10, the Catchment Management Authorities approved three clearing applications covering 18 hectares.

INTRODUCED SPECIES - WEEDS

During 2009-10, Council's Weeds Officers received 65 customer requests regarding weed issues, ranging from requests for plant identification to control works. Councils Weeds Officers inspected 363 properties and 15 section 18 Weed Control Notices were issued.

The 2009-10 Council weed control program treated the following weeds throughout the year:

- Blackberry (70)
- African Boxthorn (15)
- Pampas Grass (5)
- Green Cestrum (65)
- Mother of Millions (14)
- Salvinia (9)
- Lantana (46)
- Spiny Emex (7)
- Smooth Tree Pear (2)
- Tiger Pear (1)
- Patersons Curse (10)
- Water Hyacinth (4)
- Bathurst Burr (1)
- Crofton (4)
- Prickly Pear (2)



As well as these activities, Council's Weeds Officers:-

- Continued a program of community education on weeds through making available a poster on major weeds of the area and printed fact sheets at Councils administration building and libraries. These are also available on Councils website.
- Developed new promotional material as handouts for the General public as a means of education on the importance of weed identification and control including: key rings, ruler's, erasers, drink holders and a calico bag, all available from customer services.

Regional Weed Strategies

In September 2009, Industry & Investment NSW (formally NSW Department of Primary Industries) announced it will restructure the way in which it allocates weed funding to local control authorities. Fundamentally, the DII are now allocating their annual funding to Local Control Authorities (LCAs) on a regional basis. Key points are:

- The state will be divided into 8 regions.
- LCAs and Weeds Authorities will no longer submit grant applications to, or obtain funding from, DPI annually.
- Each region will submit only one funding application to DPI.
- Funding applications will need to incorporate all previous individual funding requests.
- LGAs are still responsible for implementing the Noxious Weeds Act, but will no longer be funded at the LCA level.
- The new funding arrangements will come into place as of the 2010-11 funding round.

Annual funding for local and regional activities is now only available on the basis of:

- A 5 Year strategic, landscape based, regional weeds management plans.
- Identification of a "host" regional organisation to administer a single funding contract on behalf of groups of councils.

A strategic, landscaped based Regional Weed Management Strategy has been developed for the whole of the Hunter and Central Coast region. The strategy has undergone preliminary expert review, and is currently being finalised for formal endorsement and release. Implementing the strategy will be delivered by two sub-regional programs:

- One managed and delivered with the associated allocation of annual DII funding by the established Upper Hunter Weeds Authority.
- One managed and delivered with associated allocation of annual DII funding by the coalition of Lower Hunter & Central Coast Councils, with Hunter Councils (Environment Division) being the host organization.

The Hunter & Central Coast Regional Weeds Strategy aims to provide the overriding strategic direction for the delivery of regional weed management initiatives at the landscape scale through fostering co-operation in planning and operational activities across landscapes, land management boundaries (irrespective of tenure) and local control authority (Council) jurisdictions and so the strategy identifies the following five (5) key objectives:

1. Ensure effective weed management co-ordination & collaboration across land management responsibilities and land tenures to reduce the impact of weeds in the region.
2. Identify and prioritise knowledge gaps to improve effective management and scientific understanding of weed issues in the region.
3. Strategically increase the awareness and capacity of community stakeholders to undertake effective and co-ordinated weed management initiatives across the region.
4. Promote early identification and treatment of new weed incursions, and prioritise and maximise resources to reduce the impact of high priority weeds on natural assets throughout the region.
5. Improve and standardise data capture techniques, monitoring, mapping, reporting and evaluating processes.

FIRE AND FUEL REDUCTION

During 2009-10 there were 370 incidents of bushfires in the Cessnock LGA (of which 81 affected areas greater than 1 hectare) making a total of 903 hectares lost to fire. There were 53 hazard reductions carried out (12 by fire and 41 by mechanical means) treating 271 hectares. There were 13 total fire bans.

BIODIVERSITY WEBPAGE

Council maintains and annually updates a page on its website containing information on local biodiversity. This is able to be used by the community as reference material on local ecology.

LANDCARE ACTIVITIES

The following reports have been provided from Landcare groups operating in the Cessnock LGA: Some Landcare Groups have not provided updates on their activities for 2009-10.

Abermain Landcare

- Actively involved in working with Cessnock Council on mitigation plans for the future, with representation on the Flood Plain Management Plan Committee.
- Black Creek, Swamp Creek, Wallis Creek and Wollembi Brook clearing and dredging of creeks, bank reinforcement, assessment of surviving vegetation and revegetation needs are all being addressed by the Flood Plain Management Committee.
- Maintaining control of giant reed.
- Maintaining remaining site not washed away in June 2007 flood.
- Monitoring progress of proposed works on Swamp Creek for flood mitigation such as in-stream vegetation management and channelization.

