Photos by Mark Bondfield

2009 - 2010
SUPPLEMENTARY
STATE OF THE ENVIRONMENT
REPORT FOR THE CITY OF BLUE MOUNTAINS

blue mountains City Council

This page is intentionally blank

Table of Contents

INTRODUCTION

All councils in New South Wales are required to prepare a supplementary State of the Environment report for 2009-2010 and submit this to the Division of Local Government by 30 November 2010 [*section 428(2)(c) and clause 217(2) Local Government Act, 1993 (historical version)*]. This report meets this requirement.

State of the Environment and State of City reporting, are now key components of tracking our progress in achieving our strategic plan for the City - *Sustainable Blue Mountains 2025*.

Sustainable Blue Mountains 2025 expresses the aspirations of the Blue Mountains community and includes objectives and strategies for *Looking after the Environment*. It provides a framework for community, Council and other agencies, to work together to make the Blue Mountains a better place now and in the future.

Local councils are required to demonstrate in their plans and actions how they as stewards of their local communities are addressing the issues raised in the State of the Environment Reports. The results of this 2009-2010 State of the Environment Supplementary Report will be taken into consideration by Council staff as they complete their work plans for 2011-2012.

Council's overall contribution to implementing *Sustainable Blue Mountains 2025* is outlined in its Resourcing Strategy, Delivery Program and Operational Plan (www.bmcc.nsw.gov.au/yourcouncil/integratedplanningforservices).

Report Format

This SoE report is set out in a 'report card' format, an option recommended in the *State of the Environment Guidelines (1999)* for supplementary reports. This is a "simpler, more accessible format for each environmental sector" and it is intended that this report will be posted in a user friendly / interactive format at *www.sustainablebluemountains.net.au* to allow for ease of access to the community.

The report incorporates all of the environmental measures identified within *Sustainable Blue Mountains 2025* for monitoring the state of our natural environment.

LINK WITH SUSTAINABLE BLUE MOUNTAINS 2025

The community's Key Direction statement for the looking after the natural environment is articulated in *Sustainable Blue Mountains 2025* as follows:

> ***We value our surrounding bushland and the World Heritage National Park. Recognising that the Blue Mountains natural environment is dynamic and changing, we look after and enjoy the healthy creeks and waterways, diverse flora and fauna and clean air. Living in harmony with the environment, we care for the ecosystems and habitats that support life in the bush and in our backyards. We conserve energy and the natural resources we use and reduce environmental impacts by living sustainably.***

The Objectives and Strategies that underpin this Key Direction are as follows:

OBJECTIVES	STRATEGIES
The diversity of native flora and fauna is maintained	• Protect and nurture the different flora, fauna and ecological communities of the Blue Mountains • Manage the urban-bushland interface to minimise urban development impacts
The health of waterways and water catchments is maintained and enhanced	• Care for waterways and catchments • Focus on how best to conserve groundwater
City activities contribute to maintaining a healthy climate	• Implement initiatives that address climate change • Reduce reliance on private motor vehicles
Resources are used in an environmentally responsible way	• Waste minimisation – avoid, reduce and reuse waste • Encourage low consumption environmentally aware lifestyles • Conserve and recycle water and encourage water sensitive urban design • Reduce energy consumption and increase the use of renewable energy

TREND DATA AND COMMENTARY

Each of the legislatively required environmental sectors - water, land, biodiversity, atmosphere, heritage, waste and noise - are covered in this report. Measures reported on include those identified in *Sustainable Blue Mountains 2025* for monitoring progress on the 'Natural Environment', as well as those documented by the 2008/2009 SoE report. Where possible trend data is provided for each of the measures.

If the data is provided on an annual basis and spans a period of at least 5 years, then a linear trend line is drawn through the data's chart to assist in identifying whether the measure is trending up or down.

Desired trends are shown against **Observed** trends. **Observed trends that align with the desired trends are shown in** green **and those that do not in red.**

Detailed analysis of the trend data and the actual raw data itself up to 2009/2010 is shown on data sheets.

