



State of the Environment Report

Local Government Areas of Balranald, Berrigan, Carrathool, Conargo,
Corowa, Deniliquin, Greater Hume, Jerilderie, Leeton, Murray,
Narrandera, Wakool & Wentworth

4th Supplementary Report 2007/08



2007/08

Habitat Planning
Town & Environmental Planning

Suite 1 / 622 Macauley Street
Albury NSW 2640

t 02 6021 0662 f 02 6021 0663
e habitat@habitatplanning.com.au
www.habitatplanning.com.au

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TERMS

"The principal report"	the MROC State of the Environment Report 2003/04
"The supplementary report"	the fourth supplementary SoE report 2007/08
"the area" or "region"	the area addressed by the SoE Report

ACRONYMS & ABBREVIATIONS

Bal	Balranald LGA
Ber	Berrigan LGA
Car	Carrathool LGA
Con	Conargo LGA
Cor	Corowa LGA
DEC	Department of Environment & Conservation (now DECC)
DECC	Department of Environment & Climate Change
Den	Deniliquin LGA
DNR	Department of Natural Resources (now DWE)
DPI	Department of Primary Industries
DWE	Department of Water & Energy
EPBC Act	Commonwealth <i>Environment Protection & Biodiversity Conservation Act 1999</i>
ERP	Estimated Resident Population
GHu	Greater Hume LGA
Jer	Jerilderie LGA
Lee	Leeton LGA
LEP	Local Environmental Plan
LGA	Local Government Area
MCMA	Murrumbidgee Catchment Management Authority
MIL	Murray Irrigation Limited
MROC	Murray Region Organisation of Councils
Mur	Murray LGA
Nar	Narrandera LGA
NSW	New South Wales
RLPB	Rural Lands Protection Board
SLA	Statistical Local Area
SoE	State of the Environment
TSC Act	NSW <i>Threatened Species Conservation Act 1995</i>
Wak	Wakool LGA
Wen	Wentworth LGA

1. INTRODUCTION

This is a Supplementary Report to the principal State of the Environment (SoE) Report prepared originally for some member councils of the Murray Regional Organisation of Councils (MROC). It is the fourth Supplementary Report to be prepared following the preparation of the 2003/04 principal report in December 2004.

A State of the Environment (SoE) report represents a review and record of the status of the 'environment' over a particular area. More specifically, and within the context the New South Wales *Local Government Act 1993*, a SoE report provides a summary of the attributes of the environment within which local government functions and the impacts of activities on that environment.

Each Council must prepare a principal SoE report at the end of the year in which a new Council is elected. This report must be comprehensive and address the eight environmental sectors of land, air, water, biodiversity, waste, noise, Aboriginal heritage and non-Aboriginal heritage. For the purposes of the principal SoE report for MROC the environmental sectors of waste, noise, Aboriginal heritage and non-Aboriginal heritage have been collapsed under one heading of 'human settlement' largely due to the lack of data available in each of these categories. Consequently the SoE report addresses five categories and not eight.

Supplementary SoE reports are required to be submitted within five months of each subsequent year (i.e. by November 30th) leading to the next local government election. The purpose of supplementary reports is to identify any new environmental impacts since the last principal SoE report and update any trends in environmental indicators that are important to each environmental sector.

Although each Council in NSW is required to prepare and lodge a SoE report, reporting at the regional level is encouraged by the Department of Local Government. Thirteen councils within the Riverina and Murray Regions of NSW have opted for the regional approach to SoE reporting under the umbrella of Murray Regional Organisation of Councils (MROC). During the reporting period two the bodies known as Riverina Regional Organisation of Councils (RivROC) and Murray Regional Organisation of Councils (Murray ROC) amalgamated to create the Riverina and Murray Regional organisation of Councils (RAMROC). All of the councils participating with this year's SoE are a part of RAMROC, though some are in the Murray region and some in the Riverina region. The council's involved in the SoE report are Balranald, Berrigan, Carrathool, Conargo, Corowa, Deniliquin, Greater Hume, Jerilderie, Leeton, Murray, Narrandera, Wakool and Wentworth. Also in RAMROC but not represented in this SoE are the local government areas of Albury, Griffith, Hay, Murrumbidgee and Urana.

There are some limitations to the data and information presented in the fourth supplementary report that need to be acknowledged, including:

- Despite an exhaustive search of databases and information sources across government, non-government and community organisations, there remains a lack of both qualitative and quantitative environmental data for inland areas of NSW. Data for the purposes of identifying trends (time series) is particularly difficult to source.

- A lot of data takes time to be made publicly available and as such even information released during 2007/08 can already be up to three years old. Consequently some of the data provided in this 4th Supplementary Report is new but not for the 2007/08 reporting period.
- Although Council's are provided with the same template for the purposes of collecting local data, there are gaps and inconsistencies in the way the data is presented in this report as Council's unintentionally respond in different ways.

2. THE MURRAY REGION

The area addressed in this supplementary report includes most of the member LGA's of RAMROC, namely:

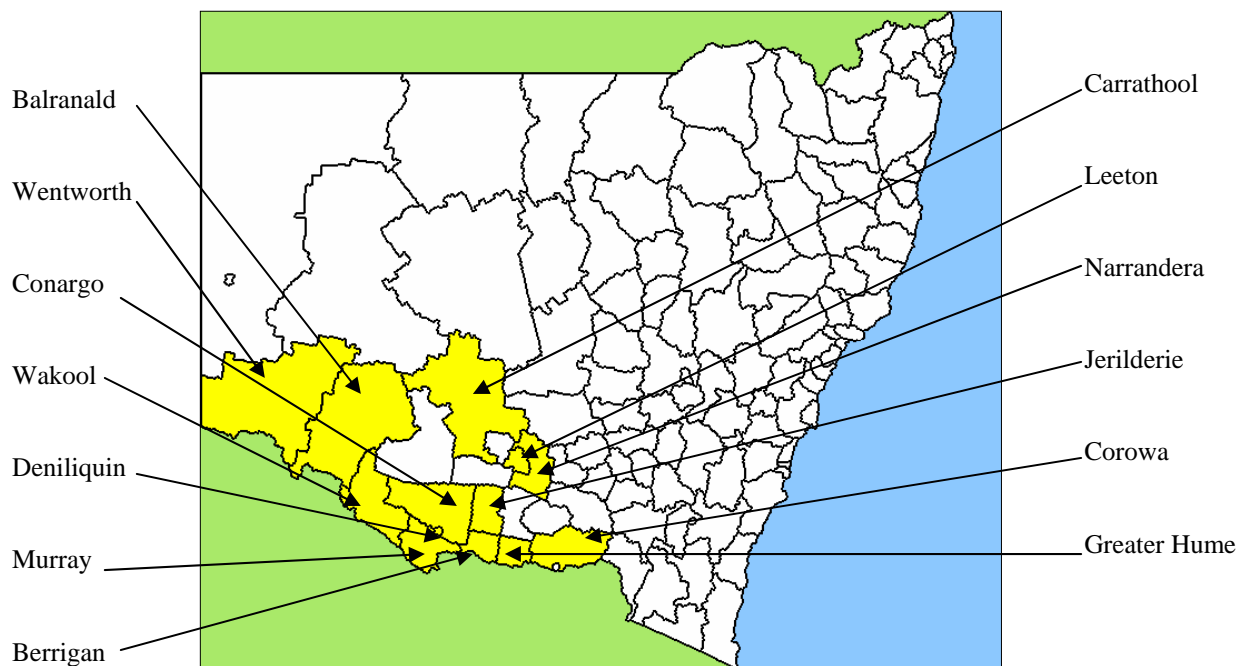
- Balranald
- Berrigan
- Carrathool
- Conargo
- Corowa
- Deniliquin
- Greater Hume
- Jerilderie
- Leeton
- Murray
- Narrandera
- Wakool
- Wentworth

The area extends along much of the state boundary between NSW and Victoria, being the Murray River from Albury to Wentworth (see Figure 1) and represents a large proportion of the southwestern corner of the state (see Figure 1). The terrain varies from flat in the western and central areas to gently sloping to very rugged on the foothills of the Great Dividing Range in the eastern part.

The area covers approximately 106,000 square kilometres and is home to approximately 86,000 people.

The area is largely rural in character and when not in drought features a range of both dryland and irrigated agricultural activities including cereal and oil crops, sheep and cattle, viticulture, horticulture and rice growing.

Figure 1: Local Government Areas included in the SoE report



(Source: Edited from Wikipedia image 2008)

Rainfall increases from west to east and varies between 300mm and 700mm per annum across the area. Although there is little difference in the temperature profiles

between LGA's, Greater Hume would have more than twice the average annual rainfall of Wentworth.

Likewise population density generally increases from west to east across the region. Leeton is the largest LGA in the region in terms of population and Wentworth in terms of area. Only Corowa, Greater Hume and Leeton LGA's have populations in excess of 10,000 (see Section 4.5).

3. NEW ENVIRONMENTAL IMPACTS

Council's have advised of the following new environmental impacts affecting their LGA in 2007/08.

Balranald

- LGA has land affected by salinity
- New dwellings have been constructed
- Number of licenced drivers has increased
- Recycling has decreased
- LGA suffered from drought
- Council implemented water restrictions

Berrigan

- LGA has land affected by salinity
- New dwellings have been constructed
- New roads have been constructed
- Number of licenced drivers has increased
- Landfill has increased
- Pest outbreak occurred
- LGA suffered from drought
- Council implemented water restrictions
- Reported incidence/s of fire

Carrathool

- New dwellings have been constructed
- An incidence of Blue Green Algae was reported
- Pest outbreak occurred
- LGA suffered from drought
- Council implemented water restrictions
- Reported incidence/s of flood

Conargo

- LGA has land affected by salinity
- New dwellings have been constructed
- Number of licenced drivers has increased
- LGA suffered from drought
- Council implemented water restrictions

- Reported incidence/s of fire

Corowa

- LGA has land affected by salinity
- New dwellings have been constructed
- New roads have been constructed
- Number of licenced drivers has increased
- Landfill has increased
- Recycling has decreased
- An incidence of Blue Green Algae was reported
- LGA suffered from drought
- Council implemented water restrictions
- Reported incidence/s of fire

Deniliquin

- LGA has land affected by salinity
- New dwellings have been constructed
- Number of licenced drivers has increased
- Recycling has decreased
- An incidence of Blue Green Algae was reported
- LGA suffered from drought
- Council implemented water restrictions
- Reported incidence/s of fire

Greater Hume

- LGA has land affected by salinity
- New dwellings have been constructed
- New roads have been constructed
- Number of licenced drivers has increased
- Landfill has increased
- Pest outbreak occurred
- LGA suffered from drought
- Council implemented water restrictions
- Reported incidence/s of flood

Jerilderie

- New dwellings have been constructed

- Landfill has increased
- LGA suffered from drought
- Council implemented water restrictions

Leeton

- LGA has land affected by salinity
- New dwellings have been constructed
- New roads have been constructed
- Number of licenced drivers has increased
- An incidence of Blue Green Algae was reported
- LGA suffered from drought
- Council implemented water restrictions

Murray

- New dwellings have been constructed
- New roads have been constructed
- Number of licenced drivers has increased
- LGA suffered from drought
- Council implemented water restrictions

Narrandera

- LGA has land affected by salinity
- New dwellings have been constructed
- LGA suffered from drought
- Council implemented water restrictions

Wakool

- LGA has land affected by salinity
- New dwellings have been constructed
- New roads have been constructed
- LGA suffered from drought
- Council implemented water restrictions
- Reported incidence/s of fire

Wentworth

- New dwellings have been constructed
- Number of licenced drivers has increased
- Landfill has increased

- LGA suffered from drought
- Council implemented water restrictions
- Reported incidence/s of fire

In addition to these trends, any environmental data that was not previously presented in the principal or previous supplementary SoE Reports has been sourced for the purposes of the fourth supplementary report. This data and information is detailed in the following section.

Council's have advised of the following significant environmental projects and issues affecting their LGA in 2007/08.

Table 1: Significant environmental factors in LGAs

	Significant environmental projects undertaken by Council in 07/08	Most important environmental issue facing Council in 07/08	Has Council made any direct response to climate change in 07/08?
Balranald	Nil	Drought	No
Berrigan	Nil	Water – ongoing drought / zero irrigation water allocations / financial security of local businesses and the family farm affecting the management of land.	No. Other than enforce BASIX commitments and water restrictions as required by legislation.
Carrathool	Nil	Water	No
Conargo	Nil	Water availability and drought	Attended information sessions
Corowa	Nil	Water	No
Deniliquin	Nil	Water/Drought	No
Greater Hume	Completion of Draft Urban Salinity Management Plan	Improving Natural Resource Management, completing a Local Environmental Plan and associated documents	No
Jerilderie	Nil	Drought – lack of water and a back-up supply for the township of Jerilderie	No
Leeton	Council undertook a significant tree planting project at the Leeton Landfill and Recycling Centre. 6000 trees were planted around the perimeter of the facility to act as a tree buffer.	The continuity of water supply.	Council continued its engagement in the City's for Climate Protection Program.
Murray	Moama North West Wetland Project - This artificial wetland system provides appropriate	Water and ecological crisis of Murray – Darling Basin	Yes

	Significant environmental projects undertaken by Council in 07/08	Most important environmental issue facing Council in 07/08	Has Council made any direct response to climate change in 07/08?
	<p>treatment of harvested stormwater for reuse on domestic gardens, public parks and reserves and through Councils water treatment plant. This treated water can then be utilised through the existing raw water reticulation for the town of Moama to reduce the overall volume sourced from the Murray River.</p> <p>Initiated Green Strategic Plan addressing power usage reduction options</p>		
Narrandera	Restoration of Lake Talbot, which involved the removal of willow trees	Salinity at NSC sports ground, water table is approx. 3m below surface	-
Wakool	Central Murray Regional Waste Management Group	Water	No
Wentworth	Nil	The drought – lack of water – demise of native vegetation – increased erosion	No

4. TRENDS IN ENVIRONMENTAL INDICATORS

This section of the report is structured along the same lines as that presented in the principal and previous supplementary SoE reports in that data and information is presented under one of the five environmental categories being land, atmosphere, water, biodiversity and human settlement.

It is not the purpose of this supplementary report to reiterate data and information on the environment that has already been presented in the principal and previous supplementary SoE reports. Consequently, where information and/or data presented in the principal and supplementary SoE reports cannot be updated, it has not been included in this supplementary report. Therefore the trends in environmental indicators detailed in this supplementary report are based on either:

- updated information and data provided in the principal and supplementary SoE reports (i.e. information and data that is available on an annual or regular basis); or
- new data and information that was either not available or not obtained for the purposes of the principal and supplementary SoE reports.

4.1 LAND

The land supports human population and all terrestrial plant and animal life. The importance of the land to society is perhaps most potently expressed by our reliance on the soil as a medium for production of food, fibre and timber.

Soil, biota and water together comprise a dynamic system, changing with what is put into it and what is taken out. The condition of aspects of these three components can often be a good indication of the overall 'health' of the land.

Soil salinity

Soil salinity is a form of land degradation characterised by increasing concentrations of salt in the soil. It is often first noticed as isolated waterlogged areas, patches of dying trees or other vegetation, crop failure, or changes in the types of plants growing in an area.

The proportion of dryland and irrigation salinity is of interest to SoE reporting because it can indicate a significant decline in the health of the land. Land affected by soil salinity during the 2007/08 period can be found in Table 2.

Table 2: Soil salinity

LGA	Land affected by soil salinity during 2007/08	Land affected by Acid Sulphate Soils?	Further comment
Balranald	1-5km ²	No	-
Berrigan	Yes	Not known	Information may be available from Murray Irrigation Limited , OR Murray Catchment Management Authority
Carrathool	None	-	-

LGA	Land affected by soil salinity during 2007/08	Land affected by Acid Sulphate Soils?	Further comment
Conargo	Yes	-	Km unknown
Corowa	Yes	Yes	Km unknown
Deniliquin	Yes, 0.2sqkm	No	No salinity measuring sites. No current actions
Greater Hume	Yes	-	Km unknown, salinity measuring sites within 10km of Henty township, no current actions
Jerilderie	No change from previous reporting	-	-
Leeton	Yes	No	Km unknown
Murray	Yes	Yes	Salinity - Km unknown, 232 monitoring points – geographically spread across rural areas of Shire monitoring salinity of ground water table ASS - Tuppal Creek Catchment, from Tocumwal to the downstream confluence with Edwards River Undertake a review of the geomorphic features in Tuppal Creek and its riparian zone. And assessment for priority actions for the management of Tuppal Creek.
Narrandera	NSC sportsground	No	
Wakool	Yes	No	The Wakool Tullakool Sub Surface Drainage Scheme (WTSSDS) is a salt interception scheme that pumps saline ground water into two evaporation basins. The Scheme protects approximately 50,000 hectares of farmland in the Wakool area from high watertables and salinity. The scheme pumps an average of 14,600 megalitres of saline water each year, preventing its gradual movement into Wakool, Niemur and Murray Rivers.
Wentworth	No	No	Have salinity measurement sites

(Information sourced from relevant Councils)

Soil erosion

No new data in regards to soil erosion was available for this period at this time.

Land contamination

Land is contaminated generally when the level of a hazardous substance is greater than that which would naturally occur at the same site. Hazardous substances

potentially pose an immediate or long-term risk to the health of humans or the environment.

The location and extent of an area contaminated by identified contaminants is of concern to SoE reporting because it is an indicator of the threat by land contamination to soil and aquatic organisms, vertebrates that might be feeding on contaminated organisms, and ultimately on human health.

The 13 LGAs participating in the SoE all reported no change had been recorded during 2007/08 with regard to land contamination within their jurisdiction.

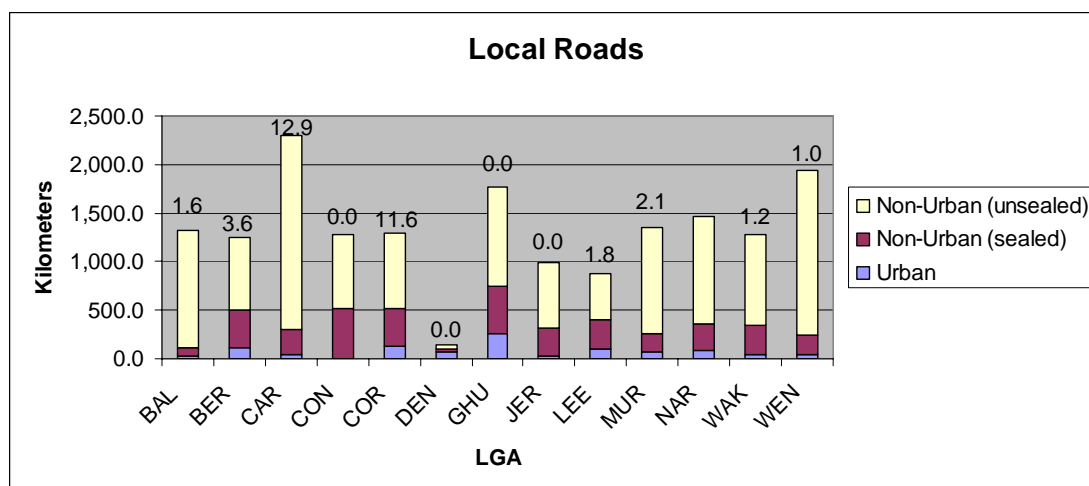
Carrathool, Corowa, Deniliquin, Jerilderie, Leeton, Narrandera, Wakool and Wentworth Shire Councils indicated that they currently maintain a Contaminated Lands Register during the 2007/08 reporting period. No additions were added to the Register.

Balranald, Berrigan, Conargo and Murray do not maintain a register.

Road construction & use

There are approximately 17,250 kilometres of local roads within the LGA's participating in this SoE report. Six percent are classified as urban local roads, 21 percent as non-urban sealed roads and 73 percent as non-urban unsealed roads. The breakdown of these roads for each LGA is shown below. Compared to other LGA's in the region, Deniliquin has a short length of local road because the municipality does not extend far beyond the urban area of the city. Carrathool has the greatest length of unsealed local road; Conargo has the most rural sealed road and Greater Hume with its 10 towns and villages the most urban sealed road. Road length and conditions for the 2007/08 reporting period is illustrated in Figure 2.

Figure 2: Road length 2007/08 - kilometres & km change from 06/07



(Source: Department of Local Government 2008)

The following table (Table 3) provides data of only those changes that have occurred to Council maintained and managed roads during 2007/08.