Trees on Farms Mt. Vincent Landcare Group

- Wildlife Corridor Links has seen over 600 trees planted in Spring 2009 to add to the wildlife corridor which links remnant Woodland and Rainforest areas from Bow Wow Gorge to the Wattagans.
- The Group continues to work with local landholders on weed control, particularly Lantana eradication.
- Provides training to landholders on Splatter Gun use techniques.

Kurri Kurri Landcare

- Working to ameliorate damage to creeks and rivers by mining waste through the Landcare Water Quality Initiative.
- Repairing salt ravaged land at Deakin Street Kurri Kurri - a process of using community lawn clippings and labour has been most successful.
- Tree planting and grass stabilisation at Fourth St Weston.
- Removal of Tree of Heaven infestation in Mitchell Ave and park manufacture is proceeding.
- Weekly testing of the flood alarms installed at Weston and Abermain.

REGIONAL ROADSIDE ENVIRONMENT PROGRAM

Roadside environments in the Hunter region provide habitat for at least 28 threatened flora species, adjoin 480km of Ramsar listed wetlands and contain 7 ecologically endangered vegetation communities. The Regional Roadside Environment Program focuses on the design and implementation of a regional roadside marker system to identify and protect ecologically significant roadside environments across the region. The marker system aims to assist councils in meeting their state and commonwealth legislative responsibilities and reduce the risks associated with unintentional damage to such environments arising from routine maintenance or upgrade activities.

During 2009-10 the Roadside Marker Project:

- Completed field survey work to confirm the location of 250 ecologically sensitive roadside environments across the 14 HCCREMS council areas.
- Designed and produced 'roadside marker' stickers and Field Guides. Colour coded stickers placed on existing or new white marker posts will alert council staff of the presence and nature of ecologically sensitive roadside sites, and provide a clear coded link to the Field Guides specifying appropriate management practices for protecting ecological values. This will significantly reduce the risk to councils of inadvertently damaging threatened species and communities protected by Commonwealth and State legislation.
- Developed training resources and materials for councils on the roadside management program and marker scheme.
- Assisted each council in the installation of roadside markers in their LGA.

HERITAGE AT A GLANCE

Aboriginal Heritage			Data Gaps:
State	Unknown	891 sites are recorded on the NPWS Aboriginal Sites register. The location of sites within the LGA is generally kept confidential for security reasons.	
Pressure	Increasing	Many identified areas are on land not in Aboriginal control and may be subject to disturbance through various activities including agriculture, forestry, mining and urban development.	
Response	Limited	NPWS are the lead agency for protection of aboriginal artefacts.	
Non-Aboriginal Heritage			
State	Stable	There are 4 items of State Environmental Heritage, 33 items of Regional Environmental Heritage and 24 items of Local Environmental Heritage listed in the Hunter Heritage Regional Environmental Plan 1989.	
Pressure	Increasing	Increased development activity places increased pressure on both identified and unidentified sites.	
Response	Increasing	A Heritage Schedule to the draft Cessnock LEP 2009 has been prepared and includes 217 heritage items and 2 conservation areas. Convict Trail Project and local heritage groups actively working on restoration, education and protection of some sites.	



RESPONSES TO ABORIGINAL HERITAGE ISSUES

891 sites recorded on the National Parks and Wildlife Service's Aboriginal Sites Register for the Cessnock LGA. More than half these sites are shelter sites that contain art and/or archaeological deposits.

RESPONSES TO NON-ABORIGINAL HERITAGE ISSUES

HERITAGE LEP AND REVISION OF HERITAGE STUDY

As part of the Comprehensive LEP, Council engaged a consultant to review the 1994 Cessnock Heritage Study and existing Regional and Local Environmental Plan schedules of Heritage Items. This involved a review of 657 potential heritage sites and landscapes. As recommended by the consultant, the heritage schedule of the draft LEP 09 originally contained 252 heritage items and 2 conservation areas. However, following initial exhibition period of the draft LEP 2009, amendments have been made to the heritage schedule, so that it now contains 217 items and 2 conservation areas.

CULTURAL COMMUNITY DEVELOPMENT DOLLAR FOR DOLLAR GRANT PROGRAM

Each year Council provides funding for community arts/cultural projects through the Community Cultural Development Dollar for Dollar Grant Program. Projects assisted with funding through the scheme during 2009-10 include:

- Central Hunter Community Broadcasters – office chairs
- Cessnock Branch CWA – carpet and display cabinet.
- Cessnock City Country Music Festival – sponsorship.
- Cessnock Gem and Mineral Club – bathroom renovations.
- Cessnock Performing Arts Centre – sponsorship Erth's Dinosaur Petting Zoo.
- Coalfields Heritage Group – printing.
- Sculpture in the Vineyards – sponsorship.
- Theatrefest Hunter 2010 – sponsorship.
- Weston Art Show – sponsorship.
- Wollombi Valley Arts Council – sponsorship.

HERITAGE DOLLAR FOR DOLLAR GRANT PROGRAM

Council called for applications under the Heritage Dollar for Dollar Grant Program in 2009 but no suitable applications were received.