The data is drawn from a variety of sources such as the Australian Bureau of Statistics Census data and Blue Mountains Community Survey (Blue Mountains City Council, 2000-2010). The measures are quantitative (time series data / Census etc), qualitative (Community Survey) and spatial (MapInfo / Census).

Trend data based on the Australian Bureau of Statistics census data is not available until the next census scheduled for 2011. Measures are categorised as follows:

- State - the condition of the natural asset;
- Pressure - external processes or systems that are adversely affecting the asset; and
- Responses - how stakeholders are managing the asset to improve the situation.

Water

The natural asset water is viewed in terms of surface water and groundwater.

Surface Water

The major waterways within the Blue Mountains Local Government Area (LGA) include the Grose River, Coxes River, Glenbrook Creek, Erskine Creek and Kedumba River. These waterways are fed by hundreds of smaller tributaries. Local standing water bodies in the LGA include the altered systems of Glenbrook Lagoon, Woodford Dam, Wentworth Falls Lake, Cascade Dam, Lake Greaves and Lake Medlow.

Blue Mountains waterways sustain an enormous diversity of life and provide opportunities for recreation and contribute to Sydney's drinking water supply. Water bodies are adversely impacted by sediment due to erosion, pollution from sewage overflows or outfalls and stormwater runoff.

Ground Water

Groundwater refers to all water found beneath the ground surface and includes that water present in groundwater aquifers. Groundwater helps maintain stream base flows to all perennial streams in the Blue Mountains and sustains groundwater dependant ecosystems and species such as the Blue Mountains Swamps endangered ecological community and the endangered Blue Mountains Dwarf Mountain Pine.

Recharge is an important component of groundwater flow systems. A proportion of rain falling in the Blue Mountains infiltrates the permeable sandstone layers and feeds underground water stores. In urbanised catchments impervious surfaces decrease groundwater recharge.

The over - extraction of groundwater for domestic and commercial consumption adversely impacts groundwater, surface water bodies and associated ecosystems. BMCC has been encouraging local residents to consider installing rainwater tanks as a more sustainable option to domestic bores.

Trend data for assessing water

Measures for water are varied, trending in both negative and positive directions as shown in the following tables.

State Measures for water

Selected Natural Assets	State Measures *(Condition of Natural Assets)*	Desirable Trend	Observed Trend
Water [surface water]	% of urban water monitoring sites with quality ratings of 'good'-'very good' (SIGNAL-SF scores)	↑	↑
	Difference between resident satisfaction with and their importance rating for clean creeks and waterways	↓	↓
Water [ground water]	Number / area of hanging swamps	→	*Insufficient trend data available*

Pressure Measures for water

Selected Natural Assets	Pressure Measures	Desirable Trend	Observed Trend
Water [surface water]	Volume of treated effluent released into Blue Mountains streams	***Still to be determined***	
	Number of registered on-site sewage systems in the Blue Mountains.		
	Water Consumption in the Blue Mountains		

Response Measures for water

Selected Natural Assets	Response Measures	Desirable Trend	Observed Trend
Water [ground water]	Number of bore licenses granted to Blue Mountains Residents		
Water [surface water]	Number of properties connected to reticulated sewerage infrastructure		
Water	Number of rainwater tank rebate applications		
Water	Condition of stormwater assets provided by the Council		*Insufficient trend data available*

For further details refer to the data sheets on the following pages.