Table 3: Changes to roads within specified LGAs

LGA	New Roads Created	Ongoing maintenance	Other changes impacting traffic/road use

LGA	New Roads Created	Ongoing maintenance	Other changes impacting traffic/road use
Balranald	Nil	Nil	Nil
Berrigan	Sealed Rural 0.125 km Sealed Urban 0.595 km	Nil	Nil
Carrathool	Nil	Hillston Main St (High St Reconstruction), Lake Cargelligo Rd-extension of sealed section.	-
Conargo	Nil	Joint Project undertaken by Conargo Shire and Murray Shire Council; Replacement of the Eastman's Bridge, Old Morago Road - \$700,000	-
Corowa	Sealed Rural 1.5km Sealed Urban 0.4km	Hume Bridge replacement & Daysdale Bridge and road alignment	Nil
Deniliquin	Nil	-	Nil
Greater Hume	2.0km sealed rural, 1.5km sealed urban	-	Nil
Jerilderie	Nil	Maintenance and rehab work on Main Road 321	Nil
Leeton	Sealed Rural 5350m Gravel Rural 0.7km	Nil	Road use/traffic count observed during 2007/08 increased by 2%
Murray	Sealed Rural 0.9km Sealed Urban 2.21km Gravel Rural 1.0km	Eastman's Bridge over Edwards River	Nil
Narrandera	Nil	Seal 3km of Local Road 44	Nil
Wakool	Sealed Urban 0.24 km	Replacement of three (3) Bridges	
Wentworth	Nil	Nil	Nil

(Information sourced from relevant Councils)

Building, subdivision & major development

The future quality of communities is dependent upon on the condition and extent of infrastructure systems. To effectively manage public infrastructure assets it is necessary to develop long-term management plans that incorporate the true cost of developing, maintaining and upgrading infrastructure systems, as well as projecting likely future demand and other factors. It also includes planning for risk, to minimise the likelihood of failure. Inadequate planning can present significant problems for future generations.

Table 4 details the number of subdivisions approved by each Council during 2007/08, the number of new lots created by the approved subdivisions and the number of new dwellings approved.

Table 4: Subdivisions & new dwellings 2007/08

LGA	Subdivisions approved	Number of new lots created	New dwellings approved
Balranald	10	81	7
Berrigan	23	141lots from 18 subdivision certificates	64
Carrathool	4	1 new lot, 2 boundary adjustments and 1 consolidation (4 lots into 2)	8
Conargo	11	4	7
Corowa	18	106	77
Deniliquin	30	51	17
Greater Hume	36	112	48
Jerilderie	3	4	2
Leeton	13	22	28
Murray	20	83 (approved)	75
Narrandera	7	15	11
Wakool	19	46	12
Wentworth	12	17	30

(Information sourced from relevant Councils)

Table 5: Designated development 2007/08

LGA	Applications
Balranald	Nil
Berrigan	Nil
Carrathool	DA 2007/048 State Water redevelopment of Lake Brewster
Conargo	DA 384 - Warragoon Stormwater Escape Channel Stage 2 DA 382 - Water Storage Dam - 320 Mega litres
Corowa	Major alterations to Mulwala Water Ski Club and Corowa RSL Club - Total \$12 million
Deniliquin	Nil
Greater Hume	Nil
Jerilderie	Nil
Leeton	Designated development - nil Major Project applications - A construction certificate approval was given for a 50 bed aged care facility.
Murray	Nil
Narrandera	Nil
Wakool	Nil
Wentworth	Nil

(Information sourced from relevant Councils)

Town Planning

The State government's planning reform program is now well underway and many of the councils participating in this SoE have commenced the preparation of new Local Environmental Plans in accordance with the Standard Instrument provided by the Department of Planning (DoP). Councils have advised as follows in regards to their current and future planning instruments.

Table 6: Changes to planning instruments 2007/08

LGA	Amendments to LEP/IDO and/or DCPs	Stage of new LEP
Balranald	Draft LEP being prepared	Final drafting
Berrigan	Berrigan Local Environmental Plan 1992 Amendment No.6 gazetted 13 th July 2007 – addition to 2V village or urban zone boundaries in Barooga and Tocumwal	Preparation of BSC strategic land use plan due for completion December 2008
Carrathool	Changes to concessional allotments by Govt SEPP	Finished S62 consultations and seeking certificate from DOP to place document on exhibition.
Conargo		LES for rural lot sizes
Corowa	Nil	SLUP
Deniliquin	DCP 1 amendment	S54
Greater Hume	Nil	SLUP adopted
Jerilderie	Nil	Not commenced
Leeton	Nil	Not commenced
Murray	Murray Local Environmental Plan Amendment No 13 – rezoning of rural land to residential Tataila Road Moama	Under development pre- Section 62
Narrandera	Nil	Preliminary - discussions with DoP re funding
Wakool	Nil	Final LUS
Wentworth	Nil	Approaching Section 62 consultation

(Information sourced from relevant Councils)

The following comments were made in regard to the State Government's Planning Reform program.

Balranald

- Council has no comments in regards to the State Government's Planning Reform program

Berrigan

- The removal of so-called 'concessional lot' provisions has not created any problems. There may be individual property owner disappointment but on the whole it is seen by Council as strategically a good thing.

- [BASIX] is the first step in a process of change in NSW towards more environmentally efficient buildings. It is now just another part of the process.
- There has been a growth in transportable / manufactured housing which avoids seniors living and retirement village laws and BASIX commitments

Carrathool

- The removal of so-called 'concessional lot' provisions in the LEP has been a positive initiative

Conargo

- Concessional lot provisions were identified in the Council Social Plan as an important means of succession planning and means of keeping families together on farms.

Corowa

- Farmers have expressed disappointment at the removal of so-called 'concessional lot' provisions
- Council says that the BASIX system has now been accepted – although it is very easy to "modify"

Deniliquin

- Council was not affected by the removal of so called "concessional lot" provisions

Greater Hume

- Council has no comments

Jerilderie

- Council has concerns about the proposed housing code. In it's present form it will decrease the number of complying developments in the shire not increase them
- The removal of so-called 'concessional lot' provisions in our LEP/IDO will have an impact on some family run farms and succession planning
- The BASIX system is not a large concern for Jerilderie Shire

Leeton

- Council comments that without adequate training and resource CDCs won't work (in regards to the State government's Planning Reform program).
- The removal of so-called 'concessional lot' provisions has not created any problems as the majority of Leeton Shire had concessional allotments removed in 1998
- In regards to the BASIX system, there has been no research carried out on whether the target savings of water and energy have been achieved.

Murray

- Council has no comments in regards to the State Government's planning reform, concessional lots or BASIX.

Narrandera

- The removal of so called 'concessional lots' has worked quite well in this shire. Only able to create 1 allotment
- [In regards to BASIX] living in the country it is difficult to see the value in putting good rain water through a toilet system or not being able to have air conditioning in bedrooms with a summer temperatures of 40°+

Wakool

- Further education is required in relation to compliance with BASIX Certificates

Wentworth

- The removal of the concessional lots is not the problem, but rather the interpretation of the Rural Lands SEPP.
- The details of the plans presented do not adequately depict the BASIX requirements. Need education to the community to demonstrate the importance of environmental efficiency and better design to improve the impact on the environment.

Community facilities & public open space

Land in towns is used for residential, commercial and industrial uses as well as urban green space. The amount of land used for each affects the nature and extent of impacts of urbanisation on the environment and the demands for infrastructure such as energy and water supply systems. The way land is used in urban areas also impacts on the quality of life for residents as it affects the amount of privacy, space and noise experienced by the residential population, resulting in a range of effects on human health.

The area of urban green space should be further disaggregated into the area of urban land devoted to native vegetation, parks, gardens, recreation and other open spaces, relative to the total urban area and whether this green space is accessible to the public. This is because urban green space that is not easily accessible for all does not contribute as much to the overall quality of life for an urban population.

Balranald reported a new Balranald-Euston/Robinvale Connector (Walkway/cycleway). All other Council's report no changes to the public open space controlled by the LGA's for 2007/08.

Table 7: Major Community Projects 2007/08

LGA	Project
Balranald	Euston/ Robinvale Connector (Walkway/cycleway)
Berrigan	Constructed a new library in Berrigan (approx cost \$700K) Financial contribution and administrative assistance (approx \$100K) to Tocumwal Recreation Reserve pavilion / change room complex. (est. total > \$1 mill)
Carrathool	Significant reconstruction of Hillston main street. Improved width of footpaths extensive landscaping involving new planting in the centre islands, paving on footpaths and new street furniture and plantings
Conargo	Blighty Recreation Hall – major extension and refurbishment - \$650,000

LGA	Project
	Wanganella Community Hall – New Community Hall built - \$ 400,000
Corowa	Nil
Deniliquin	Nil
Greater Hume	Expansion of Jerilderie Aged Care - from 10 beds to 20, constructed 3 independent living units at Kala Court Holbrook
Jerilderie	Restoration of the Jerilderie Police Stables brick work.
Leeton	Major Alterations and Additions to the Town Library. Construction of the Leeton SES Headquarters in Conjunction with the State Emergency Service.
Murray	Initiated Moama Botanic Gardens development project Long Paddock Heritage Trail project
Narrandera	New walking track along section of Murrumbidgee River, Renewed walking track along section of Lake Talbot, New section of bicycle track in front of Narrandera Sports Ground
Wakool	Nil
Wentworth	Addition to the Alcheringa Pavilion for the purpose of additional function area new kitchen new change rooms for netballers and 2 plexi pave netball courts – Cost \$492,000

(Information sourced from relevant Councils)

4.2 ATMOSPHERE

The atmosphere is no respecter of human boundaries and any division of it into jurisdictional regions is artificial and unhelpful. The air in the region forms part of the great global movements of air that drive the climate system and re-distribute heat around the planet - in the process moving pollutants too. Clearly areas are subjected to deteriorations in the state of the atmosphere caused by actions elsewhere and this must be borne in mind when reading any material in this theme.

In this theme, we report on the condition of the atmosphere in the region including rainfall and temperature statistics.

Also of importance to human health, although little monitored, is the quality of air inside buildings.

Pollution complaints

The data available on the Department of Environment and Climate Change (DECC) website has not been updated since the principal SoE report and consequently there is no data to present in addition to that in the principal SoE report.

Table 8 provides some data supplied by each LGA from their own complaints records.

Table 8: Pollution complaints 2007/08

LGA	Complaints Register?	Number of Complaints 2007/08	Details/nature of complaint
Balranald	No	-	-
Berrigan	Yes	2	Backyard burning
Carrathool	No	-	-

Conargo	Yes	-	-
Corowa	No		
Deniliquin	Yes	6	Airborne chemical x1, odour from sewer treatment plant x2, odour from bore x 2, water pollution x1
Greater Hume	Yes	11	Smells, backyard burning, litter
Jerilderie	Yes	-	-
Leeton	Yes	7	Most complaints were strictly localised and did not have a broad effect on the greater community. Complaints generally related to a noise or an odour issue
Murray	Yes	0	-
Narrandera	Yes	2	Odour from waste depot facility
Wakool	Yes	3	Odour - Feedlots
Wentworth	Yes	-	-

(Information sourced from relevant Councils)

Motor vehicle use

Whilst providing an important means of transport, motor vehicles are a source of air pollution and are therefore relevant to SoE reporting. Table 9 below provides information on the kilometres travelled by Council-owned vehicles within each LGA as well as the volume of fuel consumed.

Table 9: Council vehicle usage 2007/08

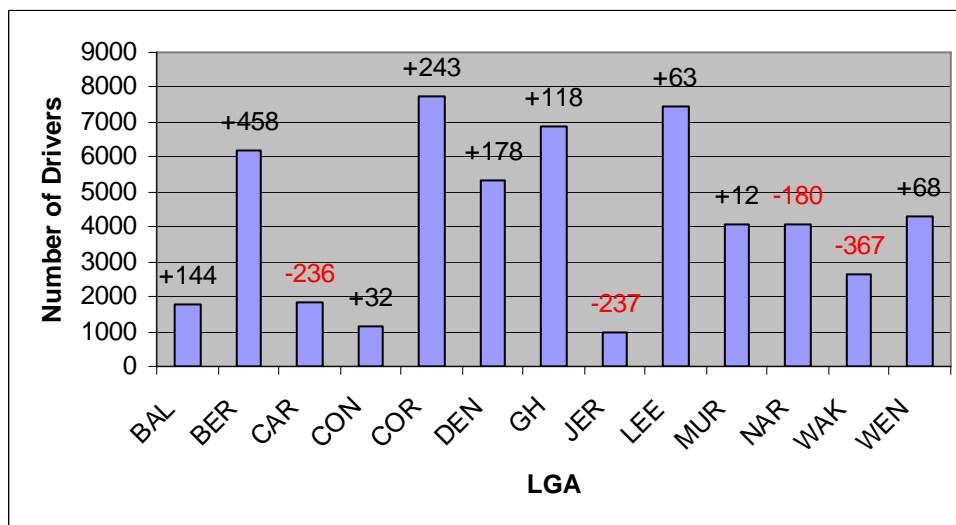
LGA	Kilometres travelled by Council vehicles during 2007/08	Litres of fuel used by Council vehicles during 2007/08
Balranald	621 500	187 040
Berrigan	1 073 207	Approx 150 000
Carrathool	-	-
Conargo	755000	404 559
Corowa	unknown	76 000 ULP, 169 000 diesel
Deniliquin	821 314	226 301
Greater Hume	2 500 000	511 000
Jerilderie	unknown	unknown
Leeton	373 923	85 131L of Petrol, 199463L of Diesel
Murray	unknown	ULP 64 700, Diesel 289 200 litres
Narrandera	450 000	67 500
Wakool	1 688 015.75	99,631.47 ULP, 237,971.68 diesel
Wentworth	2 580 000	465 000

(Information sourced from relevant Councils)

Figure 3, 4 and 5 present the data available from the RTA in regards to vehicles and drivers in 2007. Figure 3 shows the number of licensed drivers in each LGA and reveals that some LGAs experienced decreases and some increases. Berrigan registered the largest change (and increase) while Wakool showed the largest decrease and Murray showed the least change.

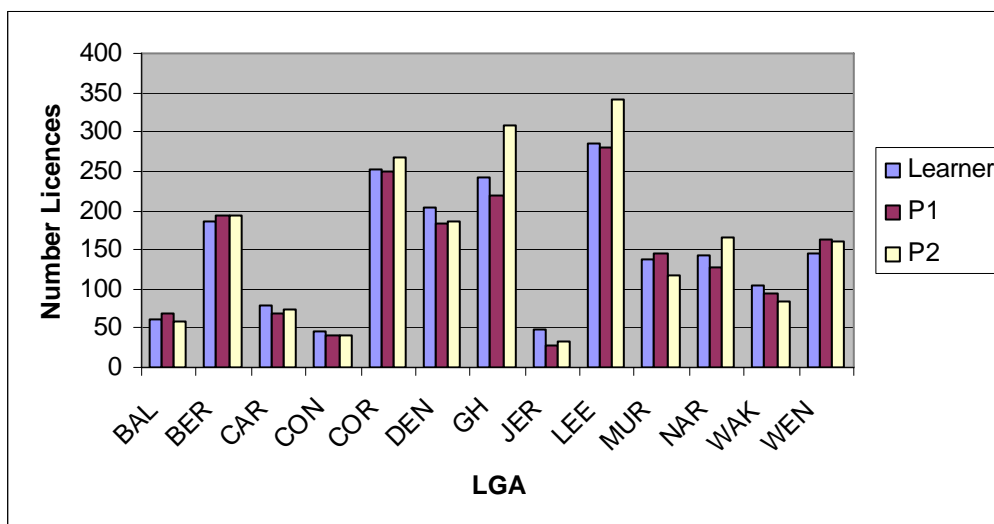
Figure 4 shows the number of provisional or learner drivers for each LGA. Leeton has the largest number of provisional drivers while Jerilderie has the smallest.

Figure 3: Licensed drivers 2007 & change from 2006



(Source: RTA 2007)

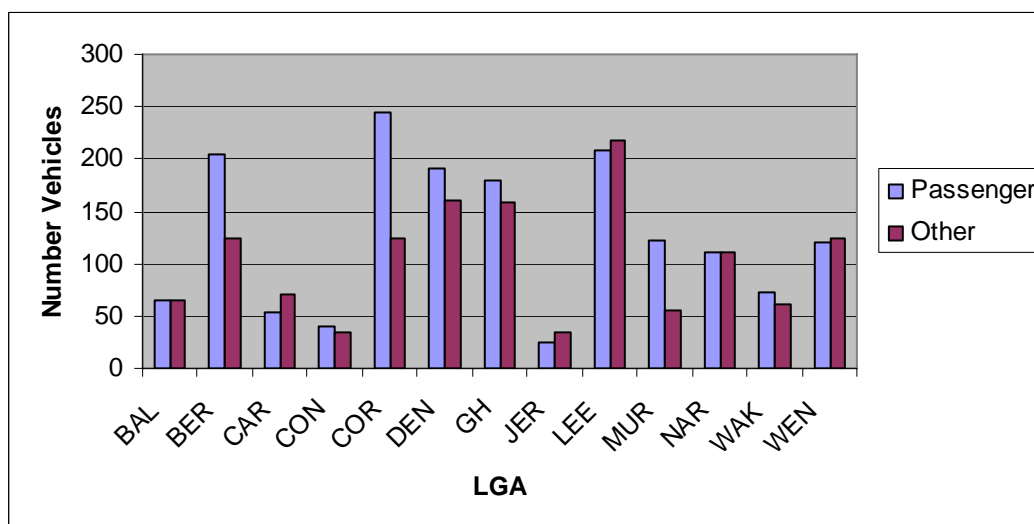
Figure 4: Provisional drivers 2007



(Source: RTA 2007)

Figure 5 shows the number of new vehicles registered in each LGA in 2007. Corowa had the most new passenger vehicle registrations with Berrigan, Greater Hume, Deniliquin and Leeton all around the 200 mark. Leeton experienced the most non-passenger vehicle registrations.

Figure 5: New vehicles registered 2007



(Source: RTA 2007)

Temperature

Temperature, along with rainfall, is one of the main factors that influence the nature and species composition of ecosystems, as well as the types of agricultural activities that can be carried out in the region. It is the temperature extremes that are of most interest, as longer-term averages are slow to change in response to climate changes, both natural and human induced such as the enhanced so-called 'greenhouse' effect. For example, many crops are vulnerable to an unseasonably late frost, or an extremely hot day at specific stages in crop growth.

Temperature also affects human comfort and this is reflected in energy usage, as many dwellings and places of work require some heating in the coldest winter months, and/or cooling in the hottest summer months.

Figure 6 shows the mean minimum and maximum historical temperatures in comparison with the other LGAs. This has been included due to the introduction of new LGAs in this SoE.

Figure 7 charts the mean minimum and monthly temperatures experienced across the region in 2007/08 compared to the historical average. The charts show that across the region spring was slightly cooler than average, the summer hotter than average (significantly hotter in January and February), and autumn and winter were cooler than average.