THE CONVICT TRAIL PROJECT

In 2009-10 the Convict Trail Project worked with Cessnock City Council to help the council obtain a \$780,000 Jobs Australia Heritage grant to carry out work at Ramsays Leap and Thompsons Bridge and having obtained the grant has been working to support its implementation. A grant received in 2009 for work on the culvert at Ramsays Leap is on hold till the councils work has been completed.

The Convict Trail Project has also been working with council to ensure the cliff face that was cutaway north of Wollombi was fully recorded. Work has been progressing on upgraded Great North Road signage and a multi media tourist presentation for tourist route 33.

The Convict Trail Project has also been involved in LEP discussions relating to Wollombi Valley and in consultations relating to tourism in the region.



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APPENDIX 1 - WATER QUALITY GUIDELINES

	Potable Water Supply	Agricultural Purposes – Irrigation and Stock Watering	Maintenance of Aquatic Ecosystems
pH	6.5 – 8.5	4.5 – 9	6.5 – 9
Turbidity (NTU)	<5	>100	>50
Electrical Conductivity (uS/cm at 250C)c	<280	280 – 800 (up to 5500 for salt tolerant crops)	<1500
Total Dissolved Solids (mg/L)	*	175 – 500	0 – 175
Orthophosphate (mg/L)	<0.05	<0.05	<0.05
Nitrate Nitrogen (mg/L)	<10	<10	<10
Chlorophyll-a (g/L)	<5	*	<20
Faecal Coliforms (count/100mL)	<10	1000	*

* No Guideline Available

Adapted From ANZECC (1992), NHMRC (1987)

APPENDIX 2 – WATERWATCH WATER QUALITY MONITORING RESULTS FOR CESSNOCK LGA 2009-10

Water Quality Sampling Site	Water Quality Parameter			
	pH	Conductivity	Turbidity	Total Dissolved Solids
Congewai Landcare – Congewai Creek (at ford on Congewai Rd) (WBN005) Readings: 2				
Potable Water Supply	x	x	x	-
Agriculture	√	√	√	-
Maintenance of aquatic ecosystems	x	√	√	-
Congewai Landcare – Dam at 'Glenbori' (WBN008) Readings: 2				
Potable Water Supply	x	x	x	-
Agriculture	√	√	√	-
Maintenance of aquatic ecosystems	x	√	√	-
Congewai Landcare – Congewai Creek (along entrance to Reedy Creek) (WBN010) Readings: 2				
Potable Water Supply	√	x	x	-
Agriculture	√	√	√	-
Maintenance of aquatic ecosystems	√	√	√	-
Bellbird Public School – Bellbird Creek (Kendall & Pittman Sts) Readings: 6				
Potable Water Supply	√	x	x	*
Agriculture	√	√	√	√
Maintenance of aquatic ecosystems	√	√	√	x
Congewai Landcare – Congewai Creek (Thursby Rd bridge) (WBN040) Readings: 2				
Potable Water Supply	√	x	x	-
Agriculture	√	√	√	-
Maintenance of aquatic ecosystems	√	√	√	-
Congewai Landcare – Ellalong Lagoon (WBN055) Readings: 2				
Potable Water Supply	√	-	x	*
Agriculture	√	-	√	x
Maintenance of aquatic ecosystems	√	-	√	x
Millfield Public School & Congewai Landcare – Wollombi Brook North Arm at Millfield (WBN070) Readings: 7				
Potable Water Supply	√	x	x	*
Agriculture	√	√	√	√
Maintenance of aquatic ecosystems	√	√	√	x
Wollombi Public School – Wollombi Brook (waterhole) at Wollombi (WBN090) Readings: 6				
Potable Water Supply	√	x	x	*
Agriculture	√	√	√	√
Maintenance of aquatic ecosystems	√	√	√	x
Hunter Community Salinity Monitoring – Wollombi Brook Big Arm, Broke Rd, Wollombi (WBT060) Readings: 7				
Potable Water Supply	√	x	x	-
Agriculture	√	√	√	-
Maintenance of aquatic ecosystems	√	√	√	-
Congewai Landcare & public School - Congewai Creek (bridge 1km south school) (WBN030) Readings: 8				
Potable Water Supply	√	x	x	*
Agriculture	√	√	√	√
Maintenance of aquatic ecosystems	√	√	√	x
Wollombi Nutrient Monitoring Project – Wollombi Brook (Payne's Crossing) (WBT070) Readings: 1				
Potable Water Supply	√	x	x	-
Agriculture	√	√	√	-
Maintenance of aquatic ecosystems	√	√	√	-
Hunter Central Rivers Waterwatch - Wallis Creek (pinramps) (WAL020) Readings: 1				
Potable Water Supply	x	x	x	-
Agriculture	√	x	√	-
Maintenance of aquatic ecosystems	x	√	√	-
Ellalong Public School – Quorrobolong Creek (End Truro St) (WBN050) Readings: 4				
Potable Water Supply	√	x	x	*
Agriculture	√	√	x	√
Maintenance of aquatic ecosystems	√	√	√	x