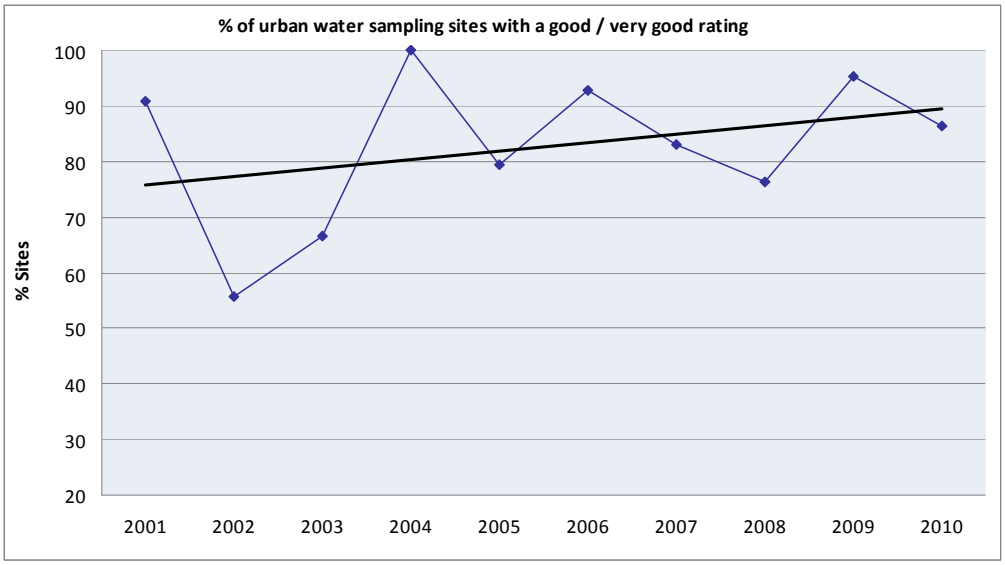
Percentage of urban water monitoring sites with quality ratings of 'good' to 'very good'

What is the trend?

Blue Mountains City Council conducts annual water quality audits of streams and standing water bodies using aquatic macro invertebrates as biological indicators. These organisms include mayflies, stoneflies, caddis flies, beetles, dragonflies, worms and crayfish. The types of macro invertebrates found in a system reflect the quality of the stream water and the health of the aquatic ecosystem.

The SIGNAL-SF system is used to score macro invertebrates according to their sensitivity, with more sensitive families receiving higher scores. Sites are categorised as 'very good', 'good', 'fair', 'poor' or 'very poor', based on their SIGNAL-SF scores. *www.sustainablebluemountains.net.au/resources/publications/*.

In 2010, 86.4% of 'urban' sites had 'good' SIGNAL-SF scores (n=44) and 13.6% of urban sites had 'fair' SIGNAL-SF scores. 'Urban' sites are located within catchments where there is some form of human development; such as houses, roads, retail areas, industrial areas. The majority of 'urban' sites have fallen within the 'good' category each year since 1999, with the percentage of 'good' sampling sites generally increasing over this period. These results suggest that most of the waterways sampled exhibit consistently good water quality.



Urban Stream Water Quality Ratings – sites rated GOOD or VERY GOOD										
Year	**2001**	2002	2003	2004	2005	2006	2007	2008	2009	2010
Sites	11	9	12	8	29	41	41	21	42	44
%	90.9	55.6	66.6	100	79.3	92.7	82.9	76.2	95.2	86.4

Why is monitoring this trend important?