Figure 6: Mean minimum & maximum yearly temperature – historical, all LGAs

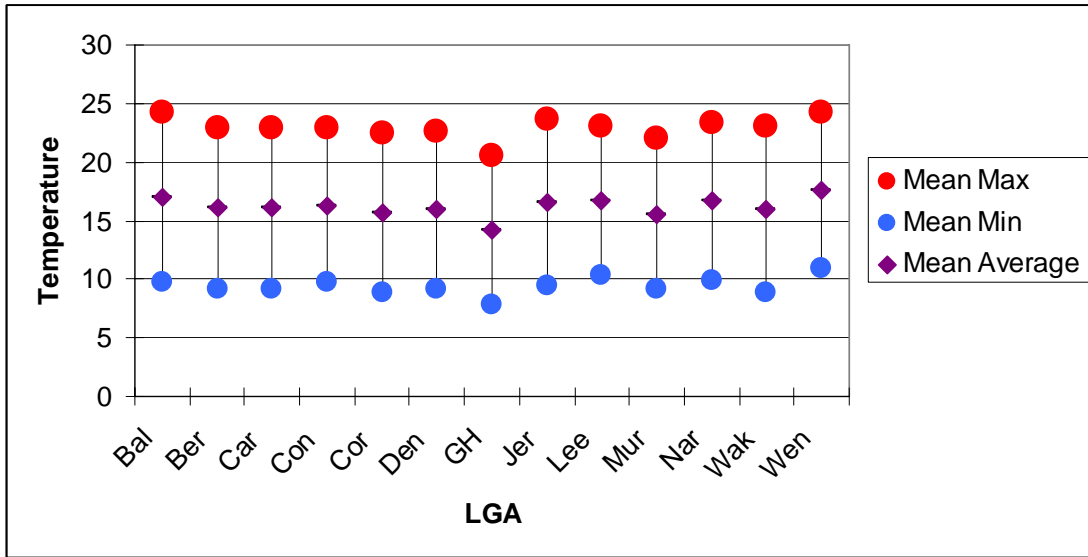
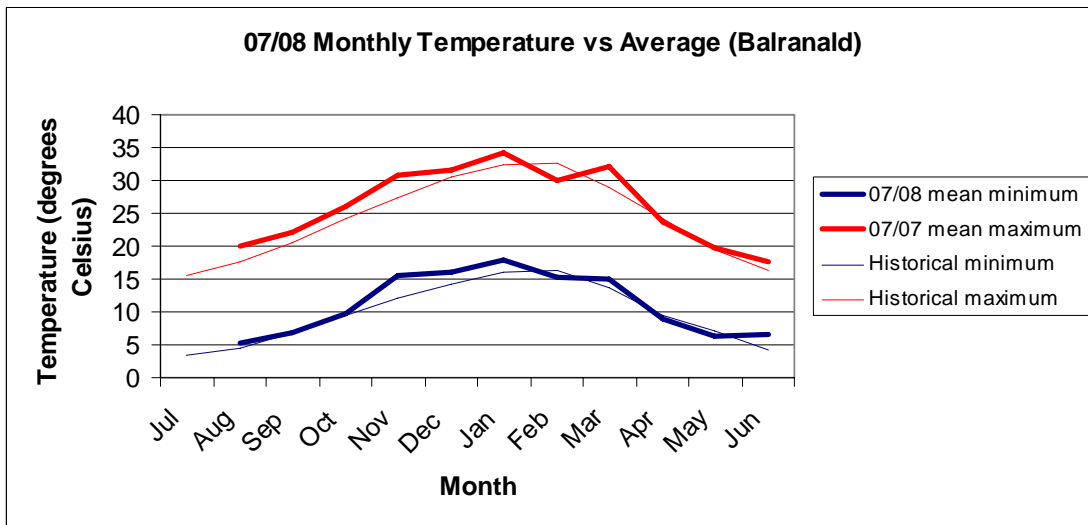
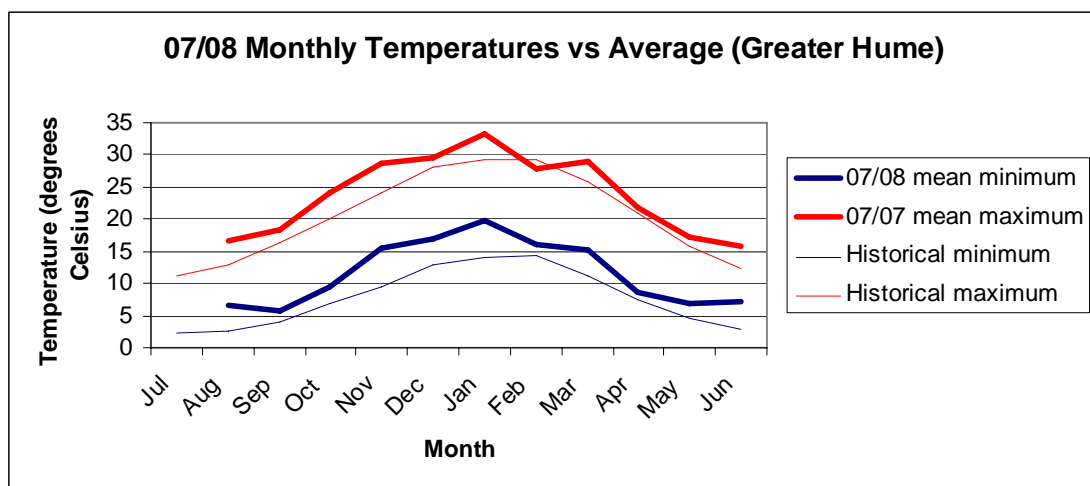
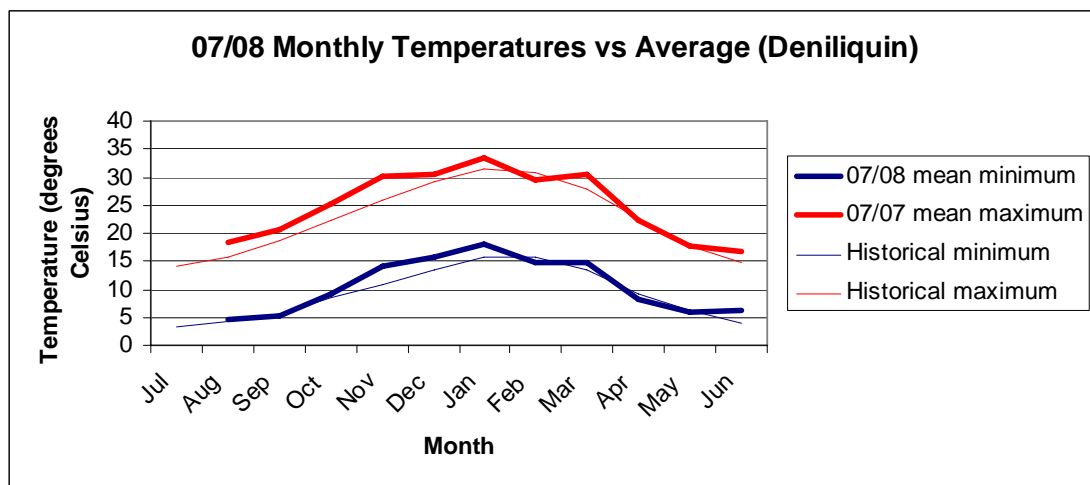
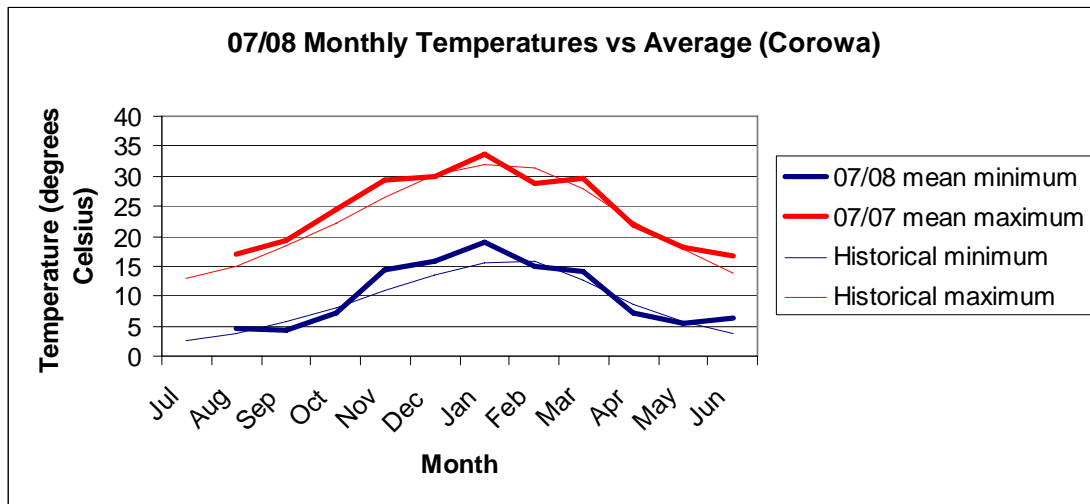
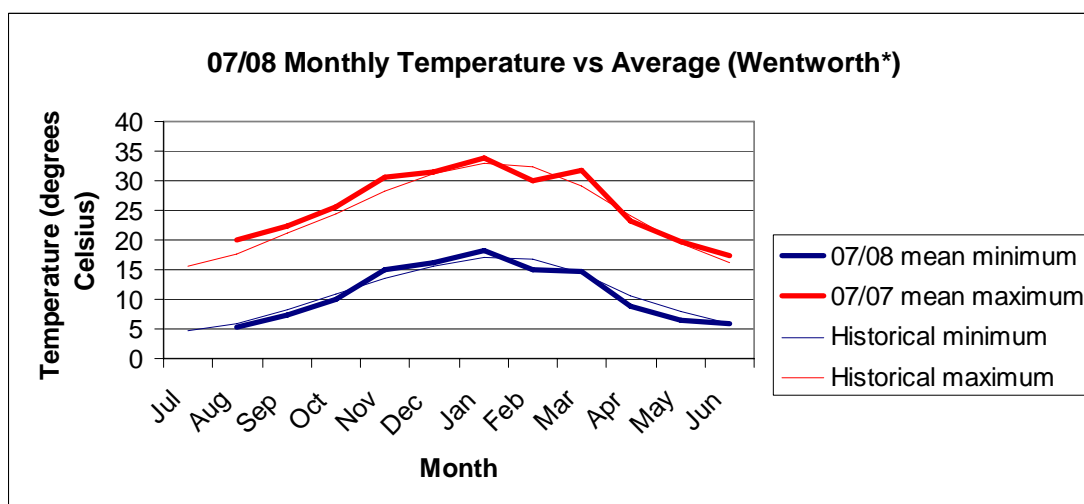
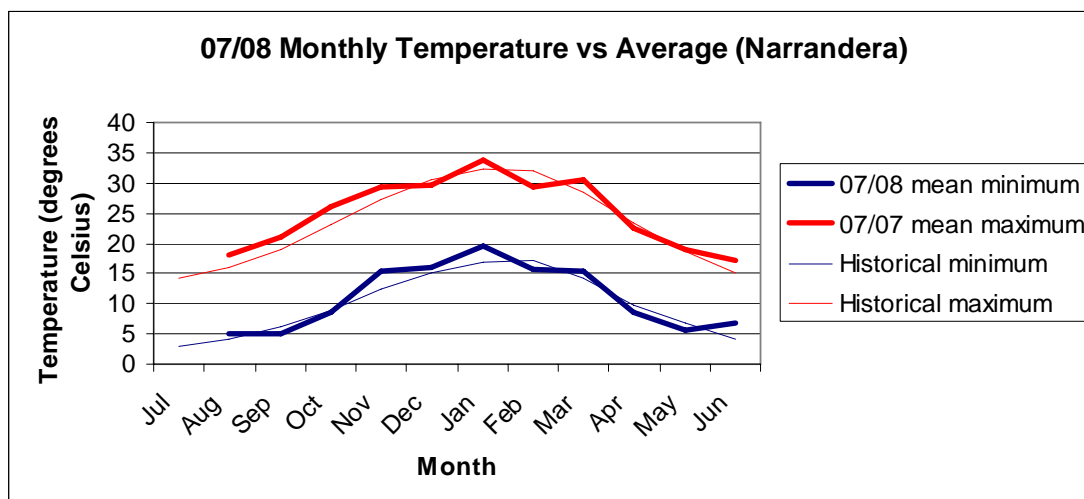


Figure 7: Mean minimum & maximum monthly temperature – 2007/08 vs average







(* note: Wentworth monthly data unavailable, closest weather data is from Mildura VIC)

(Source: BOM 2008)

Smoke

The amount of particles in our atmosphere can result in a loss of visibility because of haze, as well as increases in the number of people affected by respiratory problems like asthma and bronchitis. This is the reason for including smoke as an indicator in the SoE report.

Within the study area the two primary sources of smoke are, firstly, stubble burning of agricultural paddocks that have generally been sown with cereal crops and secondly, during the winter months where the use of solid fuel heaters contributes to the particulate count. Table 10 below displays the data received from the LGAs.

Table 10: Stubble burning & solid fuel heaters during 2007/08

LGA	Number of permits for stubble burning	Number of permits for solid fuel heaters
Balranald	Nil	Nil
Berrigan	4	Nil

LGA	Number of permits for stubble burning	Number of permits for solid fuel heaters
Carrathool	-	Nil
Conargo	24	Nil
Corowa	7	4
Deniliquin	Nil	Nil
Greater Hume	Nil	6
Jerilderie	Nil	Nil
Leeton	Nil	Nil
Murray	Nil	Nil
Narrandera	Nil	Nil
Wakool	18	11
Wentworth	Stubble burns are not undertaken in this shire. A better indicator would be cleared Mallee burn permits which are conducted over the BFDP each year. Last year in this Shire alone there were 84 permits issued for burns of this nature in varying sizes.	Nil

(Information sourced from relevant Councils)

Environment Protection Licences

Environment Protection Licences (EPL) are issued by the DECC for scheduled premises. Table 11 lists all licences currently in place across the LGA's included in this SoE report. A total of four new licences were either issued or are pending. New licences issued in the reporting period are highlighted.

Table 11: DECC issued Environment Protection Licences for Scheduled Premises

LICENCE HOLDER	PREMISES	ACTIVITY	CHANGE FROM 2006/07	NON-COMPLIANCE 2007/08 (x no. of incidents)
BALRANALD				
BALRANALD GYPSUM PTY LTD	WHITE PLAINS GYPSUM, IVANHOE ROAD BALRANALD 2715	Mining for minerals		
BALRANALD GYPSUM PTY LTD	PAXTONS MINE LEASE, IVANHOE ROAD HATFIELD 2715	Mining for minerals		
BALRANALD GYPSUM PTY LTD	NORM'S MINE, IVANHOE ROAD BALRANALD 2715	Mining for minerals		
BALRANALD SHIRE COUNCIL	BALRANALD WATER TREATMENT WORKS, 36 COURT STREET BALRANALD 2715	Miscellaneous Licensed Discharge to Waters (at any time)		
BERRIGAN				
BERRIGAN SHIRE COUNCIL	FINLEY SEWAGE TREATMENT PLANT, DALES ROAD FINLEY 2713	Sewage treatment - processing by small plants (< 10000 ML per year)		
COLLINS; DAVID ERIC GEORGE	"CLAREMONT" CRUIKSHANKS ROAD BERRIGAN 2712	Pig accommodation		
EQUITY PARK ENTERPRISES PTY. LTD	EQUITY PARK ENTERPRISES PTY LTD, PINEY ROAD BERRIGAN 2712	Pig accommodation		
M.W. & M. L. MCGRATH PTY. LTD	"LYNTON" RMB 1620 LANGUNYAH ROAD TOCUMWAL 2714	Pig accommodation		
MCPHERSON; ALLAN S J	"AVALON PARK" RMB 1630 LANGUNYAH ROAD TOCUMWAL 2714	Pig accommodation		
MCPHERSON; ALLAN S J	"AVALON PARK" RMB 1630 LANGUNYAH ROAD TOCUMWAL 2714	Pig accommodation		
MCPHERSON; ALLAN S J	"AVALON PARK" RMB 1630 LANGUNYAH ROAD	Pig accommodation		

LICENCE HOLDER	PREMISES	ACTIVITY	CHANGE FROM 2006/07	NON-COMPLIANCE 2007/08 (x no. of incidents)
	TOCUMWAL 2714			
MOSSGIEL NOMINEES PTY. LTD	"YARRAMUNDEE" RMB 430 RUWOLTS ROAD MULWALA 2647	Dairy animal accommodation		
N.J. & I.R. KYDD PTY. LTD	NJ & IR KYDD PTY LTD RMB 3065 HORNEMANS ROAD FINLEY 2713	Dairy animal accommodation		
PERRYMANS KNACKERY PTY LTD	PERRYMAN'S KNACKERY, MARDINORA ROAD TOCUMWAL 2714	General animal products production		
RICEGROWERS LIMITED	FINLEY PADDY STORAGE FACILITY, RICE MILL ROAD FINLEY 2713	General agricultural processing		
CARRATHOOL				
ALBACORE PTY. LTD	AZTEC FARMS, RANKINS SPRINGS ROAD MYALL PARK 2681	Pig accommodation		
NAMOI COTTON CO- OPERATIVE LTD, TWYNAM COTTON PTY LIMITED	NAMOI COTTON & TWYNAM, AUSTRALIAN COTTON GINNING CO., HILLSTON COTTON GIN, ROTO ROAD HILLSTON 2675	General agricultural processing		
P.A. WOODS & CO PTY LTD	WESTERN RIVERINA QUARRIES, "KOOMARINGA" RANKINS SPRINGS 2669	Land-based extractive activity		
SWIFT AUSTRALIA PTY LIMITED	PRIME CITY FEEDLOT, JONES ROAD TABBITA 2652	Cattle, sheep or horse accommodation, Composting, General agricultural processing	S 58 Licence Variation (July 2007)	
NAMOI COTTON CO- OPERATIVE LTD, TWYNAM COTTON PTY LIMITED	NAMOI COTTON & TWYNAM, AUSTRALIAN COTTON GINNING CO., HILLSTON COTTON GIN, ROTO ROAD HILLSTON 2675	General agricultural processing		
CONARGO				
ALDEBARAN PASTORAL CO	"LYNBRAE" MONIMAIL	Cattle, sheep or horse		

LICENCE HOLDER	PREMISES	ACTIVITY	CHANGE FROM 2006/07	NON-COMPLIANCE 2007/08 (x no. of incidents)
PTY LTD	ROAD DENILIQVIN 2710	accommodation		
RICEGROWERS LIMITED	BLIGHTY RICE STORAGE SHEDS, RIVERINA HIGHWAY BLIGHTY 2713	General agricultural processing		
COROWA				
BAIRD; HEIDI J. & BAIRD; INNES	HOPEFIELD PIGGERY HOPEFIELD ROAD COROWA	Pig Production		
BORAL RESOURCES (VIC) PTY LIMITED	COROWA SAND & GRAVEL RIVERINA HIGHWAY HOWLONG	Other Land-Based Extraction		
COROWA SHIRE COUNCIL	MULWALA SEWAGE TREATMENT WORKS BAYLY STREET MULWALA	Sewage Treatment - small plants		Feb 07 - Jan 08 - BOD concentration limit exceeded (x11), Nitrogen concentration limit exceeded (x2), Phosphorous concentration limit exceeded (x2), Total Suspended Solids concentration limit exceeded (x10), Point 3. A minimum of 0.5 mg/l chlorine (x1)
COROWA SHIRE COUNCIL	MULWALA FILTRATION PLANT GULAI ROAD MULWALA	Misc Licensed Discharge to Waters (any)		
COROWA SHIRE COUNCIL	COROWA SEWAGE TREATMENT WORKS 27 NIXON STREET COROWA	Sewage Treatment - small plants		
COROWA SHIRE COUNCIL	COROWA GARBAGE DEPOT ALBURY ROAD COROWA	Environmentally Sensitive or Inappropriate Land filling		Jul 07 - Jun 08 - It is an extremely difficult engineering task to provide a collection system as the waste is being positioned on top of pre 1980 waste. Council is continuing the process of rezoning the site to permit the operation of a transfer station (x3)
COROWA SHIRE COUNCIL	COROWA SALEYARDS 449-471 HONOUR AVENUE COROWA	Saleyards		
HANSON CONSTRUCTION MATERIALS PTY LTD	PIONEER CONSTRUCTION MATERIALS PTY LTD POSIEDON ROAD COROWA	Concrete Batching		
HUGHES, ADRIAN KEVIN	LOT 2 ALMOND LANE	Composting and Related	S 58 Licence Variation	

LICENCE HOLDER	PREMISES	ACTIVITY	CHANGE FROM 2006/07	NON-COMPLIANCE 2007/08 (x no. of incidents)
	COROWA	Reprocessing	(08 Jan 08)	
ICM FARM PRODUCTS AUSTRALIA PTY LTD	KUNANADGEE STATION SPRING DRIVE COROWA	Milking Facilities	S 58 Licence Variation (Oct 07)	
MELBAN PTY LIMITED COOL - OFF	MELBAN PTY LTD JUDE ROAD HOWLONG	Other Livestock Processing		
MILLS; DONALD JAMES ROSEDALE NOMINEES PTY LTD MILLS; JOHN ROSEDALE NOMINEES PTY LTD	"KARDINIA" BALLDALE COREEN ROAD COROWA	Pig Production		
MOORoola PTY LTD	MOORoola PTY LTD "WANGAMONG" OAKLANDS	Pig Production		
NAGLE; RODNEY DAVID I & R NAGLE	I & R NAGLE "WONGALEA" BERRIGAN ROADSIDE COROWA	Pig Production		
QAF FEEDS PTY LTD	QAF FEEDS PTY LTD ALBURY ROAD COROWA	Other Agricultural Crop Processing (3)		
QAF MEAT INDUSTRIES PTY LTD	QAF MEAT INDUSTRIES PTY LTD REDLANDS ROAD COROWA	Animal Slaughtering Pig Production	S 58 Licence Variation (Jan 08)	
RIDLEY AGRIPRODUCTS PTY LTD	RIDLEY AGRIPRODUCTS WHITEHEAD STREET COROWA	Other Agricultural Crop Processing (3)		
TABLE TOP HOLDINGS PTY LTD	HOWLONG SAND & GRAVEL, "TARCOOLA" ALBURY ROAD ALBURY 2640	Crushing, grinding or separating		
THALES AUSTRALIA LIMITED	THALES AUSTRALIA, BAYLY STREET MULWALA 2647	Dangerous goods production, Explosives production, General chemicals storage, Non-thermal treatment of hazardous and other waste, Thermal treatment of hazardous & other waste	S 91 Clean-Up Notice (May 08), S 58 Licence Variation (July 08)	
DENILIQVIN				
DENILIQVIN COUNCIL	DENILIQVIN SEWAGE TREATMENT SYSTEM CALIMO STREET	Sewage Treatment - small plants		