Water Quality Sampling Site	Water Quality Parameter			
	pH	Conductivity	Turbidity	Total Dissolved Solids
Hunter Central Rivers Waterwatch - Wallis Creek, Mt Vincent (WAL005) Readings: 1				
Potable Water Supply	√	x	x	-
Agriculture	√	√	√	-
Maintenance of aquatic ecosystems	√	√	√	-
Bow Wow Gorge Waterwatch - Wallis Creek, Bow Wow Gorge (WBS090) Readings: 12				
Potable Water Supply	√	x	x	-
Agriculture	√	√	√	-
Maintenance of aquatic ecosystems	√	√	√	-
Laguna Public School – Wollombi Brook, Laguna (WBS100) Readings: 1				
Potable Water Supply	x	x	x	-
Agriculture	√	√	√	-
Maintenance of aquatic ecosystems	x	√	√	-
Endeavour Industries Limited Cessnock, Nulkaba – Black Creek (West & South Sts), Nulkaba Readings: 22				
Potable Water Supply	√	x	x	-
Agriculture	√	√	√	-
Maintenance of aquatic ecosystems	√	√	√	-
Friends of Werakata, Tumblebee and Buttai – Peace Park, Weston (SWA020) Readings: 3				
Potable Water Supply	√	x	x	-
Agriculture	√	x	√	-
Maintenance of aquatic ecosystems	√	√	√	-
Friends of Werakata, Tumblebee and Buttai – Black Hollows Readings: 3				
Potable Water Supply	x	ü	x	-
Agriculture	√	x	√	-
Maintenance of aquatic ecosystems	x	√	√	-
Friends of Werakata, Tumblebee and Buttai – Wallis Creek, John Renshaw Drive (WAL050) Readings: 1				
Potable Water Supply	√	x	x	-
Agriculture	√	x	√	-
Maintenance of aquatic ecosystems	√	√	√	-
Friends of Werakata, Tumblebee and Buttai – Swamp Ck, Kearsley (Abermain 2 Colliery) Readings: 7				
Potable Water Supply	x	√	x	-
Agriculture	√	x	√	-
Maintenance of aquatic ecosystems	x	√	√	-
Friends of Werakata, Tumblebee and Buttai – Swamp Ck (along Willai firetrail) Readings: 1				
Potable Water Supply	√	x	x	-
Agriculture	√	x	√	-
Maintenance of aquatic ecosystems	√	√	√	-
Greta Public School – Anvil Creek Readings: 5				
Potable Water Supply	√	x	x	-
Agriculture	√	x	√	-
Maintenance of aquatic ecosystems	√	x	√	-
Friends of Werakata, Tumblebee and Buttai – Swamp Creek – Deep Creek (Abermain 2 Colliery) Readings: 6				
Potable Water Supply	x	√	x	-
Agriculture	√	x	√	-
Maintenance of aquatic ecosystems	√	√	√	-
Friends of Werakata, Tumblebee and Buttai – Deadmans Waterhole Readings: 5				
Potable Water Supply	√	x	x	-
Agriculture	√	√	√	-
Maintenance of aquatic ecosystems	√	√	√	-
Friends of Werakata, Tumblebee and Buttai – Saltwater Creek Readings: 5				
Potable Water Supply	√	x	x	-
Agriculture	√	x	√	-
Maintenance of aquatic ecosystems	√	√	√	-

√ denotes compliance with ANZECC and NHMRC guidelines * denotes no guideline available
 x denotes non-compliance with ANZECC and NHMRC guidelines - denotes information unavailable

APPENDIX 3 – THREATENED SPECIES LISTINGS FOR CESSNOCK LGA

Flora listed under Schedule 1 (part 1) and Schedule 2 (part 1) Threatened Species Conservation Act 1995 as at 1 July 2010 occurring or predicted to occur in Cessnock LGA.

Scientific Name	Common Name	Classification TSC	Classification EPBC
<i>Acacia bynoeana</i>	Bynoe's Wattle	E	V
<i>Callistemon linearifolius</i>	Nettled Bottlebrush	V	-
<i>Cynanchum elegans</i>	White-flowered wax plant	E	-
<i>Diuris praecox</i>	Rough Double Tail	V	-
<i>Eucalyptus fracta</i>	Broken Back Ironbark	V	-
<i>Eucalyptus glaucina</i>	Slatey Red Gum	V	V
<i>Eucalyptus parramattensis</i> subsp. <i>decadens</i>		V	V
<i>Eucalyptus pumila</i>	Pokolbin mallee	V	V
<i>Grevillea parviflora</i> subsp. <i>parviflora</i>	Small-flowered Grevillia	V	V
<i>Melaleuca groveana</i>	Grove's Paperbark	V	-
<i>Olearia cordata</i>		V	V
<i>Persicaria elatior</i>	Tall Knotweed	V	V
<i>Persoonia hirsuta</i> subsp. <i>nov.?</i> Yengo National Park	Hairy Geebung	E	E
<i>Persoonia pauciflora</i>	North Rothbury Persoonia	E	CE
<i>Prostanthera cineolifera</i>	Singleton Mint Bush	V	V
<i>Rutidosis heterogama</i>	Heath winklewort	V	V
<i>Tetradlea juncea</i>	Black-eyed Susan	V	V
<i>Zannichellia palustris</i>	Aquatic plant – Black Ck	E	-