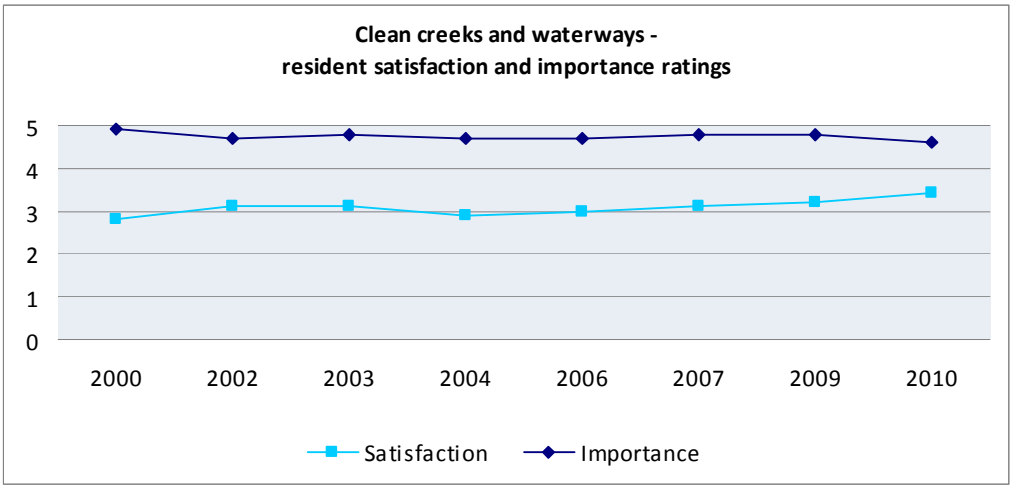
Monitoring the type and diversity of aquatic macro invertebrates present in Blue Mountains urban streams is an indicator of how well we are progressing in looking after our water resources. Changes in the type and diversity of macro invertebrate families can indicate declining or improving water quality and habitat availability. Ideally, the proportion of monitored streams rated good or very good will increase – indicating improvements in water quality and the health of aquatic ecosystems.

More detailed information on council's water surveys is provided in Council's *Aquatic Macro invertebrate Sampling Program* 2009 Draft Report, available on the BMCC website, www.bmcc.nsw.gov.au.

Difference between resident satisfaction and their importance rating for clean creeks and waterways

What is the trend?

Residents' rating of importance for clean creeks and waterways has remained higher than their satisfaction with these assets although this has decreased slightly over time.



Clean Creeks and Waterways								
Satisfaction ratings								
Year	2000	2002	2003	2004	2006	2007	2009	2010
Rating	2.8	3.1	3.1	2.9	3	3.1	3.2	3.4
Importance ratings								
Year	2000	2002	2003	2004	2006	2007	2009	2010
Rating	4.9	4.7	4.8	4.7	4.7	4.8	4.8	4.6

Why is monitoring this trend important?

Clean creeks and waterways are an important part of protecting the environment, preserving biodiversity and enhancing people's enjoyment of this natural asset. Resident perceptions of clean waterways relate to observable amounts of rubbish, silt and urban run off in creeks and streams.

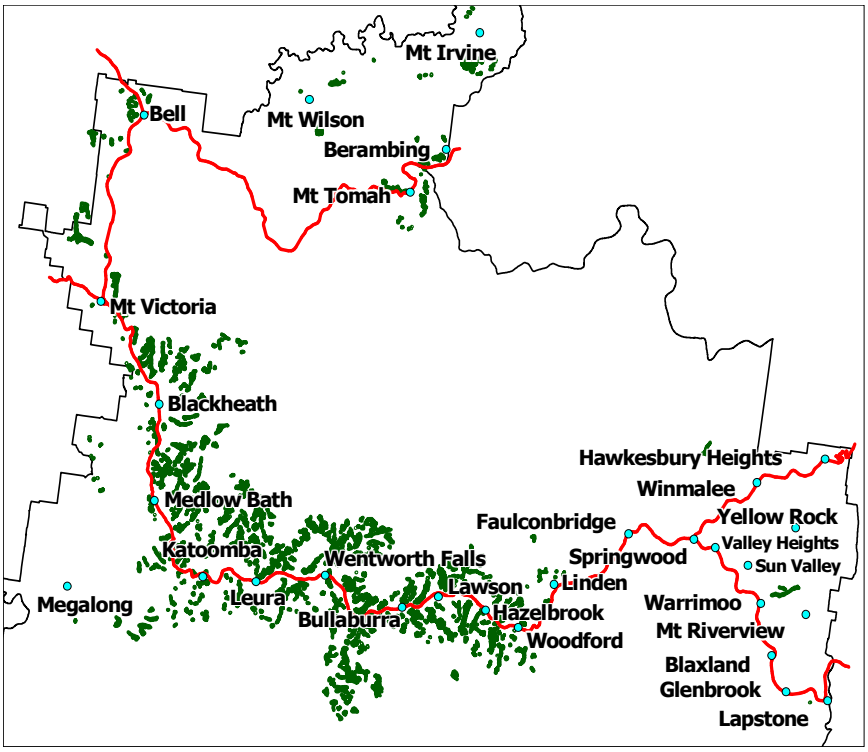
Source: *Blue Mountains City Council, Blue Mountains Community Surveys: 2000, 2002, 2003, 2004, 2006, 2007, 2009, 2010. The Survey is conducted every one to two years. Ratings are given on a 1-5 scale, with 1 the lowest level of importance and satisfaction and 5 the highest.* ***www.bmcc.nsw.gov.au/yourcommunity/communitysurvey***