LICENCE HOLDER	PREMISES	ACTIVITY	CHANGE FROM 2006/07	NON-COMPLIANCE 2007/08 (x no. of incidents)
	DENILIQUN			
DENILIQUN COUNCIL	DENILIQUN WASTE DISPOSAL DEPOT HAY ROAD DENILIQUN	Solid Waste Land filling	Licence variation (Jun 08),	Sep 06 - Sep 07 - No monitoring of TOC at all 11 bores. No monitoring of As, Hg, Pb and F at some bores (May and September)
DENILIQUN COUNCIL	DENILIQUN SALEYARDS, SALEYARDS ROAD DENILIQUN	Saleyards		
FAMICORP PTY LTD	FAMICORP PTY LTD ABATTOIR ROAD DENILIQUN	Animal Slaughtering		
FOUR SEAS (NSW) LIMITED	CHARLIE CARP FERTILISER LOT 2 SALEYARDS ROAD DENILIQUN	Rendering or Fat Extraction		
GREATER SOUTHERN AREA HEALTH SERVICE	DENILIQUN HOSPITAL 40 CHARLOTTE STREET DENILIQUN	Hazardous, Industrial or Group A Waste G	NO LONGER IN FORCE	
MURRAY IRRIGATION LIMITED	MURRAY IRRIGATION AREA OF OPERATIONS WITHIN SHIRES OF WAKOOL, WINDOURAN, COROWA, BERRIGAN, JERILDERIE, CONARGO, MURRAY & DENILIQUN	Irrigated Agriculture		
RICEGROWERS' CO-OPERATIVE LIMITED	DENILIQUN RICE MILL SALE YARDS ROAD DENILIQUN	Other Agricultural Crop Processing (3)		
GREATER HUME				
ABIGROUP CONTRACTORS PTY LTD	ROCKLEY FALLS QUARRY, HUME HIGHWAY HOLBROOK 2644	Crushing, grinding or separating	New Licence approved (Apr 08)	
ABIGROUP CONTRACTORS PTY LTD	MULLENGANDRA BATCH PLANT, HUME HIGHWAY MULLENGANDRA 2644	Concrete works	New Licence approved (Jun 08)	
ABIGROUP CONTRACTORS PTY LTD	KNOX ROAD BATCH PLANT, HUME HIGHWAY TABLE TOP 2640	Concrete works	New Licence approved (Jun 08)	
ALBURY GALVANIZING PTY LTD	ALBURY GALVANIZING PTY LTD LOT 9 DAVIS	Hazardous, Industrial or Group A Waste G		

LICENCE HOLDER	PREMISES	ACTIVITY	CHANGE FROM 2006/07	NON-COMPLIANCE 2007/08 (x no. of incidents)
	DRIVE JINDERA			
BALD HILL QUARRY PTY LTD	"CROMER" HUME HIGHWAY, HOLBROOK	Hard-Rock Gravel Quarrying		
BARWONDALE FEEDLOT PTY LTD	COOKARDINIA ROAD, HENTY	Feedlot Production		
BORAL BRICKS PTY LTD	BORAL BRICKS PTY LTD HUESKE ROAD JINDERA	Ceramics Production Crushing/Grinding/Separating Other Land-Based Extraction	S 58 Licence Variation (Jun 08)	
BORAL RESOURCES (VIC) PTY LIMITED	WEEAMERA ROAD CULCAIRN	Hard-Rock Gravel Quarrying	Licence variation (Jul 08)	
GREATER HUME SHIRE COUNCIL	COMER STREET HENTY	Sewage Treatment - small plants	(notice) S 58 Licence Variation (Mar 08)	
GREATER HUME SHIRE COUNCIL	CEMETERY ROAD CULCAIRN	Sewage Treatment - small plants		
GREATER HUME SHIRE COUNCIL	KLEMKE AVENUE WALLA WALLA	Sewage Treatment - small plants	(notice) S 58 Licence Variation (Jun 08)	
GREATER HUME SHIRE COUNCIL	BATH STREET HOLBROOK	Sewage Treatment - small plants		
HYNE & SON PTY LIMITED	21 BOND STREET HOLBROOK	Wood or Timber Milling	(notice) S 58 Licence Variation (Mar 08)	Nov 06 - Nov 07 - Required number of water quality monitoring not undertaken (x1)
GEELONG LEATHER PTY LTD	116 SCHNAARS ROAD CULCAIRN	Tanning or Fellmongery		
LEIGHTON CONTRACTORS PTY LTD	YARRA YARRA ROAD N4 BATCHING PLANT, INTERSECTION HUME HWY & YARRA YARRA ROAD, LITTLE BILLABONG	Concrete Batching	New licence (Nov 07) S 58 Licence Variation (Dec 07)	
QAF MEAT INDUSTRIES PTY LTD	BUNGOWANNAH PIGGERY RIVERINA HIGHWAY BUNGOWANNAH	Composting and Related Reprocessing Pig Production		
REGMONT PTY. LIMITED	BACK HENTY ROAD CULCAIRN	Feedlot Production		
WYANGA HOLDINGS PTY LTD	HUME HIGHWAY, TABLE TOP	Hard-Rock Gravel Quarrying		
LEETON				
A.J. BUSH & SONS (YANCO) PTY LTD	A.J. BUSH & SONS (YANCO) PTY LTD, CUDGEL	Rendering or fat extraction, Slaughtering or processing of		

LICENCE HOLDER	PREMISES	ACTIVITY	CHANGE FROM 2006/07	NON-COMPLIANCE 2007/08 (x no. of incidents)
	STREET YANCO 2703	animals		
BERRI LIMITED	BERRI LIMITED, 37-39 BRADY WAY LEETON 2705	General agricultural processing		
FREEDOM FOODS PTY LIMITED	FREEDOM FOODS PTY LIMITED, 379 MURRAMI ROAD LEETON 2705	General agricultural processing	Licence transfer approved (May 2008)	
LEETON SHIRE COUNCIL	LEETON LANDFILL AND RECYCLING DEPOT, CORBIE HILL ROAD LEETON 2705	Solid Waste Landfilling		
LEETON SHIRE COUNCIL	LEETON SEWAGE TREATMENT SYSTEM, 183 FIVEBOUGH ROAD LEETON 2705	Sewage treatment - processing by small plants (< 10000 ML per year)	(notice) S 58 Licence Variation (Nov 07)	Mar 07 - Feb 08 - The pH 100%ile for reporting period was calculated at 10 (x2), The suspended solids 100%ile for reporting period was calculated at 82 mg/L (x1)
LEETON SHIRE COUNCIL	YANCO SEWAGE TREATMENT WORKS, HOUGHTON ROAD YANCO 2703	Sewage treatment - processing by small plants (< 10000 ML per year)	(notice) S 58 Licence Variation (Nov 07)	Sep 06 - Aug 07 - Concentration limit for faecal coliform exceeded (x1), Concentration limit for total suspended solids was exceeded (x1)
LEETON SHIRE COUNCIL	LEETON WATER TREATMENT PLANT, RACECOURSE ROAD LEETON 2705	Miscellaneous Licensed Discharge to Waters (at any time)		Sep 06 - Sep 07 - The limit for suspended solids was exceeded (x4), Monitoring of the volume discharged to waters was not undertaken (x10)
MURRUMBIDGEE IRRIGATION LIMITED	MURRUMBIDGEE IRRIGATION AREA & DISTRICTS, - LEETON 2705	Irrigated agriculture	(notice) S 58 Licence Variation (Mar 07, Nov 07)	
P.A. WOODS & CO PTY LTD	MILBRAE QUARRY, COLINROOBIE RD LEETON 2705	Land-based extractive activity		
P.A. WOODS & CO PTY LTD	MURRAMI QUARRY, CONTOUR ROAD MURRAMI 2705	Land-based extractive activity		
RICEGROWERS LIMITED	COPRICE FEEDS, RAILWAY AVENUE LEETON 2705	General agricultural processing		
RICEGROWERS LIMITED	GOGELDRIE RICE STORAGE SHEDS, RAILWAY AVENUE GOGELDRIE 2705	General agricultural processing		
RICEGROWERS LIMITED	MURRAMI RICE STORAGE SHEDS, SHEPPARD ROAD MURRAMI 2705	General agricultural processing		
RICEGROWERS LIMITED	WHITTON RICE STORAGE SHEDS, STEPHENSON AND BRUNEL ROADS WHITTON	General agricultural processing		

LICENCE HOLDER	PREMISES	ACTIVITY	CHANGE FROM 2006/07	NON-COMPLIANCE 2007/08 (x no. of incidents)
	2705			
RICEGROWERS LIMITED	LEETON RICE MILL, Calrose Street LEETON 2705	General agricultural processing		
ROCKDALE BEEF PTY LTD AS MANAGER FOR& ON BEHALF OF THE ROCKDALE BEEF PARTNERSHIP	ROCKDALE FEEDLOT, MEATWORKS, FEEDMILL, ASSOCIATED FARMING OPERATIONS AND ALL ANCILLARY OPERATIONS, REGULATOR ROAD YANCO 2703	Cattle, sheep or horse accommodation, Composting, General agricultural processing, Non-thermal treatment of hazardous and other waste, Slaughtering or processing of animals		
SOILWISE PTY LTD (C/- RSM BIRD CAMERON PARTNERS - LIQUIDATOR)	SOILWISE COMPOSTING FACILITY WITHIN LEETON SHIRE LANDFILL, CORBIE HILL ROAD LEETON 2705	Composting		
MURRAY				
ASSOCIATED FEEDLOTS PTY. LTD.	AMAROO PARK, SOLLYS ROAD MATHOURA 2710	Cattle, sheep or horse accommodation		
BORAL RESOURCES (VIC.) PTY. LIMITED	BORAL RESOURCES (VIC) PTY LIMITED, 8 EDDY AVENUE MOAMA 2731	Concrete works		
BUNNALOO PASTORAL CO PTY LTD	"LENIAN", NOLAN ROAD BUNNALOO 2731	Cattle, sheep or horse accommodation		
CAMBOON PTY. LIMITED	"COBRAMVALE", BALLYROGAN ROAD BUNNALOO 2731	Pig accommodation		
CLOSTER'S GROUP PTY LTD	MOAMA WASTEWATER TREATMENT WORKS HILLSIDE ROAD MOAMA	Hazardous, Industrial or Group A Waste P		
DEEP CREEK MARINA PTY LTD	DEEP CREEK MARINA PERRICOOTA ROAD MOAMA	Other Vessel Construction/Maintenance		
FUTURE FUELS AUSTRALIA PTY. LIMITED	FUTURE FUELS AUSTRALIA PTY LIMITED, HILLSIDE LANE MOAMA 2731	Petroleum products and fuel production	(notice) S 58 Licence Variation (Feb 08)	
KEMPEN; SHEILA G & S KEMPEN	"BIRCHFIELD" FITZPATRICK LANE WOMBOOTA	Pig Production	(notice) S 58 Licence Variation (Dec 07)	
MURRAY SHIRE COUNCIL	MOAMA SEWAGE TREATMENT PLANT HILLSIDE ROAD MOAMA	Sewage Treatment - small plants		
MURRAY SHIRE COUNCIL	MOAMA SOLID WASTE DEPOT CENTRE ROAD,	Solid Waste Land filling		

LICENCE HOLDER	PREMISES	ACTIVITY	CHANGE FROM 2006/07	NON-COMPLIANCE 2007/08 (x no. of incidents)
	MOAMA			
RICEGROWERS' CO-OPERATIVE LIMITED	CALDWELL RICE STORAGE SHEDS ROSELLA STREET CALDWELL	Other Agricultural Crop Processing (3)		
RITCHIE; RICHARD MICHAEL	DRUMS GO ROUND 6 EDDY AVENUE MOAMA	Drum or Container Reconditioning Hazardous, Industrial or Group A Waste P		
SYMONS; ROBERT WESLEY	OLD MOAMA SLIPWAY 1 FORBES STREET MOAMA	Other Vessel Construction/Maintenance		
NARRANDERA				
DELLAPOOL NOMINEES PTY LTD	"DELLAPOOL" DELLAPOOL ROAD NARRANDERA 2700	Miscellaneous Licensed Discharge to Waters (at any time)		
EAGLEGLLEN HOLDINGS PTY LTD	SELKO PIGGERY, MANDERLAY ROAD NARRANDERA 2700	Pig accommodation		
MANILDRA FLOUR MILLS (MANUFACTURING) PTY LTD	MANILDRA FLOUR MILLS - NARRANDERA, WHITTON STREET NARRANDERA 2700	General agricultural processing		
NARRANDERA SHIRE COUNCIL	NARRANDERA SEWAGE TREATMENT PLANT, OFF HANKINSON STREET NARRANDERA 2700	Sewage treatment - processing by small plants (< 10000 ML per year)	(notice) S 58 Licence Variation (July 07)	
PIG IMPROVEMENT COMPANY AUSTRALIA PTY LTD	PIC AUSTRALIA, BEREMBED WEIR ROAD GRONG GRONG 2652	Pig accommodation		
POWELL; GARY ROBERT	WILLAWA, LISMOYLE ROAD GRONG GRONG 2652	Pig accommodation		
STATE OF NEW SOUTH WALES (DEPARTMENT OF PRIMARY INDUSTRIES)	NARRANDERA FISHERIES CENTRE, BUCKINGBONG ROAD NARRANDERA 2700	Aquaculture and mariculture		
WAKOOL				
ROADS AND TRAFFIC AUTHORITY OF NEW SOUTH WALES	TEMPORARY RTA COMPOUND, MOULAMEIN ROAD MURRAY DOWNS 3585	Hazardous, Industrial or Group A Waste Generation or Storage	(application) New licence (withdrawn April 2008)	
COUNCIL OF THE SHIRE OF WAKOOL	MURRAY DOWNS SEWAGE TREATMENT SYSTEM, LOT 11 DP836391, MURRAY DOWNS	Sewage Treatment - small plants	Licence surrendered 2007	

LICENCE HOLDER	PREMISES	ACTIVITY	CHANGE FROM 2006/07	NON-COMPLIANCE 2007/08 (x no. of incidents)
GARRISON CATTLE FEEDERS PTY LTD	'GARRISON' MOULAMEIN ROAD MURRAY DOWNS	Feedlot Production		Oct 06 -Oct 07 - What the licence authorises and regulates - closing month stock numbers exceeded limit on 4 separate occasions (x4), Requirement to monitor concentration of pollutant discharged - sampling not done on 1 occasion at monitoring point 2 (x1), Requirement to monitor concentration of pollutants discharged - required % Water Stable Aggregates test not completed. Surrogate Emerson Aggregate Test analysis used instead (x14)
GARRISON CATTLE FEEDERS PTY LTD	"BUTLERS", SWAN HILL ROAD MURRAY DOWNS 3585	Composting	New licence approved (Dec 07)	
QAF MEAT INDUSTRIES PTY LTD	BROOKSBANK PROPERTIES PTY LTD "BALPOOL STATION" VIA MOULAMEIN	Composting, General agricultural processing, Pig accommodation		
RICEGROWERS' CO-OPERATIVE LIMITED	MOULAMEIN RICE STORAGE SHEDS CORNER OF HAY & TCHELERY ROADS MOULAMEIN	Other Agricultural Crop Processing		
RICEGROWERS' CO-OPERATIVE LIMITED	BURRABOI RICE STORAGE SHEDS WAKOOL ROAD BURRABOI	Other Agricultural Crop Processing		
SWIFT AUSTRALIA (SOUTHERN) PTY LIMITED	YAMBINYA STATION, JIMARINGLE ROAD BURRABOI 2732	Cattle, sheep or horse accommodation, Land-based extractive activity		
WENTWORTH				
ARUMPO BENTONITE PTY LIMITED	ON ARUMPO STATION WENTWORTH	Mining (Other than Coal)		
BEMAX RESOURCES NL	GINKGO MINERAL SANDS PROJECT, NOB ROAD WENTWORTH	Land-Based Extraction - Other Mining (Other than Coal) Non-Ferrous Production (excluding Aluminium) - Secondary Waste Generation or Storage - Hazardous, Industrial or Group A	(notice) S 58 Licence Variation (Dec 07)	Dec 06 - Dec 07 - No monitoring result submitted for the January 2007 dust sample (x1), Monitoring of TDS not undertaken (x1)
BEMAX RESOURCES NL	SNAPPER MINE NOB ROAD, POONCARIE	Land-Based Extraction, Mining for minerals	New Licence (Oct 07)	
CONSTELLATION AUSTRALIA LIMITED	STANLEY WINERY, SILVERCITY HIGHWAY	Grape processing		

LICENCE HOLDER	PREMISES	ACTIVITY	CHANGE FROM 2006/07	NON-COMPLIANCE 2007/08 (x no. of incidents)
	MOURQUONG 2648			
E.B. MAWSON & SONS PROPRIETARY LIMITED	MAWSON'S CONCRETE, CNR SILVER CITY HIGHWAY & CORBETT AVENUE BURONGA 2739	Concrete works	(application) licence variation (pending, July 07)	
ILINGA PTY LTD	30 RIVER DRIVE BURONGA	Other Vessel Construction/Maintenance		
LARMON PTY. LTD	ARUMPO ROAD MOURQUONG	Mining (Other than Coal)		
SIMEON WINES LIMITED	1031 SILVER CITY HIGHWAY BURONGA	Wine or Spirit Processing		
WENTWORTH SHIRE COUNCIL	BURONGA GOL GOL SEWAGE WORKS, ALCHERINGA DRIVE GOL GOL	Sewage treatment - processing by small plants (< 10000 ML per year)	S 58 Licence variation (Aug 07)	
WENTWORTH SHIRE COUNCIL	POONCARIE ROAD WENTWORTH	Sewage treatment - processing by small plants (< 10000 ML per year)	S 58 Licence variation (Aug 07)	
WENTWORTH SHIRE COUNCIL	LAGOON ROAD OFF CADELL STREET WENTWORTH	Sewage treatment - processing by small plants (< 10000 ML per year)	S 58 Licence variation (Aug 07)	
WENTWORTH SHIRE COUNCIL	KOOKABURRA DRIVE DARETON	Sewage treatment - processing by small plants (< 10000 ML per year)	S 58 Licence variation (Aug 07)	
WESTERN MURRAY IRRIGATION LTD	WESTERN MURRAY IRRIGATION - DARETON 4659	Irrigated Agriculture	(notice) S 58 Licence Variation (March 08)	

(Source: DECC 2007a)

4.3 WATER

It is a generally accepted common goal that water should support healthy communities of plants and animals, as well as meeting the direct requirements of humans in production of harvested plants and animals, in recreational activities such as swimming, fishing, and in the provision of aesthetic surroundings.

Within the region, various types of water resources are to be found including major rivers within the Murray-Darling Basin such as the Murray, Murrumbidgee and Darling, man-made lakes and reservoirs of a wide range of sizes, groundwater systems, and areas which cross between land and water, the wetlands.

In fresh water systems humans are now realising the significance of biological flow as a constraint to amount of water that can be withdrawn from river systems for irrigation or for industrial or community purposes.

There is often a perception of the quality of water and the ecosystem that does not accord with the natural variability of these systems. Recreational amenity of lakes and streams is measured in terms of their water clarity, freedom from visible turbidity and scums, and visible evidence of aquatic life. Similarly, the quality of a water supply is judged in terms of its reliability and aesthetics.

However, for Australian inland streams, the stream flow and associated water quality naturally vary. Conditions may swing from low flows to floods. Native organisms have not only adapted to this variability, they may even require it.

Until recently, there has been a European-based approach to managing water resources in a manner consistent with maintaining urban amenity and agricultural productivity. The substantial exploitation of available water supplies has meant the end of the old approach of simply building more dams to sustain the water supply. In its place, a demand management and risk-based management approach is now emerging.

There has also been an attitude of preservation that fails to recognise natural change. For example, some wetlands are lakes in transition to terrestrial plains; or, occasionally, fauna may be severely stressed by natural events - but this may be helpful in an evolutionary sense. In the same vein, the occasional incidence of algal blooms is a natural phenomenon. Of course, changes in land use and waste discharges have resulted in a substantial increase in both the severity and frequency of algal blooms, and could affect the dominant algal species when blooms do occur.