Ecological Communities listed under Schedule 1 (part 3) and Schedule 2 (part 2) Threatened Species Conservation Act 1995 as at 1 July 2010 occurring or predicted to occur in Cessnock LGA.

Scientific Name	Common Name	Classification TSC
Central Hunter Grey Box – Ironbark Woodland in the NSW North Coast and Sydney Basin Bioregions	Central Hunter Grey Box – Ironbark Woodland	E
Central Hunter Ironbark – Spotted Gum – Grey Box Forest in the NSW North Coast and Sydney Basin Bioregions	Central Hunter Ironbark – Spotted Gum – Grey Box Forest	E
Kurri Sand Swamp Woodland in the Sydney Bioregion	Kurri Sand Swamp Woodland	E
Hunter Lowland Redgum Forest in the Sydney Basin and NSW North Coast Bioregions	Hunter Lowland Redgum Forest	E
Lower Hunter Spotted Gum – Ironbark Forest in the Sydney Bioregion	Lower Hunter Spotted Gum – Ironbark Forest	E
Lower Hunter Valley Dry Rainforest in the Sydney Basin and NSW North Coast Bioregions	Lower Hunter Valley Dry Rainforest	V
River-Flat Eucalypt Forest on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions	River-Flat Eucalypt Forest on Coastal Floodplains	E
Swamp Oak Floodplain Forest of the NSW North Coast, Sydney Basin and South east Corner bioregions	Swamp Oak Floodplain Forest	E
White Box Yellow Box Blakely's Red Gum Woodland	Box-Gum Woodland	E

Populations listed under Schedule 1 (part 2) Threatened Species Conservation Act 1995 as at 1 July 2010 occurring or predicted to occur in Cessnock LGA.

Scientific Name	Common Name	Classification TSC
<i>Leionema lampropyllum</i> supsp. <i>Obovatum</i> population in the Hunter Catchment	<i>Leionema lampropyllum</i> supsp. <i>Obovatum</i> population in the Hunter Catchment	E

Fauna listed under Schedule 1 (part 1) and Schedule 2 (part 3) Threatened Species Conservation Act 1995 as at 1 July 2006 occurring or predicted to occur in Cessnock LGA.

Scientific Name	Common Name	Classification TSC	Classification EPBC
Amphibians			
<i>Crinia tinnula</i>	Wallum Froglet	V	-
<i>Heleioporus australiacus</i>	Giant Burrowing Frog	V	V
<i>Litoria aurea</i>	Green and Golden Bell Frog	E	V
<i>Litoria brevipalmota</i>	Green-thighed Frog	V	-
<i>Litoria littlejohni</i>	Littlejohns Tree Frog	V	V
<i>Mixophyes balbus</i>	Stuttering Barred Frog	E	-
<i>Mixophyes iterates</i>	Giant Barred Frog	E	E
<i>Pseudophryne australis</i>	Red-crowned Toadlet	V	-
Reptiles			
<i>Varanus rosenbergi</i>	Rosenberg's Goanna	V	-
<i>Hoplocephalus bitorquatus</i>	Pale-headed Snake	V	-
<i>Hoplocephalus bungaroides</i>	Broad-headed Snake	V	-
<i>Hoplocephalus stephensii</i>	Stephen's Banded Snake	V	-
Birds			
<i>Anseranas semipalmata</i>	Magpie Goose	V	-
<i>Botaurus poiciloptilus</i>	Australasian Bittern	V	-
<i>Burhunus grallarius</i>	Bush Stone- curlew	E	-
<i>Callocephalon fimbriatum</i>	Gang-gang Cockatoo	V	-
<i>Calyptorhynchus lathami</i>	Glossy Black-Cockatoo	V	E
<i>Climacteris picumnus</i>	Brown Treecreeper	V	-
<i>Circus assimilis</i>	Spotted Harrier	V	-
<i>Ephippiorhynchus asiaticus</i>	Black-necked Stork	E	-
<i>Erythrotriorchis radiatus</i>	Red Goshawk	E	V
<i>Glossopsitta pusilla</i>	Little Lorikeet	V	-
<i>Grantiella picta</i>	Painted Honeyeater	V	-
<i>Haematopus longirostris</i>	Pied Oystercatcher	V	-
<i>Hamirostra melanosternon</i>	Black-breasted Buzzard	V	-
<i>Hieraaetus morphnoides</i>	Little Eagle	V	-
<i>Irediparra gallinacea</i>	Comb-crested Jacana	V	-
<i>Ixobrychus flavicollis</i>	Black Bittern	V	-
<i>Lathamus discolor</i>	Swift Parrot	E	E
<i>Lophoictinia isura</i>	Square-tailed Kite	V	-
<i>Melanodryas cucullata</i>	Hooded Robin	V	-
<i>Melithreptus gularis gularis</i>	Black-chinned Honeyeater (eastern subsp.)	V	-
<i>Neophema pulchella</i>	Turquoise Parrot	V	-
<i>Ninox connivens</i>	Barking Owl	V	-
<i>Ninox strenua</i>	Powerful Owl	V	-
<i>Pachycephala olivacea</i>	Olive Whistler	V	-
<i>Petroica boodand</i>	Scarlet Robin	V	-
<i>Petroica phoenicea</i>	Flame Robin	V	-
<i>Pomatostomus temporalis temporalis</i>	Grey-crowned Babbler (eastern subsp.)	V	-
<i>Ptilinopus magnificus</i>	Wompoo Fruit-Dove	V	-