Area of hanging swamps

What is the trend?

Trend data is not yet available.

The Map below shows the distribution of hanging swamps in the Blue Mountains.



Why is monitoring this trend important?

The distribution of hanging swamps is limited and impacted significantly by threats of urban development, erosion, sedimentation, weed invasions, groundwater extraction rates, runoff and pollution. Hanging swamps are dependent on the availability of ground water and provide a range of free ecosystem services and are home to a variety of threatened species Hanging swamps are a feature of the Blue Mountains water cycle. They act like massive sponges, soaking up water and releasing it gradually to provide life-sustaining moisture for downstream ecosystems.

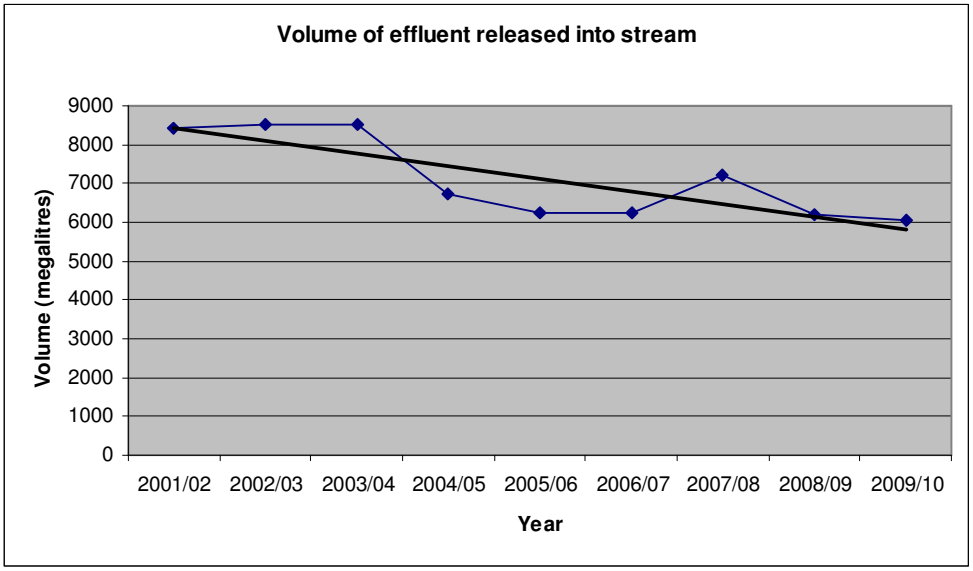
***Source**: Blue Mountains City Council*

Volume of treated effluent released into Blue Mountains streams

What is the trend?

The volume of treated effluent released into Blue Mountains streams has generally declined between 2001/2002 and 2009/2010. This decrease may reflect increased water conservation by the Blue Mountains community. The upward trend between2006/2007 and 2007/2008 may result from the increase in properties connected to the reticulated sewerage system over this period.

This trend data does not account for the volume of overflows in 2009/2010. Overflow constitutes sewerage that bypasses the plant's secondary and tertiary treatment processes during periods of wet weather storm flows. Overflow is subjected to primary treatment which includes course screening, grit removal and chemical disinfection. In 2009/2010 the volume of overflow discharged into the nearby stream was 409 ML.