Rainfall

The Department of Primary Industries (DPI) in NSW releases a new drought map each month. The drought maps are prepared from information provided by the 48 Rural Lands Protection Boards (RLPB) around the state, rainfall details from the Bureau of Meteorology (BoM) and reports from DPI regional staff. The image below shows the RLPB areas relevant to this SoE.



The LGAs featured in this report fall into the Balranald-Wentworth, Hay, Narrandera, Riverina, Murray or Hume RLPBs

Drought classification of an area takes into account:

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

NSW Government assistance measures require that a RLPB district be in the drought-affected category for six months before landholders are eligible for financial assistance.

The monthly drought status for each of the RLPB districts in the subject region for the reporting period is shown in Figure 8. Generally, seasonal conditions were more favourable in the eastern part of the region than the west but have been poor overall. However, for the last reporting period the majority of the region was classed as being 'in drought'. It must be noted that for part of the reporting period half of the Hume RLPB District was mapped as 'marginal', whereas all other districts were listed as 'in drought' for the entire period.

Figure 8: Seasonal conditions 2007/08

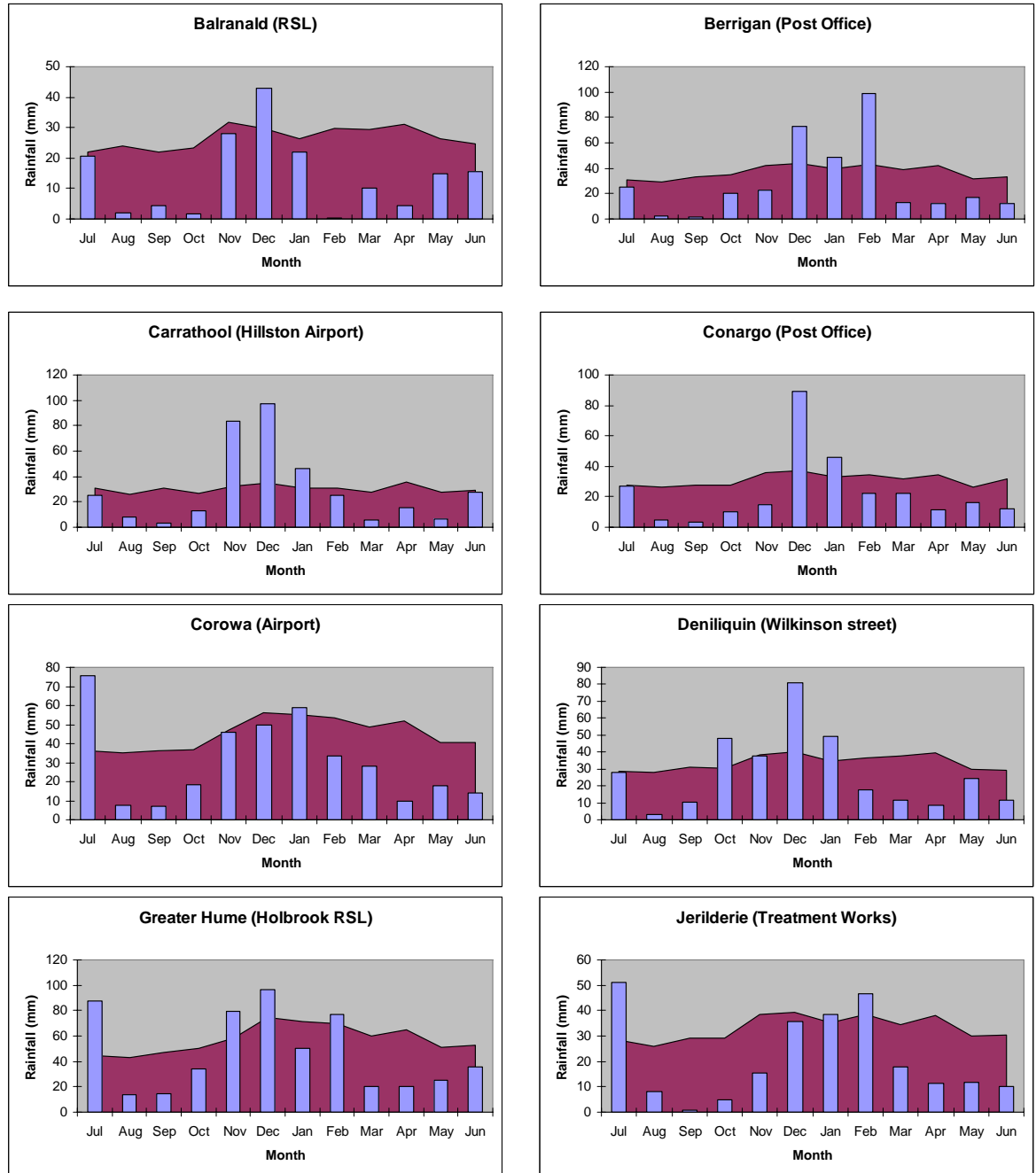
RLPB DISTRICT	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
Balranald-Wentworth	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED
Hay	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED
Riverina	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED
Murray	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED
Narrandera	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED	RED
Hume	RED	RED	RED	RED	RED	RED	ORANGE	ORANGE	ORANGE	RED	ORANGE	RED

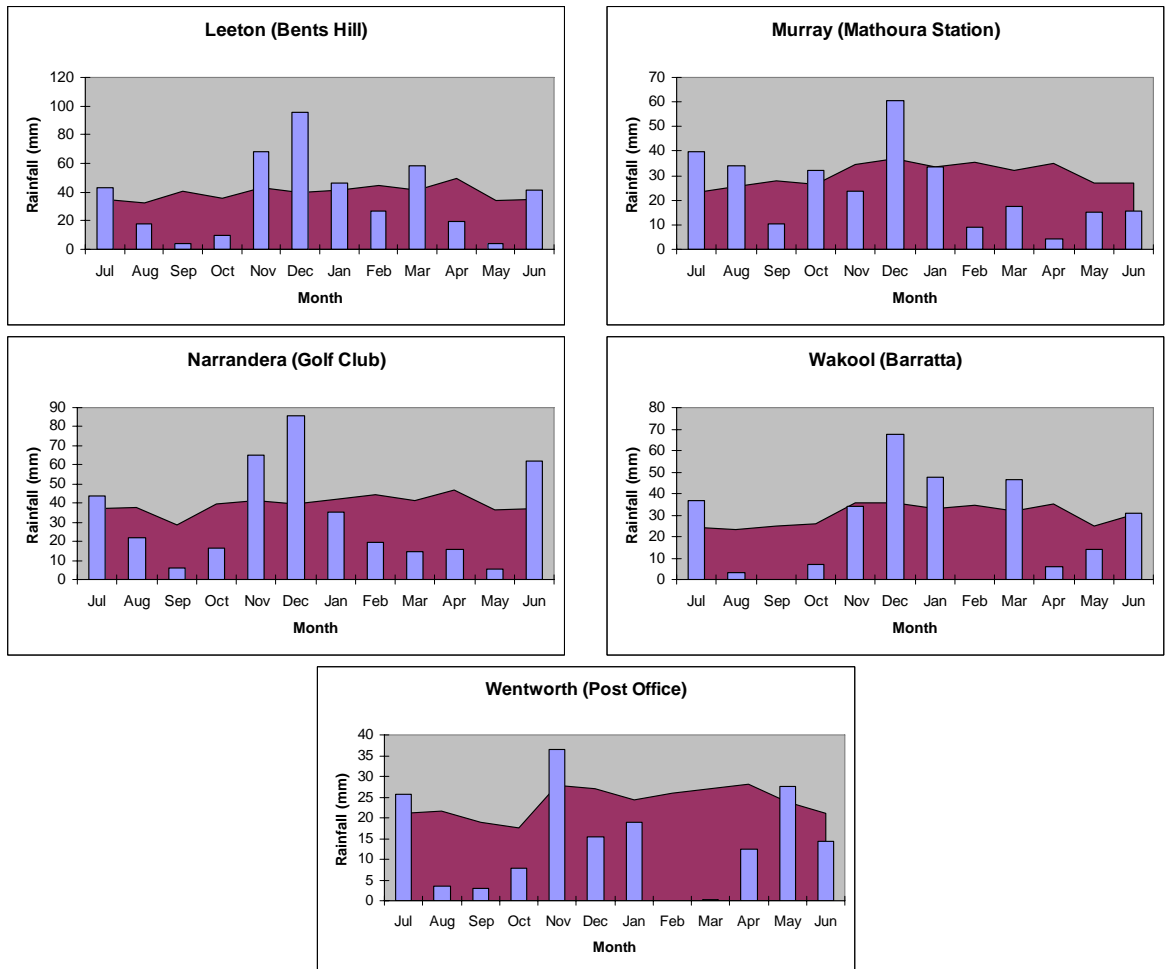
RED = in drought ORANGE = Marginal GREEN = Satisfactory

(Source: Department of Primary Industries 2008)

Figure 9 shows most areas across the region experienced higher than average rainfall in the summer months and lower than average in the winter, spring and autumn months. This weather may be a result of previous year's drought or of climate change.

Figure 9: Monthly rainfall 2007/08 (blue) against the historical average (maroon)





(Source: Bureau of Meteorology 2008)

Water use

Water is taken from streams and groundwater for a large number of purposes such as domestic use, agricultural use and industrial uses.

The amount of water used is of concern to SoE reporting because the impact on stream flow can be significant, placing pressure of aquatic ecosystems and limiting the amount of water available for downstream users. The need to ensure adequate flow for aquatic ecosystems is the reason that environmental flow regulations have been enacted in most jurisdictions.

Total water consumption tends to increase as human population increases. This can require the construction of extra water supply reservoirs to meet the increased demand for water, thus placing further pressure on the natural environment. Where this is not possible, it is necessary to investigate alternative sources of water, reduce per capita consumption of water, or to introduce water restrictions, typically the case in the summer months in some areas.

The following table displays data from the 13 LGA's in the region indicating their approach to the points raised in the previous paragraph.

Table 12: Water consumption & charges 07/08

LGA	Water Restrictions Imposed	Excess Water Charges and Calculations	Average Annual Household Water Consumption	Increase In Water Supply
Balranald	Yes Level 3 – Balranald, Level 4 - Euston	No	221000L	No
Berrigan	01/07/07 to 23/09/07 = Stage 4 Restrictions 24/09/07 to 31/12/07 = Stage 3A Restrictions 01/01/08 to 30/06/08 = Stage 3 Restrictions.	Consumption based (User Pays) charging for water use has in fact been in since 01/07/06 – NOT EXCESS Tariffs in 2007/08 were = \$0.06 c/Kl (Tocumwal – single supply system) = \$0.90 c/Kl Treated (potable) Supply, & = \$0.45 c/Kl Unfiltered (garden) Supply (Dual Supply systems in Barooga, Berrigan & Finley).	250 000L	Testing of system at Finley and Tocumwal for leaks and sealing as required to reduce wastage. New water towers at Tocumwal and Finley commissioned
Carrathool	Yes Restricted watering with raw water supply at Goolgowi to 2 hours per day	No	-	-
Conargo	Yes Level 3a modified	Introduced user pay system on 1 July 07. Service charge from \$150.00 to \$50.00. Water is charged at 25c a kilolitre.	687000 L	No
Corowa	Yes	Yes	220 000 L	No
Deniliquin	Yes Stage 4 - 12/03/07 - 24/09/07 Stage 3A - 24/09/07 - 19/01/08 Stage 3 - 19/01/08 - present	No	400 000 L	Yes, emergency bore supply
Greater Hume	Yes Stages 3, 3A and 4 at various times as directed by Minister	No	238 000 L	No, consumption down from 348kl to 238kl

LGA	Water Restrictions Imposed	Excess Water Charges and Calculations	Average Annual Household Water Consumption	Increase In Water Supply
Jerilderie	Yes Stage 3a restrictions in place in accordance with State Government requirements.	Residential 0-250kL - \$1.05 per kL; over 250kL - \$1.40 per kL (filtered water) Raw water - \$0.48 per kL	240 000 L	Yes, Council is currently looking for a suitable site for bore for secondary town supply. Works are ongoing
Leeton	Yes Level 3 Restrictions in place from 1 Jul 07 to 31 May 08. Level 1 Restrictions from 1 Jun 08 to 30 Jun 08	Access Charge: 20mm & 25mm water service \$175.00 (same as for 06-07) Usage Charge: for the first 350kl - 50 cents per kl (same as for 06-07) Thereafter - 75 cents per kl (increased from 67 cents per kl for 06-07)	460 000 L	Nil
Murray	Yes July - Sep 07: Stage 4 Oct - Jan 08: Stage 3a Jan - Jun 08: Stage 3	Nil	170 000 L	No
Narrandera	Yes No fixed sprinkler, no washing cars	Access charge 20-25mm water service \$220, usage charge 59.5c per kL increase of 3.2c per kL	-	No
Wakool	Yes Stage 3	Nil	613 000L	No
Wentworth	Yes July - 20 Sept 2007 Level 4 20 Sept - 23 March 2008 Level 3A 23 March 2008 - present Level 3	Nil	450 000L	No

(Information sourced from relevant Councils)

The following regions experienced flooding during 2007/08.

- Carrathool - Christmas eve and early in the new year (storm water only).

- Greater Hume - two streets in Jindera experienced local flooding from stormwater.

Potable water quality

No new data in regards to potable water was available for this period at the time of reporting.

Water storage

The three major water storages servicing the irrigation areas of the Murray region are Hume, Burrinjuck and Blowering (see map opposite). Also in the area or supplying to area are Lakes Cargelligo, Brewster and the Menindee Lakes. Lake Victoria, while not supplying the area has been included as it receives water from the area. Figure 10 shows that Blowering, Cargelligo and Menindee finished the year higher than the previous year, with Cargelligo and Menindee showing massive and sudden increases, likely due to December flooding in the upper parts of the Darling and Lachlan Catchments. Burrinjuck and Hume stayed above the previous year's levels, with Hume finishing slightly below the previous year. Lake Brewster has been extremely low for both years.

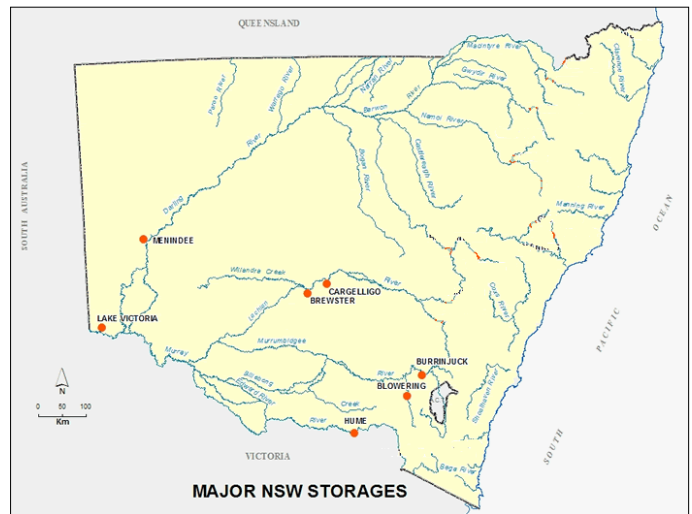
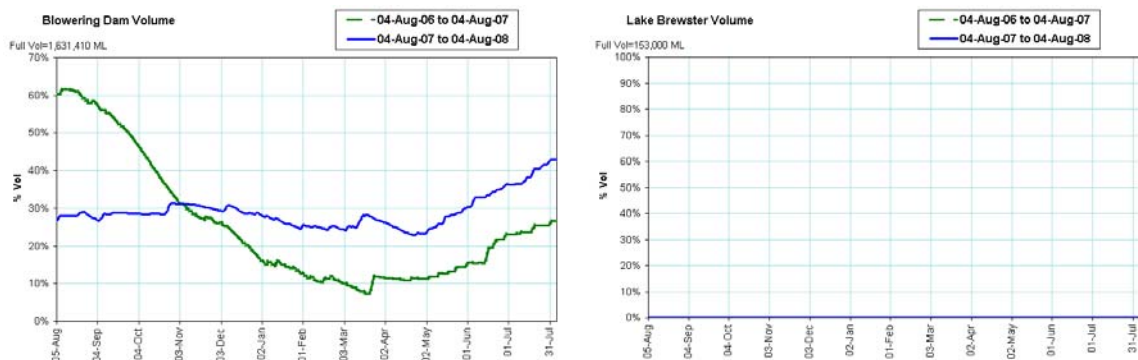
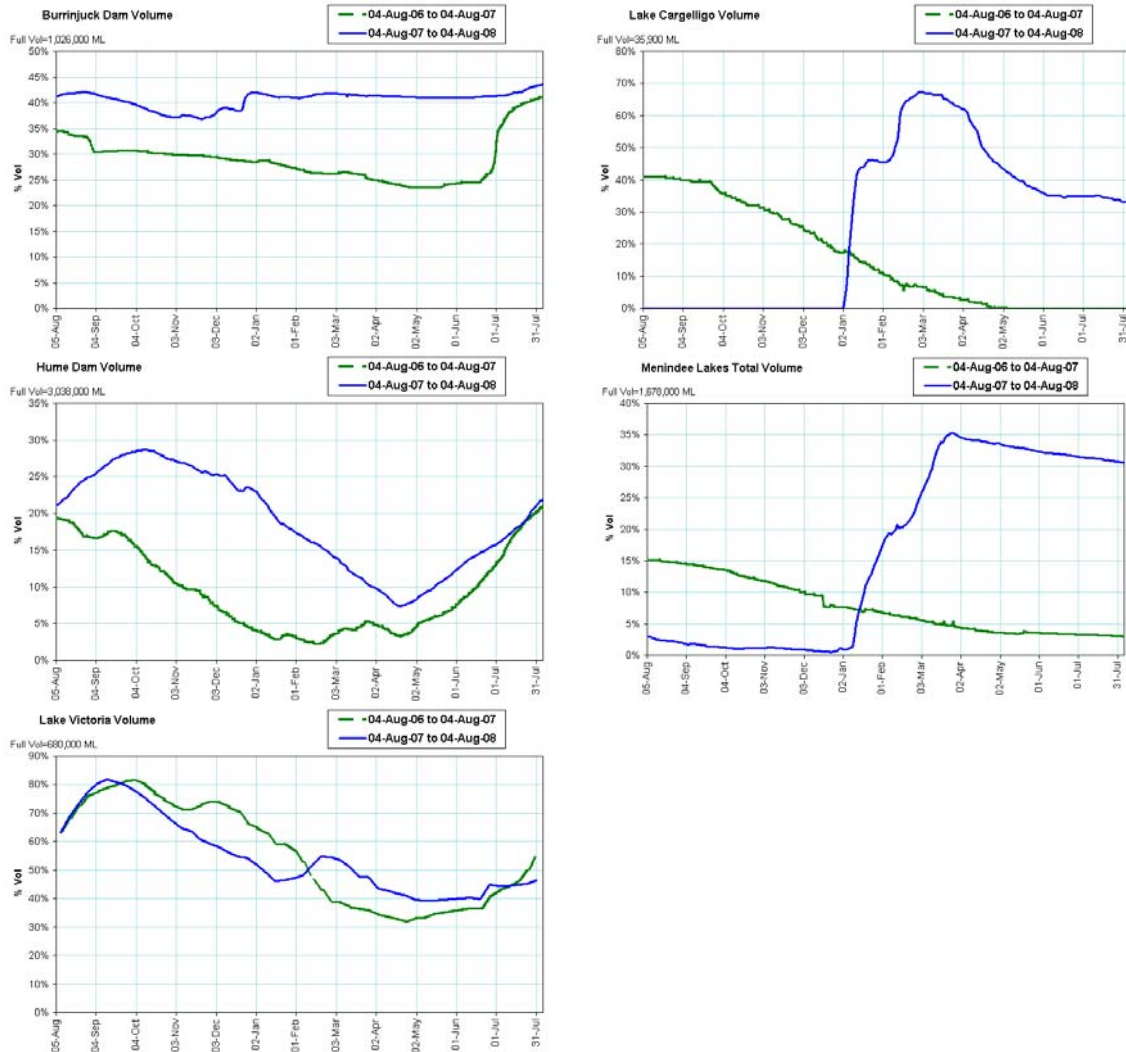


Figure 10: Levels of water storages servicing the region 2007/08





(Source: Waterinfo 2008)

River quality

Algae are the simplest form of plant life. A count of all the algae present (as measured by chlorophyll-A levels) is used to indicate the productivity of aquatic systems. In conditions of warm, poorly mixed, nutrient rich waters, algal counts may grow to extremely high densities. The table below details the number of reported algae outbreaks for each LGA. The amounts of algae and blue-green algae are of interest to SoE reporting because these reflect the impact of human activity and other environmental factors on the aquatic environment, and also the suitability of water for continued use by humans and other species. Blue-green outbreaks during the 2007/08 are recorded in Table 13.