Scientific Name	Common Name	Classification TSC	Classification EPBC
<i>Ptilinopus superbus</i>	Superb Fruit-Dove	V	-
<i>Ptilinopus regina</i>	Rose-crowned Fruit-Dove	V	-
<i>Pyrrholaemus sagittatus</i>	Speckled Warbler	V	-
<i>Stagonopleura guttata</i>	Diamond Firetail	V	-
<i>Stictonetta naevosa</i>	Freckled Duck	V	-
<i>Tyto novaehollandiae</i>	Masked Owl	V	-
<i>Tyto tenebricosa</i>	Sooty Owl	V	-
<i>Vespadelus troughtoni</i>	Eastern Cave Bat	V	-
<i>Xanthomyza phrygia</i>	Regent Honeyeater	E	E
Mammals			
<i>Chalinolobus dwyeri</i>	Large-eared Pied Bat	V	V
<i>Cercartetus nanus</i>	Eastern Pygmy-possum	V	-
<i>Dasyurus maculatus</i>	Spotted-tailed Quoll	V	-
<i>Falsistrellus tasmaniensis</i>	Eastern False Pipistrelle	V	-
<i>Kerivoula papuensis</i>	Golden-tipped Bat	V	-
<i>Macropus parma</i>	Parma Wallaby	V	-
<i>Miniopterus australis</i>	Little Bentwing Bat	V	-
<i>Miniopterus schreibesii oceanensis</i>	Eastern Bentwing Bat	V	-
<i>Mormopterus norfolkensis</i>	Eastern Freetail Bat	V	-
<i>Myotis adversus</i>	Large-footed Myotis	V	-
<i>Nyctophilus corbeni</i>	Greater Long-eared Bat (south eastern form)	V	V
<i>Petaurus australis</i>	Yellow-bellied Glider	V	V
<i>Petaurus norfolcensis</i>	Squirrel Glider	V	-
<i>Petrogale penicillata</i>	Brush-tailed Rock-wallaby	E	V
<i>Phascolarctos cinereus</i>	Koala	V	-
<i>Phascogale tapoatofa</i>	Brush-tailed Phascogle	V	-
<i>Planigale maculata</i>	Common Planigale	V	-
<i>Potorous tridactylus</i>	Long-nosed Potoroo	V	V
<i>Pteropus poliocephalus</i>	Grey-headed Flying-fox	V	V
<i>Saccolainus flaviventris</i>	Yellow-bellied Sheathtail Bat	V	-
<i>Scoteanoax ruepellii</i>	Greater Broad-nosed Bat	V	-
<i>Thylogale stigmatica</i>	Red-legged Pademelon	V	-
Other			
<i>Petalura gigantea</i>	Giant Dragonfly	E	-

Key Threatening Processes listed under Schedule 3 Threatened Species Conservation Act 1995 as at 1 July 2006 occurring or predicted to occur in Cessnock LGA

- Alteration of habitat following subsidence due to longwall mining
- Alteration to the natural flow regimes of rivers and streams and their floodplains and wetlands (as described in the final determination of the Scientific Committee to list the threatening process)
- Anthropogenic Climate Change
- Bushrock removal (as described in the final determination of the Scientific Committee to list the threatening process)
- Clearing of native vegetation (as defined and described in the final determination of the Scientific Committee to list the key threatening process)
- Competition and grazing by the feral European Rabbit, *Oryctolagus cuniculus* (L.)
- Competition and habitat degradation by Feral Goats, *Capra hircus* Linnaeus 1758
- Competition from feral honey bees, *Apis mellifera* L.
- Forest eucalypt dieback associated with over-abundant psyllids and Bell Miners
- Herbivory and environmental degradation caused by feral deer
- High frequency fire resulting in the disruption of life cycle processes in plants and animals and loss of vegetation structure and composition
- Importation of Red Imported Fire Ants *Solenopsis invicta* Buren 1972
- Infection by Psittacine Circoviral (beak and feather) Disease affecting endangered psittacine species and populations
- Infection of frogs by amphibian chytrid causing the disease chytridiomycosis
- Infection of native plants by *Phytophthora cinnamomi*
- Introduction of the Large Earth Bumblebee *Bombus terrestris* (L.)