The volume of treated effluent (ML) released into local streams									
Year	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Megalitres of treated effluent released into local streams	8,431	8,500	8,500	6,750	6,231	6,254	7,205	6,196	6,050

Between 1996 and 2006 the North Katoomba, Wentworth Falls, South Katoomba and Glenbrook Sewage Treatment Plants were decommissioned. Blackheath Sewage Treatment Plant came off line in June 2008. Mt Victoria Sewage Treatment Plant came off line in August 2008. Winmalee STP is the only remaining Sydney Water Sewage Treatment Plant currently discharging tertiary treated effluent into the Blue Mountains LGA. The quality of the treated effluent released locally into Streams must meet acceptable environmental standards as dictated by the *Environmental Protection Act 1994.*

Why is monitoring this trend important?

The sewerage reticulation system in the Blue Mountains transports wastewater off-site through pipes (sewers) and treats all wastewater at the Winmalee Sewage Treatment Plant (STP). Wastewater from the

Winmalee STP is discharged at the eastern end of the premises to an unnamed creek north of Fraser Creek in the lower Blue Mountains. This creek flows down to the Nepean River.

Increasing the proportion of properties connected to the reticulated sewerage system is likely to reduce negative impacts caused by onsite sewer systems on water quality and weed infestation. This can in turn positively impact the health of the community and the natural environment.

As more properties connect to the reticulated sewerage system in the coming years, the volume of effluent released into local streams will increase, although this is mitigated by increased water conservation by local residents.

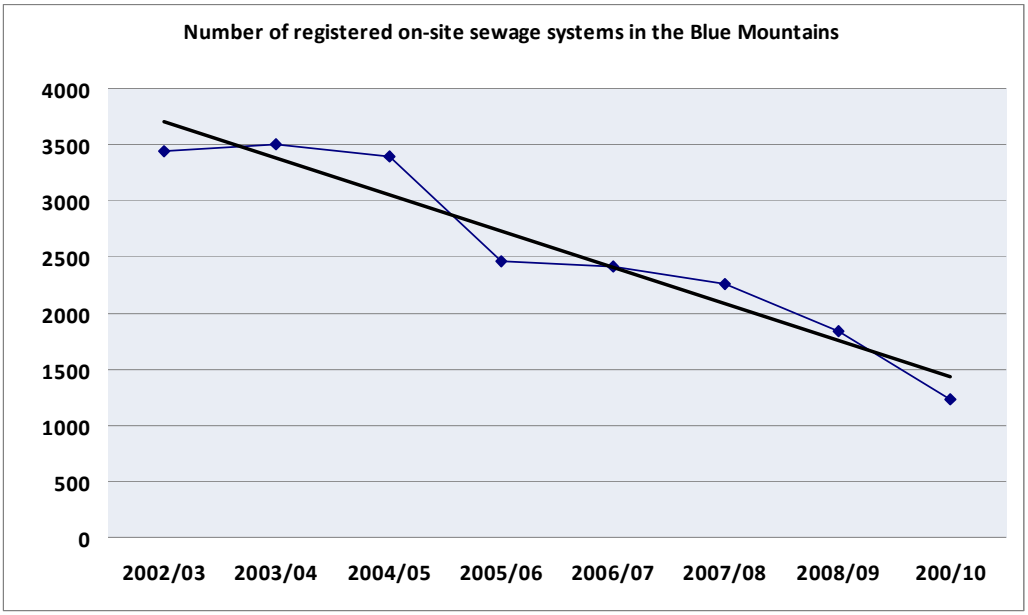
Source: *Sydney Water, 2010*

Number of registered on-site sewage systems in the Blue Mountains

What is the trend?

An on-site sewage system is a mechanism for storing or treating sewage, and includes systems such as septic tanks, aerated wastewater treatment systems, sand mounds and filters, wetlands, composting toilets, and septic pump out systems. All owners of on-site sewerage systems are required to be licensed with Blue Mountains City Council

The number of on-site sewage systems licensed in the Blue Mountains has steadily decreased over the years mainly as a result of the provision of new sewerage networks in areas not previously serviced.