Table 13: Outbreaks of blue-green algae during 2007/08

LGA	Were there blue-green algae outbreaks	How many outbreaks	Duration of outbreak	Outbreaks Last year

LGA	Were there blue-green algae outbreaks	How many outbreaks	Duration of outbreak	Outbreaks Last year
Balranald	No	-	-	1 lasting ? weeks
Berrigan	No	-	-	1 lasting 8 weeks
Carrathool	Yes	1	6 weeks	Unknown
Conargo	No	-	-	None
Corowa	Yes	1	6 months	3 lasting 12 weeks
Deniliquin	Yes	1	2 weeks	None
Greater Hume	No	-	-	None
Jerilderie	No	-	-	1 lasting 8 weeks
Leeton	Yes	Nil 'Red' (i.e. toxic) alerts in the town water Note: Two 'Amber' alerts requiring action	8 weeks	Unknown
Murray	No	-	-	1 lasting 8 weeks
Narrandera	No	-	-	Unknown
Wakool	No	-	-	Numerous lasting several weeks
Wentworth	No	-	-	1 lasting 6 months

(Information sourced from relevant Councils)

Salinity levels within rivers are an indicator of water quality and therefore river health. Salinity levels can be ascertained by measuring the electrical conductivity of water. A measure of the ability of water to conduct an electric current between electrodes relates to the nature and amount of salts present in the water and increases with concentration. The measurement is usually expressed in microsiemens per centimetre ($\mu\text{S}/\text{cm}$).

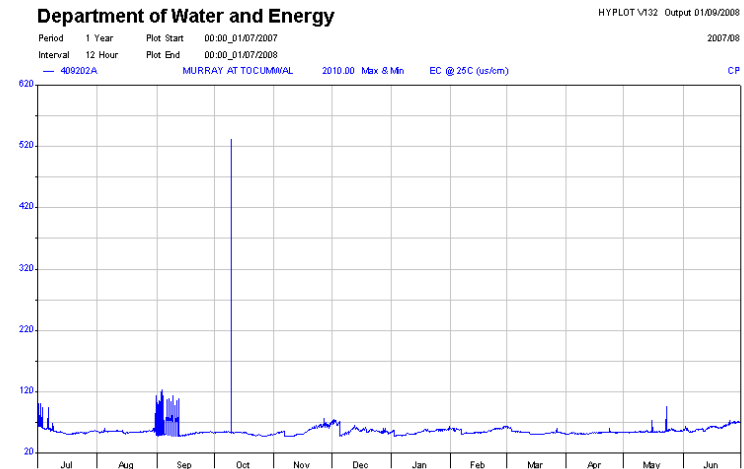
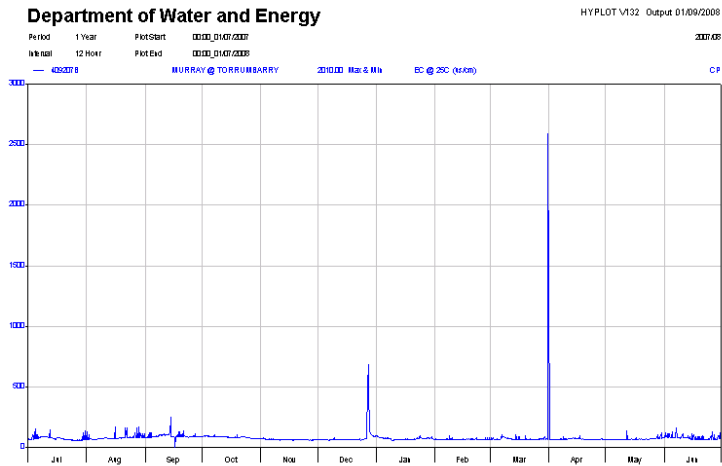
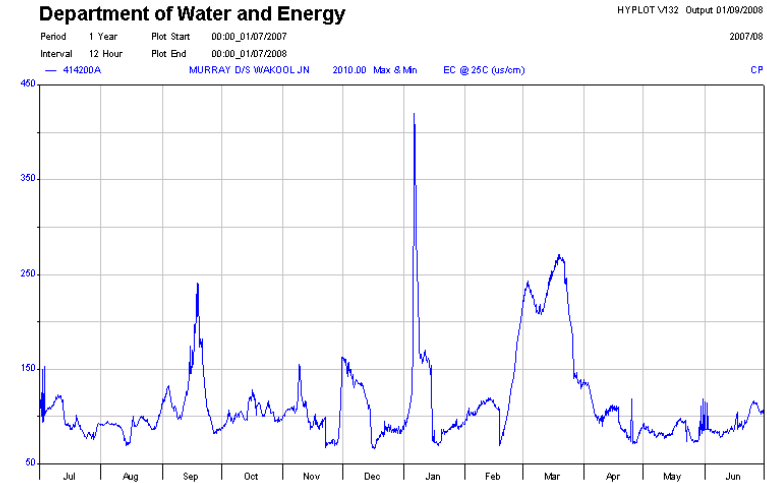
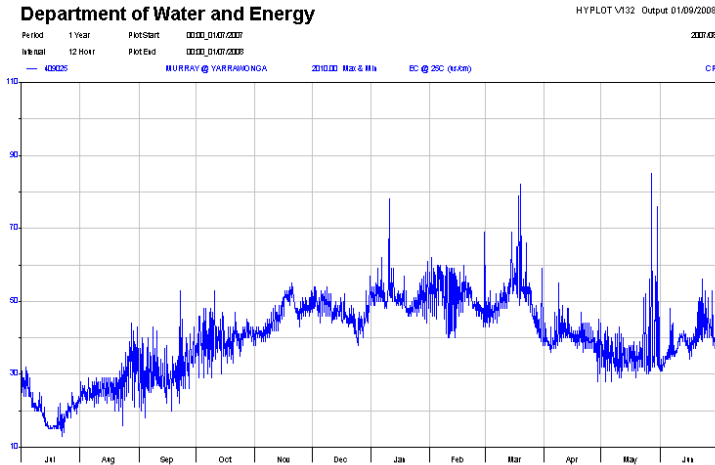
Figure 11 shows the results of monitoring electrical conductivity at various locations within the region's rivers for 2007/08. Note that the graphs are at differing scales.

The Murray River is consistently between 40 and 60 EC most of the time from Howlong through to Barmah, though the readings at Wakool were closer to 100.

The Wakool River at Wakool fluctuated from 65 to 160 to 10 EC, the Edward River at Deniliquin around 75 and at Moulamein it is about 125, the Murrumbidgee River at Balranald averaged around 250, while Billabong Creek in Walbundrie averaged around 2000

Please note these values are estimated from the charts below.

Figure 11: Salinity levels in the regions rivers



Department of Water and Energy

HYPLOT V132 Output 01/09/2008

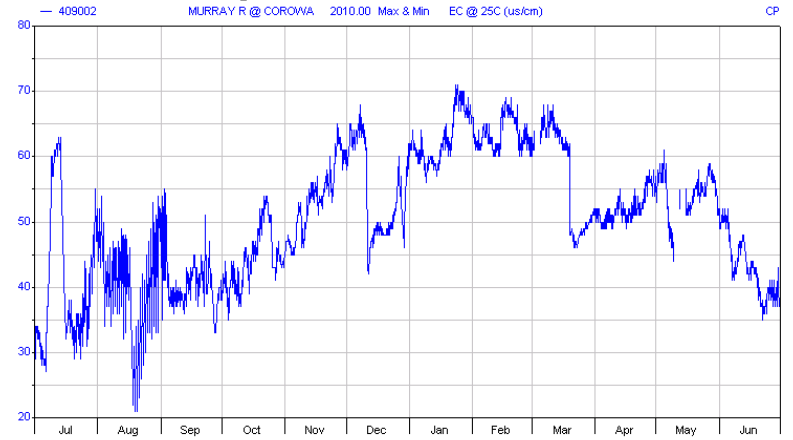
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Interval 12 Hour Plot End 00:00_01/07/2008



Department of Water and Energy

HYPLOT V132 Output 01/09/2008

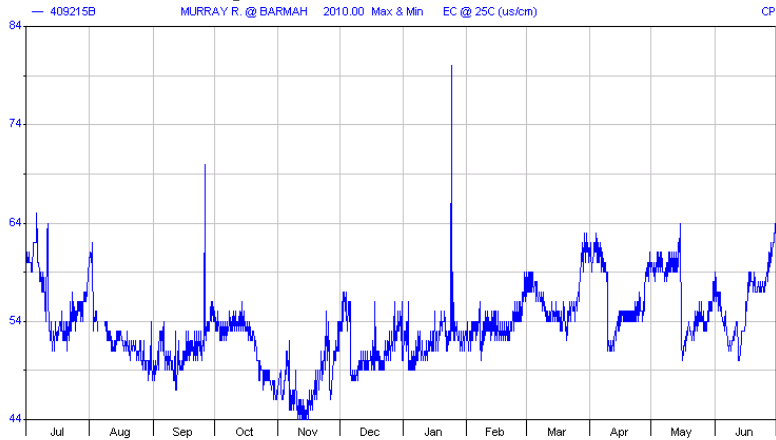
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Interval 12 Hour Plot End 00:00_01/07/2008



Department of Water and Energy

HYPLOT V132 Output 01/09/2008

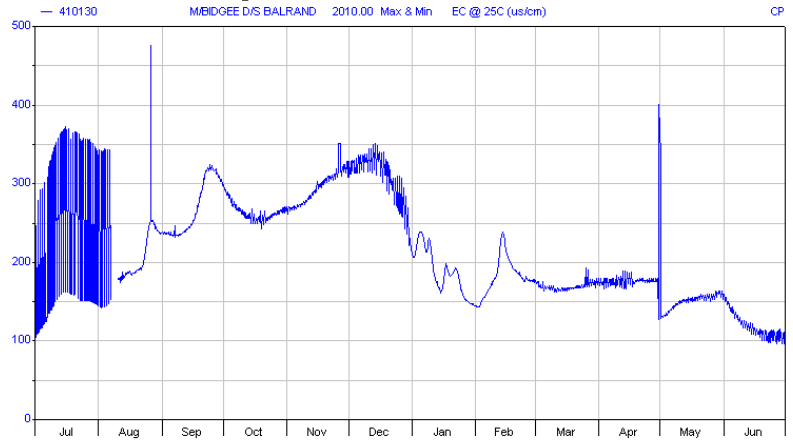
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Interval 12 Hour Plot End 00:00_01/07/2008



Department of Water and Energy

HYPLOT V132 Output 01/09/2008

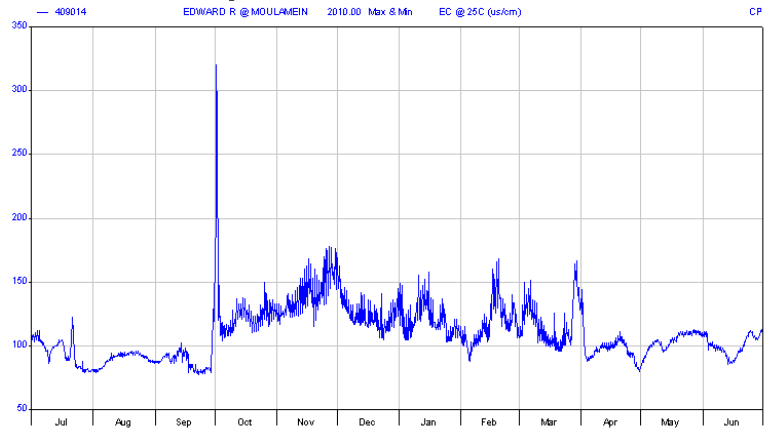
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HYPLOT V132 Output 01/09/2008

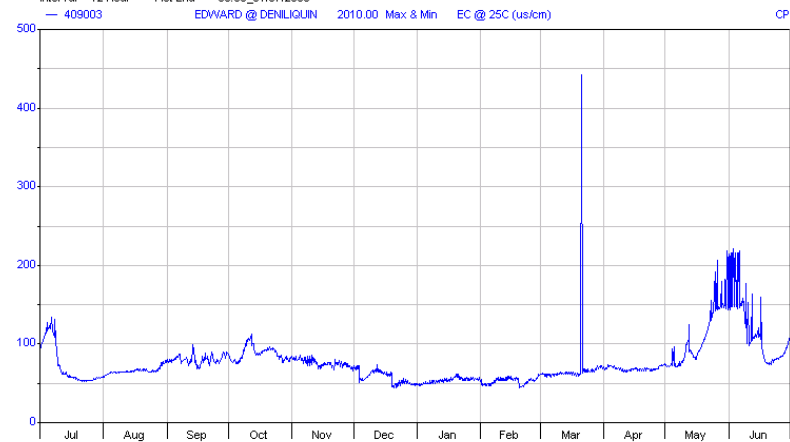
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Interval 12 Hour Plot End 00:00_01/07/2008



Department of Water and Energy

HYPLOT V132 Output 01/09/2008

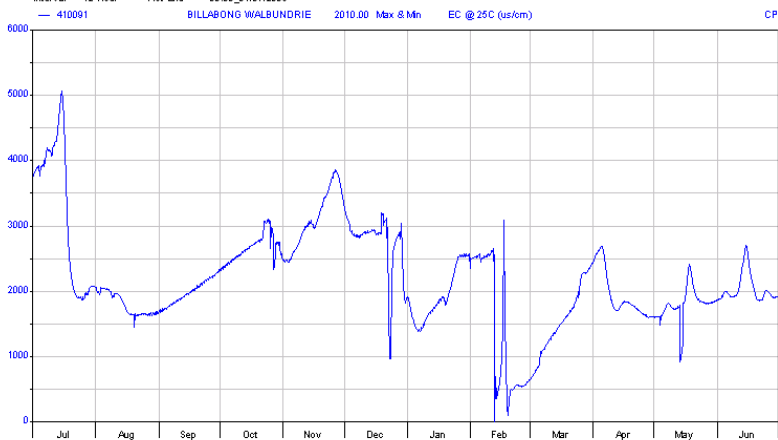
Period 1 Year Plot Start 00:00_01/07/2007 2007/08
Interval 12 Hour Plot End 00:00_01/07/2008



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HYPLOT V132 Output 01/09/2008

Period 1 Year Plot Start 00:00_01/07/2007 2007/08
Interval 12 Hour Plot End 00:00_01/07/2008



Department of Water and Energy

HYPLOT V132 Output 01/09/2008

Period 1 Year Plot Start 00:00_01/07/2007 2007/08
Interval 12 Hour Plot End 00:00_01/07/2008



(Source: Waterinfo 2005)

Stormwater discharge

The following councils advised of changes to stormwater discharges and/or associated works.

- Carrathool conducted stormwater works associated with the reconstruction of High Street.
- Corowa and Berrigan both undertook stormwater works.
- Deniliquin conducted work on the South Deniliquin Drainage.

Balranald, Conargo, Greater Hume, Jerilderie, Leeton, Narrandera, Wentworth and Wakool did not conduct stormwater works during this period.

Wetlands

No new data in regards to wetlands was available for this period at the time of reporting.

Groundwater quality

No new data in regards to ground water was available for this period at the time of reporting.

4.4 BIODIVERSITY

There are two quite different fundamental needs that have to be met before it can be ensured that biodiversity is being conserved both for its intrinsic value and for its benefits to humans (including aesthetic and cultural benefits as well as material benefits such as improved agricultural productivity).

The first is philosophical. There must be a concept of stewardship, such that, as humans, we accept a fundamental responsibility to protect biodiversity, and to leave it to the next generation in at least as healthy a condition as it was left to us. An associated requirement is to apply the 'precautionary principle' - that it is better to err on the side of caution than otherwise, as a species or community once gone can never be recovered.

The second requirement is more pragmatic and is a need to know exactly what constitutes the current biodiversity situation, so that changes can be recognised, and corrections made as necessary. This is obviously easier said than done, but at the very least the existence and status of species and communities of concern in region need to be known. Initially such species and communities will be those specified in 'threatened species' legislation, but the process of such listing is very much ongoing, and a concerned management authority must also take account of other species and communities of local concern.

Native flora & fauna

Changes in patterns of the number of species of living organisms and their relative abundance in a given area can occur naturally – either seasonally or after significant events such as fire or storms. However, a significant loss of native species from an area is generally a clear indicator of major ecosystem disturbance such as habitat loss or predation/competition from introduced species.

It can be difficult to identify all species in an area, and even more difficult to monitor their populations. A significant decline in the abundance and condition of a particular species can be indicative of general trends for native species in the area in general.

No Councils within the study area reported any changes to biodiversity in their region during 2007/08.

Narrandera undertook a vegetation survey for Burley Griffin Way under a \$5000 grant.

NSW Environmental Trust Grants 2007

Environmental Restoration and Rehabilitation Program State and Local Government Grants 2007

- DPI (Fisheries) - Fish Friendly Farms Stage 2; Demonstration Farms (FFF2) (\$100 000)

Environmental Restoration and Rehabilitation Program Community Grants 2007

- Riverina and South West Slopes Nature Based Tourism Group - Promotion, Rehabilitation and Restoration of Riverine Bird Habitats (\$97 940)

Table 14: Relevant new listings under the Threatened Species Conservation Act 2007/08

<i>Name</i>	<i>Date</i>	<i>Final/Preliminary</i>
July 07		
-	-	-
August 07		
-	-	-
September 07		
-	-	-
October 07		
Loss of Hollow-bearing Trees - key threatening process listing	October 05, 2007	FINAL
November 07		
Forest eucalypt dieback associated with over-abundant Bell Miners and psyllids - proposed key threatening process declaration	On exhibition 30 November 2007 - 25	PRELIMINARY

	January 2008	
Invasion and establishment of Scotch broom - key threatening process listing	November 09, 2007	FINAL
December 07		
-	-	-
January 08		
-	-	-
February 08		
-	-	-
March 08		
<i>Allocasuarina luehmannii</i> Woodland in the Riverina and Murray-Darling Depression bioregions - Endangered Ecological Community listing ¹	28 March 2008	FINAL
<i>Pterostylis despectans</i> (terrestrial herb) - critically endangered species listing ²	28 March 2008	FINAL
Sandhill Pine Woodland in the Riverina, Murray-Darling Depression and NSW South Western Slopes bioregions - Endangered Ecological Community listing ³	28 March 2008	FINAL
Sloane's Froglet <i>Crinia sloanei</i> - vulnerable species listing ⁴	28 March 2008	FINAL
April 08		
<i>Prasophyllum</i> sp. Moama - proposed critically endangered species listing ⁵	On exhibition 18 April 2008 – 13 June 2008	PRELIMINARY
<i>Prasophyllum</i> sp. Moama - rejection of endangered species listing ⁵	18 April 2008	FINAL
1080 poison baiting used for the control of vertebrate pest animals - rejection of key threatening process listing	18 April 2008	FINAL
May 08		
<i>Tylophora linearis</i> - proposed vulnerable species listing ⁶	On exhibition 23 May 2008 - 18 July 2008	PRELIMINARY
June 08		

-	-	-
Notes		
<p>¹ <i>Allocasuarina luehmannii</i> Woodland has been recorded in the southern part of the Riverina bioregion from near Urana and Mulwala in the east to the Barham district, and may extend as far west as Euston in the southern part of the Murray-Darling Depression bioregion. The community occurs in small patches within this range and is currently estimated to cover less than 500-1500ha (Benson et al. 2006). It is currently known from the Balranald, Berrigan, Conargo, Corowa, Deniliquin, Murray and Wakool Local Government Areas, but may occur elsewhere in the Riverina and Murray-Darling Depression bioregions.</p> <p>² In New South Wales the species is known only from a single population discovered in 2005 near Moama, in the Riverina Bioregion (<i>sensu</i> Thackway and Cresswell 1995). The site is within the Murray Local Government Area. Several surveys of Riverina grassland and regional Travelling Stock Reserves (TSR), including McDougall <i>et al.</i> (1993), Benson <i>et al.</i> (1997), Webster (1999), and McNellie <i>et al.</i> (2005), did not record <i>P. despectans</i> and it seems likely that the species is extremely rare in New South Wales.</p> <p>³ Examples of Sandhill Pine Woodland have been recorded from Kalyarr, Mallee Cliffs, Mungo, Oolambeyan and Willandra National Parks, and Tarawi Nature Reserve (Morcom and Westbrooke 1990, Westbrooke and Miller 1995, Roberts and Roberts 2001, Porteners 1998, Benson et al. 2006). However, some of these reserves contain only a few hectares of the community, and all exhibit signs of degradation associated with past land uses and the continuing impacts of feral herbivores. Examples of Sandhill Pine Woodland with a diverse and healthy understorey that retain its native shrub component and contain a low abundance and diversity of weed species, are extremely rare in the region (Stafford and Eldridge 2000, DEC in litt.).</p> <p>⁴ <i>Crinia sloanei</i> has been recorded from widely scattered sites in the floodplains of the Murray-Darling Basin, with the majority of records in the Darling Riverine Plains, NSW South Western Slopes and Riverina bioregions in New South Wales (<i>sensu</i> Thackway and Cresswell 1995). It is typically associated with periodically inundated areas in grassland, woodland and disturbed habitats.</p> <p>⁵ <i>Prasophyllum sp.</i> 'Moama' (D.L. Jones 19276) is known in NSW from only one locality, discovered in 2005, near Moama. The site is in the Murray Local Government Area, and the Riverina Bioregion of Thackway and Cresswell (1995). Several previous surveys of Riverina grassland and regional Travelling Stock Reserves in New South Wales (including McDougall et al. 1993, Benson et al. 1997, Webster 1999, and McNellie et al. 2005) did not detect the species. The species is not endemic to New South Wales, occurring also in Victoria in small to moderate-sized populations within a radius of about 50 km from Echuca (Rouse 2002).</p> <p>⁶ <i>Tylophora linearis</i> occurs from southern Queensland into central NSW as far south as Temora. Most records are from the Dubbo region with scattered populations also recorded in the Baradine and Barraba districts. At the time of the original description in 1992, just four localities were known, but targeted searches in 2003 revealed several additional populations in Goobang National Park, Coolbaggie Nature Reserve, and Eura, Pilliga West, Cumbil and Goonoo State Forests (Forster et al. 2004). The total number of confirmed populations now stands at 10 although it is considered likely that other unconfirmed records may also be referred to this species (Copeland 2008).</p>		

New Species Recovery Plans 2007/08

No Species Recovery Plans which are applicable to this report were approved during the reporting period.