- Invasion and establishment of exotic vines and scramblers
- Invasion and establishment of Scotch Broom (*Cytisus scoparius*)
- Invasion and establishment of the Cane Toad (*Bufo marinus*)
- Invasion, establishment and spread of Lantana (*Lantana camara* L. sens. lat)
- Invasion of native plant communities by *Chrysanthemoides monilifera*
- Invasion of native plant communities by exotic perennial grasses
- Invasion of native plant communities by African Olive (*Olea europaea* L. subsp. *cuspidata*)
- Invasion of the Yellow Crazy Ant, *Anoplolepis gracilipes* (Fr. Smith) into NSW
- Loss of hollow-bearing trees
- Loss or degradation (or both) of sites used for hill-topping by butterflies
- Predation and hybridisation by Feral Dogs, *Canis lupus familiaris*
- Predation by *Gambusia holbrooki* Girard, 1859 (Plague Minnow or Mosquito Fish) (as described in the final determination of the Scientific Committee to list the threatening process)
- Predation by the European Red Fox *Vulpes vulpes* (Linnaeus, 1758)
- Predation by the Feral Cat *Felis catus* (Linnaeus, 1758)
- Predation by the Ship Rat *Rattus rattus* on Lord Howe Island
- Predation, habitat degradation, competition and disease transmission by Feral Pigs, *Sus scrofa* Linnaeus 1758
- Removal of dead wood and dead trees

APPENDIX 4 – NOXIOUS WEED DECLARATIONS FOR CESSNOCK LGA

Class	Legal Requirements	All NSW Declaration	Cessnock LGA Declaration
1	<p>State prohibited weeds</p> <p>The plant must be eradicated from the land and the land must be kept free of the plant.</p>	<p>Anchored water hyacinth Black knapweed Broomrapes Chinese violet East Indian hygrophila Eurasian water milfoil Hawkweed Horsetail Hymenachne Karoo thorn Kochia] Lagarosiphon Mexican feather grass Miconia Mimosa Parthenium weed Pond apple Prickly acacia Rubbervine Senegal tea plant Siam weed Spotted knapweed Water caltrop Water lettuce Water soldier Witchweed Yellow burrhead</p>	
2	<p>Regionally prohibited weeds</p> <p>The plant must be eradicated from the land and the land must be kept free of the plant.</p>		<p>Hygrophila Alligator weed</p>
3	<p>Regionally controlled weeds</p> <p>The plant must be fully and continuously suppressed and destroyed.</p>		<p>Giant Parramatta grass Green cestrum Groundsel Bush Mother-of-millions Salvinia]</p>
4	<p>Locally controlled weeds</p> <p>The growth and spread of the plant must be controlled according to the measures in a management plan published by the local control authority.</p>	<p>Blackberry Golden Dodder Harrisia cactus Lantana Prickly pear Prickly pear Rhus</p>	<p>African boxthorn Bathurst/Noogoora/Californian/cockle burrs Bitou bush/ Boneseed Cape tulip Chilean needle grass Columbus Grass Crofton weed Johnson grass Long-leaf willow primrose Mistflower Pampas grass Paterson's curse, Vipers bugloss, Serrated tussock Spiny burrgrass Spiny emex St. John's wort Water hyacinth</p>

Class	Legal Requirements	All NSW Declaration	Cessnock LGA Declaration
5	<p>Restricted plants for sale or distribution</p> <p>The requirements of the Noxious Weeds Act 1993 for a notifiable weed must be complied with.</p>	<p>African feathergrass African turnipweed Annual ragweed Arrowhead Artichoke thistle Athel tree Bear-skin Fescue Bridal creeper Burr ragweed Cabomba Cayenne snakeweed Clockweed Corn sowthistle Dodder Espartillo Fine-bristled Burrgrass Fountain grass Gallon's curse Glaucous starthistle Golden thistle Lantana Long-leaf willow primrose Mexican poppy Mossman River grass Onion grass Oxalis Red rice Sagittaria Sand oat Smooth-stemmed turnip Soldier thistle Texas blueweed Willows Yellow nutgrass</p>	