Type of System	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Aerated wastewater treatment systems	482	460	483	434	444	*Accurate breakdown not available*	431	345
Septic tank and absorption trenches	2,200	2,200	2,200	1,333	1,299	*Accurate breakdown not available*	1,041	717
Pump-out	708	800	670	646	641	*Accurate breakdown not available*	320	101
Alternative technologies	47	40	46	46	32	*Accurate breakdown not available*	50	64
Total number	**3,437**	**3,500**	**3,399**	**2,459**	**2,416**	**2,251**	**1,842**	**1,227**

Why is monitoring this trend important?

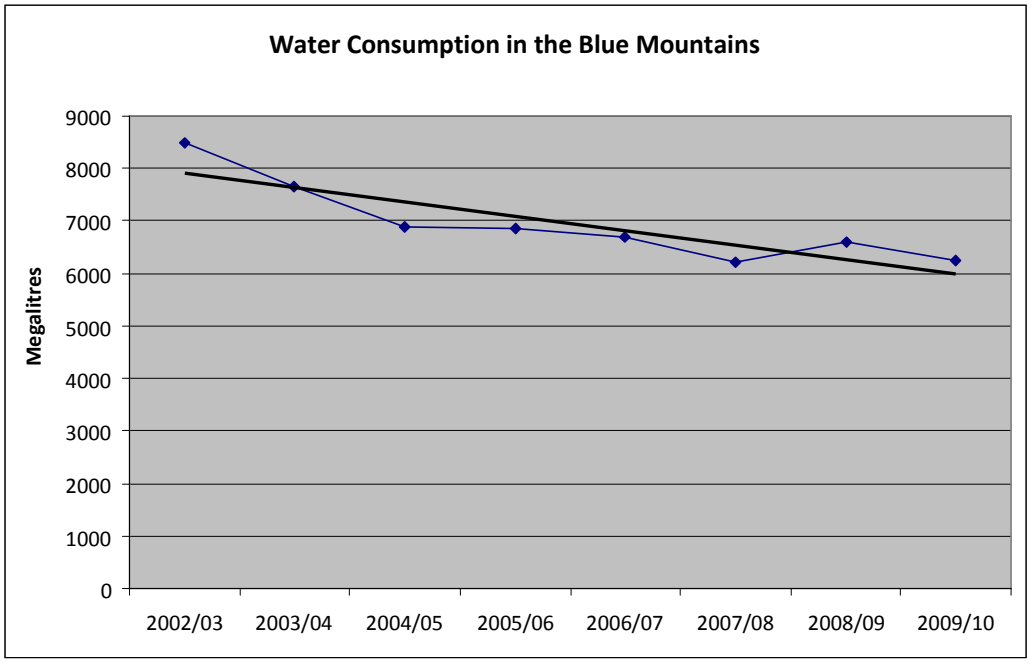
On-site sewerage systems in the Blue Mountains are largely used due to the difficulty of building sewers across mountainous areas for relatively small numbers of people. On-site systems are prone to high failure rates. Overall, inspections by Council staff revealed in 2009/2010 that approximately 50% of on-site systems are failing to meet basic operational requirements. Results of these failures are often obvious through odours, weed infestation and the decline in water quality. Such problems sometimes lead to human health issues. Poor on-site sewage treatment is one reason why water in Blue Mountains streams is considered not fit to drink. Every house that is converted from on-site wastewater disposal to sewer reduces the amount of wastewater entering the environment by approximately 900 litres per household per day or 328,500 litres per year.

Source: *Blue Mountains City Council*

Volume of water consumption in the Blue Mountains

What is the trend?

This measure represents the volume of drinking water consumed in the Blue Mountains LGA, which has been pumped from reservoirs in the Blue Mountains, as well as Warragamba Dam and Oberon Dam. The total volume of water consumed in the Blue Mountains has generally declined between 2002/2003 and 2009/2010. Water is consumed by residential premises (flats-units, houses) businesses and industry. The 'other' category of consumers includes government use for crown sites, community sites and exemptions for non profit organisations.