Vegetation clearing

Clearing vegetation is one of the major pressures on terrestrial ecosystems – both native ecosystems and agricultural lands. For this reason it is a key indicator in SoE reporting. In December 2005, the responsibility for the regulation of vegetation clearing in rural areas was transferred from local government to the Catchment Management Authorities. Councils can still control vegetation in urban areas, mainly through the use of Tree Preservation Orders.

Councils participating in this SoE report advice as follows in regards to vegetation clearing activities (see Tables 15 and 16).

Table 15: Vegetation clearing activities 2007/08

LGA	Tree Preservation Order	Applications for vegetation clearing	Roadside Management Plan	Permit required for firewood collection
Balranald	No	-	No	No
Berrigan	Not within Village or Urban zone	-	Yes, BSC Vegetation Management Plan Central Murray Roadside Vegetation Survey and Management Guidelines Linear Reserves Project	Yes, none issued 07/08
Carrathool	Yes	2	No	No
Conargo	Yes, DCP No2 requires approval for tree removal in designated sandhill areas	0	Yes	No
Corowa	Yes, in urban areas	6	Yes, Roadside Vegetation Management Guidelines	Yes, 114 issued 07/08
Deniliquin	No	115 applications for tree reports	Yes	No
Greater Hume	Yes, on Council land	3	Yes, roadside vegetation plus 3 individual management plans for high conservation areas	Yes, 180 issued 07/08
Jerilderie	Some parts	Nil	Yes	Yes
Leeton	No	-	Yes, Council has a tree management policy	No
Murray	No	No	Yes, Vegetation and sediment control management plan	No
Narrandera	No	-	Yes, forms part of council's quality assurance document	No
Wakool	No	-	Yes, Wakool Shire Roadside Vegetation & Management Guidelines	No
Wentworth	No	-	No	No

(Information sourced from relevant Councils)

Table 16: Vegetation clearing requirements

LGA	Requirements for replacement/offsets for vegetation removal
Balranald	None

LGA	Requirements for replacement/offsets for vegetation removal
Berrigan	Landscaping is required as part of general development. The Murray Catchment Management Authority manages the administration of the Native Vegetation Act 2003 and negotiates the requirements for a property vegetation plan when clearing applications are received. Council does not have a tree preservation order applicable to the village or urban zone.
Carrathool	Ratio 5:1
Conargo	None
Corowa	None
Deniliquin	Yes
Greater Hume	For urban streets individual assessment
Jerilderie	As per PVP requirements
Leeton	None
Murray	Yes depending on site
Narrandera	None
Urana	-
Wakool	None
Wentworth	None

(Information sourced from relevant Councils)

Weeds

Noxious weed control on roads and reserves is an important component of most Council's weed management plans. Under the arrangements, Councils and RLPB's can apply for Operational Grants to assist in the treatment of specific weeds on roads and other land. Priority is given to implementing agreed State and regional weed management plans.

For 2007-08 \$4,806,400 has been allocated for weed control coordination. A further \$248,000 for the Weeds Officer Training Program 2006-09; \$167,000 for Publications 2006-09 and \$83,000 for Media Promotion 2006-09.

Table 17: Weed control coordination funding for 2007/08

LGA	\$
Balranald	\$22 500
Berrigan	\$85 585
Carrathool	\$30 500
Conargo	\$108 070
Corowa	\$43 000
Deniliquin	\$3 987
Greater Hume	\$67 000
Jerilderie	\$17 100
Leeton	\$22 300
Murray	Unknown

Narrandera	\$27 500
Wakool	\$51 000
Wentworth	Nil

(Source: DPI and relevant Councils 2008)

During 2007/08 a total of \$283,000 has been provided to the Eastern and Western Riverina for new and continuing group projects. These projects and budget allocations are listed in Table 18.

Table 18: New & continuing group project budget allocations for 2007/08

Group	\$
Eastern and Western Riverina Rare and Isolated St Johns Wort 2006-2011	61,000
Eastern and Western Riverina Alligator Weed Wah Wah Irrigation District 2006-2011	16,000
Eastern and Western Riverina Hardhead Thistles 2004-2009	2,000
Eastern and Western Riverina Silverleaf Nightshade 2004-2009	57,000
Eastern and Western Riverina Prairie Ground Cherry 2006-2011	13,000
Eastern and Western Riverina Serrated Tussock 2006-2011	5,000
Eastern and Western Riverina Chilean Needlegrass 2006-2011	7,000
Eastern and Western Riverina Coolatai Grass 2005-2010	19,000
Eastern and Western Riverina Lower Murray Darling Regional Weed Strategy 2005-2010	48,000
Eastern and Western Riverina Noxious Weeds Project Officer 2007-2010	35,000
Eastern and Western Riverina Black Willow in Murray and Murrumbidgee Catchments 2007-2012	20,000
Total	283,000

(Source: DPI 2008)

Council's commitment to weed control during the 2007/08 period is detailed in Table 19.

Table 19: Council's commitment to weed control during 2007/08

LGA	Commitment to weed control	Undertake biological weed control trials?	Undertake weed spraying programs?	Undertake weed mapping?	Undertake waterway inspections?
Balranald	Yes, Council has a policy to combat noxious weeds in conjunction with the LMDCMA Regional Weeds Strategy, and included in Councils Management Plan	No	Yes	Yes	No
Berrigan	Yes, Weed control in BSC undertaken by Central Murray County Council for declared noxious weeds (CMCC = Berrigan / Deniliquin / Murray and Conargo Shire Councils.)	-	Yes, Council spraying of roadside verges to maintain visibility of guide posts	-	-
Carrathool	Yes, Biological control programs currently underway: Cochineal on invasive pear varieties Competitive grass species in the management of spiny bur grass	No	Yes, Spraying program centres on priority weeds for the western Riverina The aim of Council's spraying program is to treat the plants prior to flowering to prevent seed set; sites are sprayed then reinspected to determine the need for reapplication.	Yes	Yes, Mirrool Creek (inspected for alligator weed)

LGA	Commitment to weed control	Undertake biological weed control trials?	Undertake weed spraying programs?	Undertake weed mapping?	Undertake waterway inspections?
Conargo	Yes, Council engages Central Murray County Council to carry out weed spraying of all roads and tree plantations each year, undertake regular patrols for noxious weeds and carry out weed mapping	No	Yes	Yes	No
Corowa	Yes, Policy under review / Roadside control program / Inspection Murray River for aquatic weeds	No	Yes	No	Yes
Deniliquin	Yes	No	Yes, Spraying wetland with RoundUp Bio, roadside with RoundUp, broadleaf in parks and gardens with Kambah M, no wetting agents used	No	Yes
Greater Hume	Yes, Refer to Council's management plans	Yes	Yes	Yes	Yes
Jerilderie	Yes, All done on an as needs basis by Council's weeds officer	Yes	Yes	Yes	Yes
Leeton	Yes, Council has a Weed Control Management Policy	No	Yes, extensive spray programs to control: Silverleaf Nightshade, Spiny Burr Grass, Johnson Grass, Khaki Weed, St John's Wort, African Boxthorns	Yes, Council continues to update it's mapping of weed infestations and also maps all new infestations.	Yes, Council undertakes regular inspections of it's waterways in particular supply channels and drains.

LGA	Commitment to weed control	Undertake biological weed control trials?	Undertake weed spraying programs?	Undertake weed mapping?	Undertake waterway inspections?
Murray	No, Council shares a Community Weeds officer with neighbouring Councils.	No	Yes	No	Yes, Tuppal Creek
Narrandera	Yes	Yes	Yes	Yes	Yes, waterway inspection for alligator weed
Wakool	Yes, Class 4 Noxious Weeds Management Plan	Yes, Bio Control – Patterson's Curse – 6 Flea Beetle release sites – Portuguese Crown boring weevil 2 releases – Root boring Weevil – Horehound – Collect Plume Moth from Shire and move to other area's in the Shire – Weed Warriors 5 Schools done Horehound Plume Moth	Yes, Weed spraying of all bitumen road shoulders in the Shire and spraying of regional & local weeds as needed	Yes, Mapping updated annually	Yes, Water ways inspections carried out using Ute as rivers to low
Wentworth	Yes	No	Yes	No	Yes

(Information sourced from relevant Councils)

Pest animals

Pest plagues are not uncommon throughout the area but the incidences of these are affected, to a very great degree, by climatic conditions. Feral animals including cats, foxes and rabbits remain of most concern to the Councils (see Table 20).

Table 20: Pest animals 2007/08

LGA	Incidence of Pest Outbreak 2007/08
Balranald	Nil
Berrigan	Nil, Noxious and Pest animals are controlled in this region by Murray Rural Lands Protection District and include the usual suspects. No significant issue of plague proportions.
Carrathool	Yes; feral cats
Conargo	Nil
Corowa	Nil
Deniliquin	Nil
Greater Hume	Yes; rabbits
Jerilderie	Nil
Leeton	Nil
Murray	Nil
Narrandera	Nil
Wakool	Yes, foxes and rabbits
Wentworth	Nil

(Information sourced from relevant Councils)

Dogs & cats

It is critical for the environmental health of a regional area for effective control of dogs and cats as a means of curbing the rate of increase of feral animals. Wild dogs and cats are major predators of native fauna as well as posing significant problems for farming livestock. Effective control of dogs and cats ensures that missing companion animals can be reunited with their owners whilst Council revenue from pet registration fees can help mitigate some of the costs incurred by Council. Council's commitment to dog and cat control is listed in Table 21.

Table 21: Council's commitment to dog and cat control during 2007/08

LGA	Dogs Seized	Cats Seized	Further information	Change from previous report (total animals)
Balranald	30	0	Council maintains animal control with a (casual) ranger	↑
Berrigan	76	6	BSC Local Companion Animal Management Plan Companion Animals Act 1998 + Regulations	↓
Carrathool	34	35		Unknown

LGA	Dogs Seized	Cats Seized	Further information	Change from previous report (total animals)
Conargo	0	0	Council responds to any complaints in relation to dog control in the Shire area	↓
Corowa	-	-	Council did not provide details	Unknown
Deniliquin	165	2	Council does not have control policy	↑
Greater Hume Shire	107	29	Council has animal control policy	↑
Jerilderie	18	0	No change to control policy	No change
Leeton	189	285	Council recently adopted a Companion Animals Management Plan. This plan covers Responsible pet ownership, Legislative Obligations of Owners under the Act, Impounding of Animals, Animal Welfare, Noise and Water Pollution and Leash Free Areas.	Unknown
Murray	90	50	No control policy, Administration of Companion Animals Act,	↑
Narrandera	118	51	Council does not have an animal control policy Council has animal traps available for use by the community	Unknown
Wakool	28	34	Companion Animals Act	↓
Wentworth	232	35	Companion Animals Management Plan	↑

(Information sourced from relevant Councils)

Bushfire

Current fire regimes, including the incidence of bushfires, in relation to ecosystem requirements are of concern to SoE reporting because they indicate the pressure on native ecosystems of human activities in the environment. Bushfire incidences and changes to Councils bushfire prone land during the 2007/08 reporting period are detailed in Table 22.

Some of the councils have indicated that they are not satisfied with the accuracy of their mapping (six of the thirteen councils) while the remainder appeared to be satisfied with their mapping. It is interesting to note one of the satisfied councils has made a change to their mapping.

Table 22: Bushfire incidences and changes to bushfire prone land during 2007/08

LGA	Changes to Bushfire Prone Categories	Incidence of Bushfires
Balranald	No, and Council is not satisfied with mapping	Nil
Berrigan	No, and Council is satisfied with mapping	53 incidents Includes: Fires / MVAs/ False Alarms
Carrathool	Yes; New map changed the area of Bushfire prone land by removing considerable areas along the Lachlan River in Hillston, and Council is satisfied with mapping	
Conargo	No, and Council is satisfied with mapping	8
Corowa	No, and Council is satisfied with mapping	8
Deniliquin	No, and Council is satisfied with mapping	4
Greater Hume	No, and Council is not satisfied with mapping	Nil
Jerilderie	No, and Council is satisfied with mapping	Nil
Leeton	No, and Council is not satisfied with mapping	Nil
Murray	No, and Council is not satisfied with mapping	Nil
Narrandera	No, and Council is not satisfied with mapping	Nil
Wakool	No, and Council is satisfied with mapping	18
Wentworth	No, and Council is not satisfied with mapping	6

(Information sourced from relevant Councils) * Incidents include bushfires and motor vehicle accidents

4.5 HUMAN SETTLEMENT

The composition of a population (i.e. its characteristics) underpins the changes of the pressure of the human population on the environment. There is a direct impact on the level of resources required to provide the range of services and infrastructure required to maintain a given quality of life in areas such as health, housing, education, employment, transport, resource use and management and construction. An understanding of this and of the dependency ratio in the population means that, as the composition characteristics of a population change, environmental, economic and social pressures can be minimised.

Demographics

Leeton is the most populous LGA of those participating in this SoE and Conargo is the least.

The population of each LGA in relation to its area is given in Table 23. Clearly, Deniliquin has the greatest density with a large population and small area based around the township.

Wentworth is the largest LGA followed by Balranald and Carrathool.

Excluding Deniliquin, Berrigan and Corowa have the largest densities and Balranald, Carrathool and Conargo have the smallest, with Jerilderie not far behind.

Table 23: Population density

LGA	Population 2007 est.	Area (sq km)	Density (persons/km ²)	Pop. change from previous year
Balranald	2 523	21 418	0.12	↓
Berrigan	8 426	2 067	4.08	↑
Carrathool	2 922	19 000	0.15	n/a
Conargo	1 727	8 751	0.20	↑
Corowa	11 412	2 407	4.74	↑
Deniliquin	7 689	130	59.15	↑
Greater Hume	6 587	5 929	1.11	↓
Jerilderie	1 673	3 397	0.49	↑
Leeton	11 726	1 167	10.05	n/a
Murray	6 918	4 345	1.59	↑
Narrandera	6 200	4 116	1.51	↓
Wakool	4 439	7 549	0.59	↑
Wentworth	7 121	26 000	0.27	↑

(ABS website 2008)

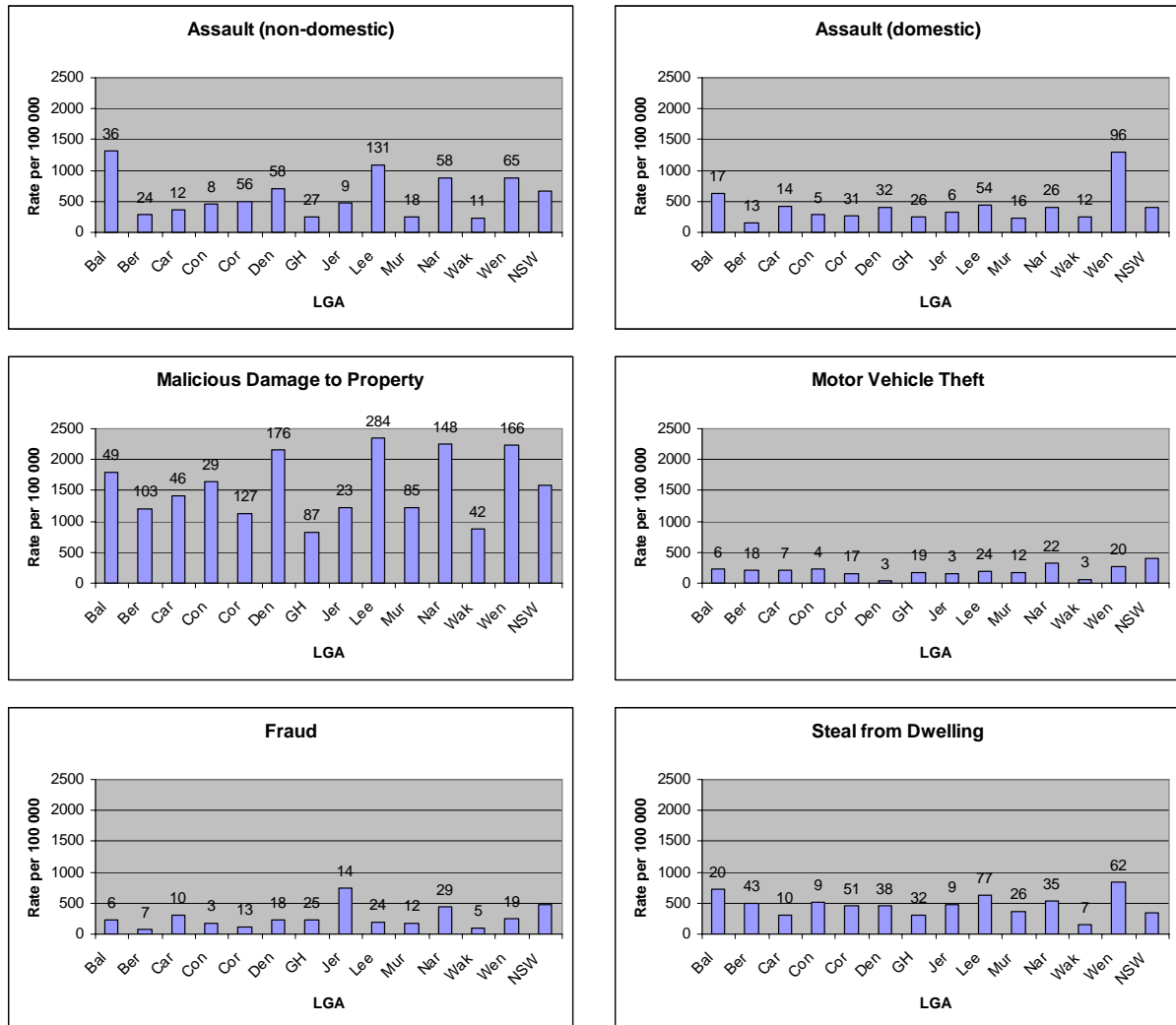
Socio-economic status

No new Census data (socio economic data) was available at the time of the report.

A selection of crime statistics for participating LGA's produced by the NSW Bureau of Crime Statistics and Research is shown in Figure 12. Caution needs to be exercised in interpreting these statistics because of the low base from which they stem in many circumstances. Likewise direct comparisons on the number of incidents between LGA's should not be undertaken because of the differences in the size of respective populations. However, by expressing the number of incidents per 100,000 of the population allows for some comparison to be made.

From the graphs it can be determined malicious damage to property and non-domestic assault is more common then the other types of crime throughout the LGAs, and motor vehicle theft and fraud are generally lower then domestic assault and stealing. Generally the LGAs are equal to or lower then the state average, with few exceptive.