APPENDIX 5 - ENVIRONMENTAL WEBSITES

ABARE Homepage	http://www.abare-brs.gov.au/
Australian Association for Environment Education	www.aeee.org.au
Australian Network for Plant Conservation	http://www.anbg.gov.au/anpc/
Australian Law Databases	http://www.austlii.edu.au
Aust. Nat. Botanic Gardens/Centre for Plant Biodiversity	http://www.anbg.gov.au
Australian Water Association Homepage	http://www.awa.asn.au
Biodiversity/ Endangered Species Programs	http://www.environment.gov.au/biodiversity/index.html
Convict Trail Project-Great North Road	http://www.convicttrail.org
CSIRO Australia	http://www.csiro.au/
Department of Planning NSW	http://www.planning.nsw.gov.au
Dept. of Agriculture, Fisheries and Forestry Australia	http://www.daff.gov.au
Dept. Climate Change and Energy Efficiency	http://www.climatechange.gov.au
Dept Environment, Climate Change and Water	http://www.environment.nsw.gov.au
Dept. of Transport NSW	http://www.transport.nsw.gov.au
Dept. of Sustainability, Environment, Water, Population & Communities	http://www.environment.gov.au
Energy Ratings Website	http://www.energyrating.gov.au
Forests NSW	http://www.dpi.nsw.gov.au/forests
Greening Australia	http://www.greeningaustralia.org.au/
Hunter Central Rivers Catchment Mgt Auth.	http://www.hcr.cma.nsw.gov.au
Hunter Resource Recovery	http://www.hrr.com.au
Hunter Water	http://www.hunterwater.com.au
Keep Australia Beautiful NSW	http://www.kabnsw.org.au
HCCREMS	http://www.hccrems.com.au
Environment Protection and Heritage Council	http://www.ephc.gov.au
Landcare	http://www.landcareaustralia.com.au
National Native Title Tribunal	http://www.nntt.gov.au
NSW National Parks and Wildlife Service	http://www.environment.nsw.gov.au/nationalparks
Nature Conservation Council NSW	http://www.nccnsw.org.au/
NSW Agriculture	http://www.dpi.nsw.gov.au/agriculture
NSW Department of Local Government	http://www.dlg.nsw.gov.au
NSW Wildlife Atlas	http://www.wildlifeatlas.npws.nsw.gov.au
Sustainable Building Guide	http://www.yourhome.gov.au
Waterwatch	http://www.waterwatch.nsw.gov.au/
Total Environment Centre Index	http://tec.org.au
World Wide Fund for Nature	http://www.panda.org

Abbreviations

ANZECC	Australian and New Zealand Environment and Conservation Council
CCC	Cessnock City Council
CYCOS	Cessnock Youth Centre & Outreach Service
DA	Development Application
DCP/DCPs	Development Control Plan/s
DECCW	Department of Environment, Climate Change and Water NSW (formerly DECC)
DII	Department of Industry and Investment NSW
DIPNR	Department of Infrastructure, Planning and Natural Resources
DNR	Department of Natural Resources NSW (formerly DIPNR)
EEC	Endangered Ecological Community
EPBC Act	Environment Protection and Biodiversity Conservation Act
ESD	Ecologically Sustainable Development
GPT	Gross Pollutant Trap
HCRMA	Hunter – Central Rivers Catchment Management Authority
HRR	Hunter Resource Recovery
HWC	Hunter Water Corporation
KAB	Keep Australia Beautiful
LCA	Local Control Authority
LEP/LEPs	Local Environmental Plan/s
LGA	Local Government Area
HCCREMS	Hunter and Central Coast Regional Environmental Management Strategy
ML	Mega litres
NPWS	National Parks and Wildlife Service NSW
OSSM	On-site Sewerage Management
PVP	Property Vegetation Plans
RFS	Rural Fire Service
RTA	Roads and Traffic Authority
SEPP	State Environmental Planning Policy
SoE	State of the Environment Report
WWTP/WWTW	Wastewater Treatment Plant/Wastewater Treatment Works

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Roger Lewis – Hunter Resource Recovery

Angus Seaberry - Hunter Water Corporation

Elizabeth Roberts – The Convict Trail Project

Australian Bureau of Meteorology

Department of Natural Resources

Roads and Traffic Authority

NOW IT'S YOUR TURN

State of the Environment reports are produced for the local community and your views are important to Council. We hope you will take the time to complete this response sheet so that we can incorporate your ideas and opinions into subsequent reports. Your response will be greatly appreciated, and will assist Council in planning future environmental management activities.

1. Are you aware of any important environmental issues affecting the Cessnock area which have been omitted from this report?

2. Are the main issues given adequate coverage in the report? In which areas is information lacking? Please give details.

Human Settlements

Land

Atmosphere (Air)

Water

Biodiversity

Heritage

3. Did you find the structure and presentation of the report user-friendly, that is, easy to read and understand?

YES / NO

If not, have you any suggestions for improving this aspect of future State of the Environmental reports?

4. Are you aware of any environmental information in the form of documents, reports, plans, or programs which should be included in Cessnock's Environmental Database? Please give full details.

5. Do you have any other suggestions for improving the report?

6. In the interests of Community consultation, what are your top 3 environmental concerns in Cessnock LGA?

Please Return to:
Cessnock City Council,
Infrastructure and Services Department,
P.O. Box 152,
CESSNOCK NSW 2325