Figure 12: Recorded crime statistics 2007 rate per 100,000 population & number of incidents



(Source: Bureau of Crime Statistics & Research, New South Wales 2007)

Effluent treatment & disposal

No new monitoring results for performance of sewerage treatment works are available from the Department of Energy, Utilities and Sustainability (DEUS) for this reporting period.

Some information about on-site disposal and sewerage treatment plant changes is detailed in Table 24 below.

Waste to landfill

The amount of urban waste generated and disposed of (either legally or illegally dumped) indicates the pressure of towns and the associated waste on the environment through potential contamination of soils and groundwater's and the physical area of land used for waste disposal. It is one indicator of the sustainability of towns. Management and Council control of waste landfill sites during this reporting period can be found in Table 24.

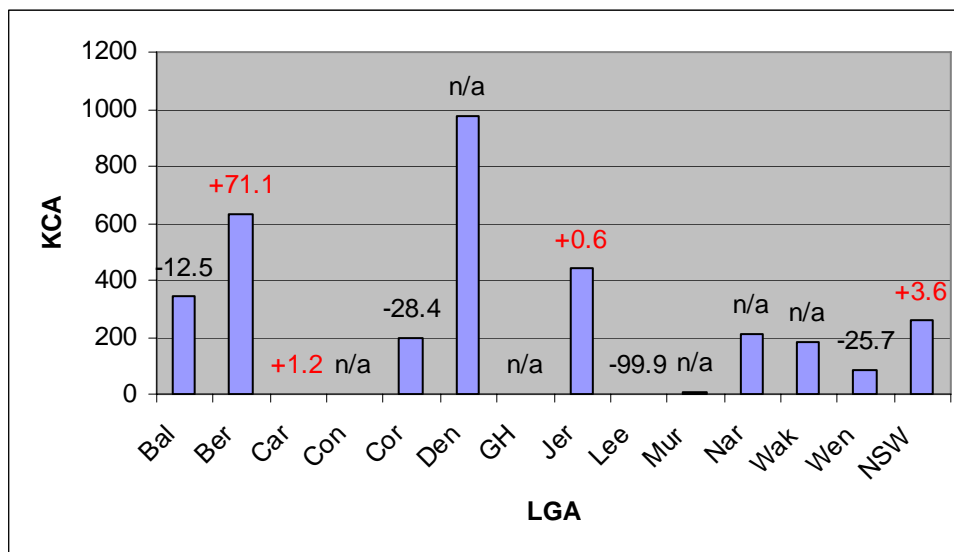
Table 24: Management & control of waste landfill sites during 2007/08

LGA	Waste to landfill	Change from last report	Approvals for onsite disposal (effluent)	Other changes
Balranald	500 tonnes	↓	-	-
Berrigan	5000 tonnes Berrigan WDC = 4019 tonnes Tocumwal WDC = 981 tonnes	↑ (Total) ↑ (Berrigan) ↓ (Tocumwal)	9	-
Carrathool	unknown	-	4	Goolgowi & Merriwagga moved from landfill to waste transfer to Hillston Landfill for domestic wastes
Conargo	1226 tonnes	-	6	
Corowa	3 400 tonnes	↑		New Mulwala Sewerage Treatment Plant - \$8 million
Deniliquin	5869	-	6	
Greater Hume	2300 tonnes to Council landfill	↑	45	Mullengandra landfill site sold to RTA in Sep 07
Jerilderie	1300	↑	1	Nil changes, other than town tip has been completely fenced.
Leeton	16 643 tonnes	-	10	Non-putrescible wastes were diverted from landfill trenches and stockpiled for crushing into roadbase or mulch.
Murray	12,837 tonnes	↑	16	-
Narrandera	2520 tonnes	-	9	Council does manage and control waste landfill sites in the Shire
Wakool	320 tonnes	↓	4	-
Wentworth	20 000 tonnes	↑	26	-

(Information sourced from relevant Councils)

The latest publication for the Department of Local Government Comparative Data was in January 2008 for 2005/06 data. Figure 13 compares domestic waste by LGA between 2004/05 and 2005/06. Figures were not available for five LGA's for the previous year. Berrigan had the largest increase of 71.1%, while Carrathool and Jerilderie increased by smaller amounts. Balranald, Corowa, Leeton and Wentworth decreased their volume of waste. Conargo is producing much less than the other Shire's volume of waste per capita (6.17KCA). Balranald, Berrigan, Deniliquin and Jerilderie are all well above the state average of waste per capita.

Figure 13: Domestic waste 2005/06 (Kilograms per Capita per Annum) & percentage change from previous year



Source; Dept. of Local Government Comparative Data 2005/06

Materials recycling

Recycling is the process by which used products are sent to a factory where they are reprocessed to produce the same product or a different one. Examples include recycling glass from old bottles and jars to make new glass products, and the recycling of paper into newspaper and other paper products. Another form of recycling relates to organic matter such as foodstuffs or garden wastes like leaves or grass clippings which, when composted, make useful soil additives.

The level of recycling is of concern to SoE reporting because it is a response towards minimising the amount of waste requiring disposal into landfill each year, and thus reducing the impact of human settlements on the natural environment. The existence of markets for recycled materials, and their rates of uptake, indicates the viability of recycling as a self-sustaining industry into the future. Management and control of Council's recycling program during 2007/08 can be found in Table 25.

Table 25: Waste recycling during 2007/08

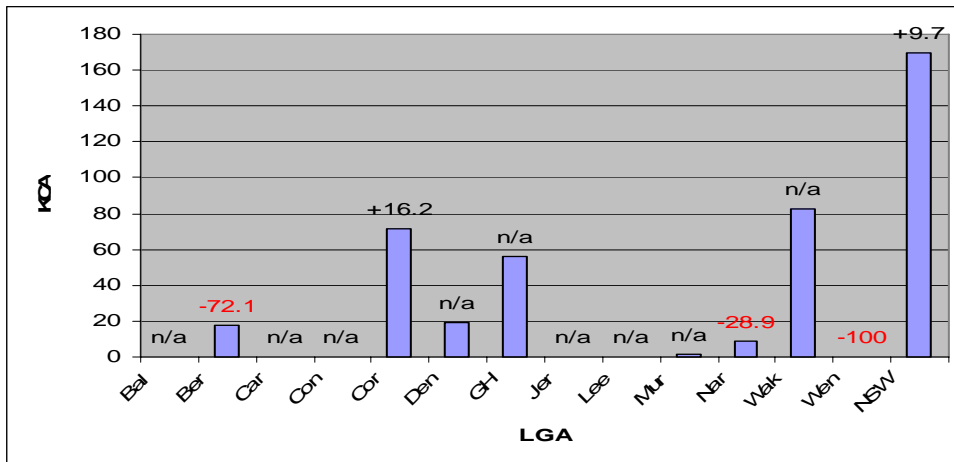
LGA	Recycling Program	Volume Recycled	Change from last report	Nature of Program
Balranald	Yes	50 tonnes	↓	-
Berrigan	Yes	794 tonnes	↑	-
Carrathool	No	-	-	-
Conargo	Yes	15 tonnes	↑	-
Corowa	Yes	859 tonnes	↓	Nil changes

LGA	Recycling Program	Volume Recycled	Change from last report	Nature of Program
Deniliquin	No	Nil	↓	No program
Greater Hume	Yes	905 tonnes	↑	Extension to Gerogery/Gerogery West (25 kerbside collection customers)
Jerilderie	No	60 tonnes	-	-
Leeton	No	71.92 tonnes	-	<p>Leeton Landfill and Recycling Depot runs in conjunction with a second hand goods store. The proprietors of this store collect any recyclable/reusable goods from designated collection bays for sale on their premises.</p> <p>Large 40cu.m bins are also in place on site for commingled domestic recyclables. These bins are collected and transported by Kurrajong Recycling to their plant in Wagga Wagga.</p> <p>A regional scrap steel contractor also visits the site quarterly to collect any stockpiled scrap metal for recycling.</p>
Murray	Yes	494 tonnes	↓	Commenced processing masonry products at Moama landfill
Narrandera	Yes	-	-	Private operated collection of cardboard, paper and plastic
Wakool	Yes	367 tonnes	↑	No changes
Wentworth	No	48 tonnes	↑	-

(Information sourced from relevant Councils)

Only eight LGAs have recycling information published in the latest Department of Local Government Comparative Data and even less from previous publications. Figure 14 indicates that those councils are well below the state average for the amount of material per head recycled.

Figure 14: Recyclables 2005/06 (Kilograms per Capita per Annum) & percentage change from previous year

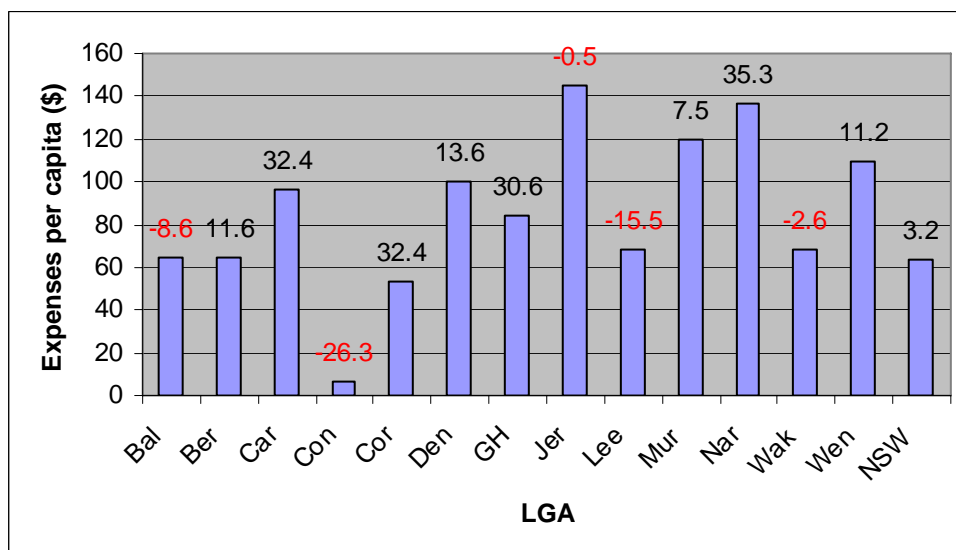


Source; Dept. of Local Government Comparative Data 2005/06

Recreation

Figure 15 compares the annual expenditure on recreation across the region for the financial year 2005/06. Eleven LGAs came in above the State average. Conargo fell further below the average with a 26.3% reduction. Narrandera, Carrathool and Greater Hume LGA's had the biggest increases and Jerilderie, despite a 0.5% reduction, spends the most at \$144.84 per capita.

Figure 15: Recreation 2005/06 (expenses per capita) & percentage change from previous year

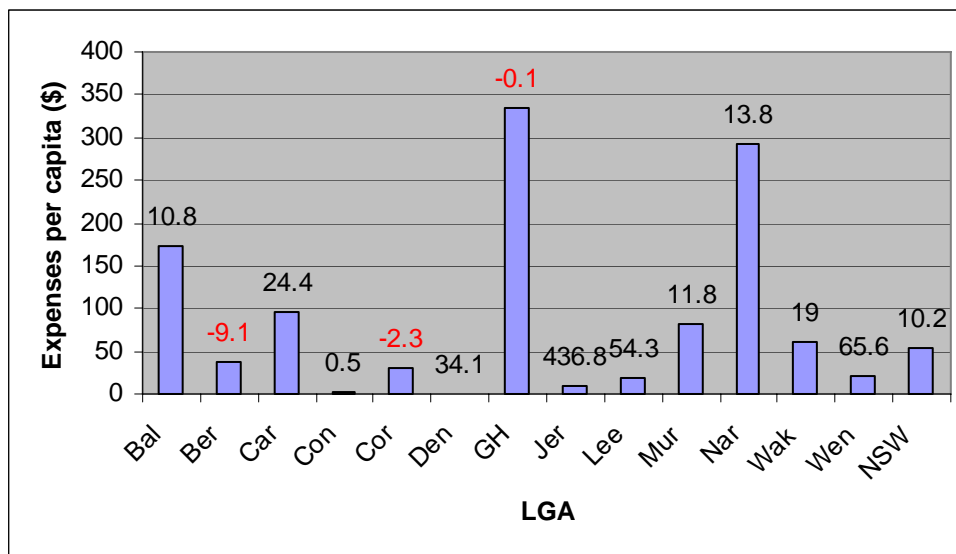


Community services

Figure 16 reveals the impost on LGA budgets to provide community services which are in particular demand in rural or isolated regions. As an average the state of NSW

provided \$54.00 per capita on community services throughout 2005/06 which was an increase of 10.2%. Six of the LGA's participating in this SoE exceeded the state average. These were Balranald, Carrathool, Greater Hume, Murray, Narrandera and Wakool. Wakool is only marginally ahead of the state average however Greater Hume provided more than six times this figure with per capita expenditure in excess of \$330. Berrigan had the greatest reduction of 9.1%. Only three LGAs witnessed a reduction in spending on community services and this expenditure is anticipated to continue to increase with the increasing demands of an ageing Australian population.

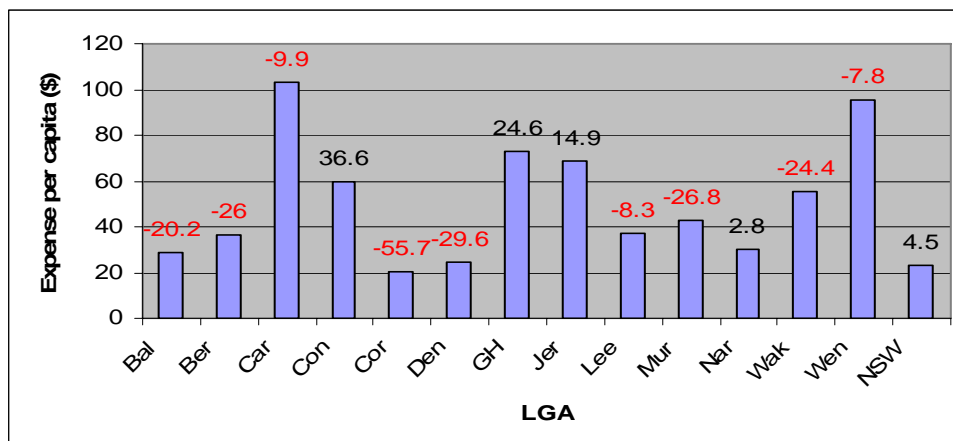
Figure 16: Community services 2005/06 (expenses per capita) & percentage change from previous year



Environment & health

Figure 17 compares the expenditure on environmental management and health for 2005/06 with 2004/05. It is of note that most LGAs spend significantly more on environmental management and health than the state average of about \$23 per capita. Carrathool is the LGA with the highest expenditure within the region and had a decrease in expenditure of 9.9%. It is noted that nine of the 13 participating LGAs had a reduction, with Corowa reducing its expenditure by 55.7%.

Figure 17: Environmental management and health 2005/06 (expenses per capita) & percentage change from previous year



Noise

Noise pollution can be defined as unwanted noise and does not need to be determined by decibel level alone. Noise can be an unpleasant nuisance and the degree to which this has an impact on the population is an indicator of the pressure on individual's quality of life in this SoE annual update.

In 2007/08 there was a number of noise complaints were made across the region. The information in the table below demonstrates that noise is generally not an environmental issue in the region and is restricted to a few isolated instances.

Table 26: Noise complaints 2007/08

LGA	Maintenance of Complaint Register	Number of complaints received	Nature of complaint	Change from previous year (no. complaints)
Balarald	Yes	0	-	↓
Berrigan	Yes	17	Barking Dogs / chooks / aerobatic planes over Tocumwal	↑
Carrathool	Yes	0	-	Unknown
Conargo	Yes	0	-	No change
Corowa	Yes	5	Stereo, parties etc.	↑
Deniliquin	Yes	8	Neighbour noise x6, industrial noise x2	↑
Greater Hume	Yes	34	Motorbikes, loud music, cows and scattergun	↑
Jerilderie	Yes	1	Noise from a hotel. Council and police worked together to resolve the issue.	↑
Leeton	Yes	11	Most complaints were localised. Noisy air	No change

LGA	Maintenance of Complaint Register	Number of complaints received	Nature of complaint	Change from previous year (no. complaints)
			conditioners, barking dogs, and music	
Murray	Yes	6	Barking dogs	↑
Narrandera	Yes	4	Barking dogs	Unknown
Wakool	Yes	7	Domestic	Unknown
Wentworth	Yes	4	Barking dogs	↑

(Information sourced from relevant Councils)

Heritage listings

There is a growing awareness among Australians of heritage places and objects and the importance of preserving them.

The number and condition of heritage listing indicates the community's response to identifying and preserving heritage, as well as the value seen in heritage in maintaining a sense of place in a region – an important factor in our quality of life.

Identification of new places is an on-going process. Places and objects that are no longer listed should be identified individually, and the reason for de-listing provided, e.g. through decay or change of use that can involve demolition or inappropriate renovation. Heritage listings during 2007/08 are listed in Table 27.

Table 27: Heritage listings during 2007/08

LGA	New Heritage Listings	Heritage Study
Balranald	Nil	Council does not have current study, and is not planning on reviewing or preparing one
Berrigan	Nil	Council is preparing to undertake heritage study. Inventory developed. Detail being researched.
Carrathool	Nil	Council has current heritage study
Conargo	Some	Council undertook a comprehensive review of Heritage listings with the shire for inclusion in the draft LEP, this has yet to finalise.
Corowa	Nil	Council has current heritage study
Deniliquin	Nil	Council has completed a draft study
Greater Hume	Nil	Council is preparing a heritage study which should be completed December 08
Jerilderie	Nil	Council has a current heritage study
Leeton	Nil	Council is planning on reviewing or preparing a heritage study
Murray	Nil	Council has a current heritage study
Narrandera	Nil	Council intends to add a number of listings during the review for LEP

LGA	New Heritage Listings	Heritage Study
Wakool	Nil	Council has current heritage study
Wentworth	1	Listing on the State Heritage Register: PS Rodney near Pooncarie, Darling River

(Information sourced from relevant Councils)

Aboriginal sites

All LGA's within the study area are aware of the importance of identifying and preserving places and objects of Aboriginal heritage. Most council's advised that no new Aboriginal objects or places were identified within their LGA during 2007/08.

However, Greater Hume advised that there may have been some Aboriginal artefacts identified during the construction of the Hume Highway but details have not been conveyed to Council.

Several Aboriginal sites were identified at Lake Brewster in Carrathool Shire as part of the development application process and a canoe tree was located adjacent to Ball Park Caravan Park in Corowa Shire.

5. CONCLUSION

All Council's participating in this supplementary report appear to continue to take small steps towards a more positive contribution to the environment. Council's have become more aware of their responsibilities towards the environment as a result of new environmental legislation as well as a general increase in awareness of environmental issues across the community as a whole. It is important that Council's continue to minimise the impact of their activities on the environment.

At the conclusion of the Principal SoE Report four years ago, a number of recommendations were made to assist Council's in addressing their responsibilities to the environment. The recommendations are not binding on any Council and are intended as a guide or stimulus for consideration of local government environmentally related projects and activities.

It is worth reiterating these recommendations for the benefit of this fourth supplementary report.

- Maintain a file on SoE reporting for the purposes of collecting environmental information as it becomes available. This will make the task of data collection easier for Council staff and allow for consideration of environmental matters that otherwise might be missed. The use of GPS and mapping systems could be particularly useful in this regard.
- Support government initiatives for improved land management practices that reduce the rate of land degradation.
- Continue to seek funding and support from all possible sources to implement environmental improvements.
- Take the opportunity in the LEP review process to strengthen controls where appropriate for the protection of the environment and in particular the Murray River.
- Prepare and maintain Potentially Contaminated Lands Registers.
- Investigate opportunities to change Council work practices that reduce motor vehicle usage (e.g. improvements in technology).
- Prepare long term (say 20 years) strategic plans across the whole of the LGA that includes aims and objectives for achieving net gain for the environment.
- Monitor major developments within their LGA for compliance, particularly those that have the potential to detrimentally impact on the environment.
- Seek environmental enhancements through conditions of consent on development applications (e.g. re-vegetation and rehabilitation works).
- Ensure that urban infrastructure such as potable water supply, sewer and stormwater drainage continues to be constructed and upgraded as resources permit.
- Encourage water conservation and recycling measures in new development as well as energy efficient design.

- Take a stronger stance on illegal activities such as vegetation clearing, firewood collection and rubbish dumping.
- Ensure staff are fully briefed and understanding of changes to environmental legislation and other regulations relating to the environment.
- Continue to initiate measures that reduce waste to landfill and increase waste recycling.
- Endeavor to be responsive to complaints on environmental matters (e.g. odour and noise).
- Undertake reviews of heritage listings.

6. REFERENCES

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