Water consumption in the Blue Mountains (in '000 kilolitres)								
Type of system	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Commercial	279	627	596	618	719	649	666	646
Flats - Units	269	252	246	240	234	226	246	254
Houses	7,142	5,832	5,244	5,184	5,113	4,690	4984	5,059
Industrial	31	26	25	24	19	17	19	21
Other	386	462	388	390	297	316	339	273
Total	**8,107**	**7,199**	**6,499**	**6,456**	**6,383**	**5,899**	**6,254**	**6,252**

Why is monitoring this trend important?

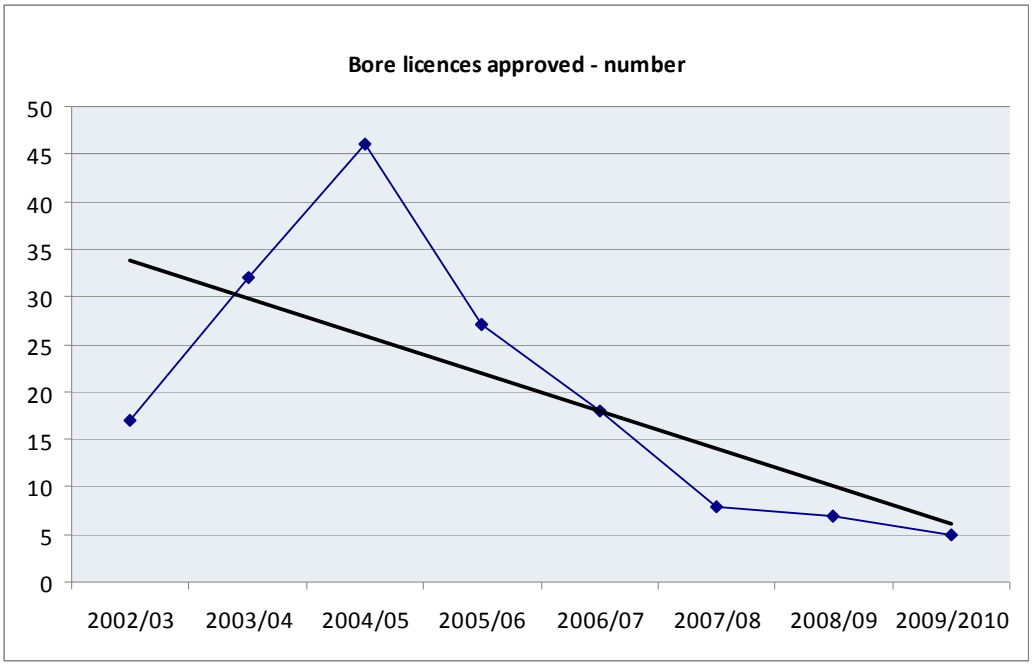
Water is an increasingly scarce resource in Australia, as population and water usage increases in an environment with limited and fluctuating rainfall. The trend data may suggest that the residential community has a growing awareness of water related issues and our need to conserve this valuable resource.

Source: *Sydney Water, 2010*

Number of bore licences granted to Blue Mountains residents and commercial enterprises

What is the trend?

Bore licences are issued and monitored by the NSW Department of Environment, Climate Change & Water (DECCW). Since 2004-2005, the number of bore licences granted annually has decreased. However this data does not account for the unlicensed extraction of ground water. In addition the volume of water extracted from residential bores, which are not required to have a meter.



Bore Licenses Approved								
Year	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Number	17	32	46	27	18	8	7	5

Why is monitoring this trend important?

Groundwater is an important resource that supports ecological communities and is essential for many ecosystems that are prevalent in the region. However, the impacts of extracting groundwater are not well understood. Groundwater provides the base flows from which hanging swamps, rivers, stream and water falls are supported. Groundwater also feeds into catchment areas that provide a consistent water supply for the built environment.

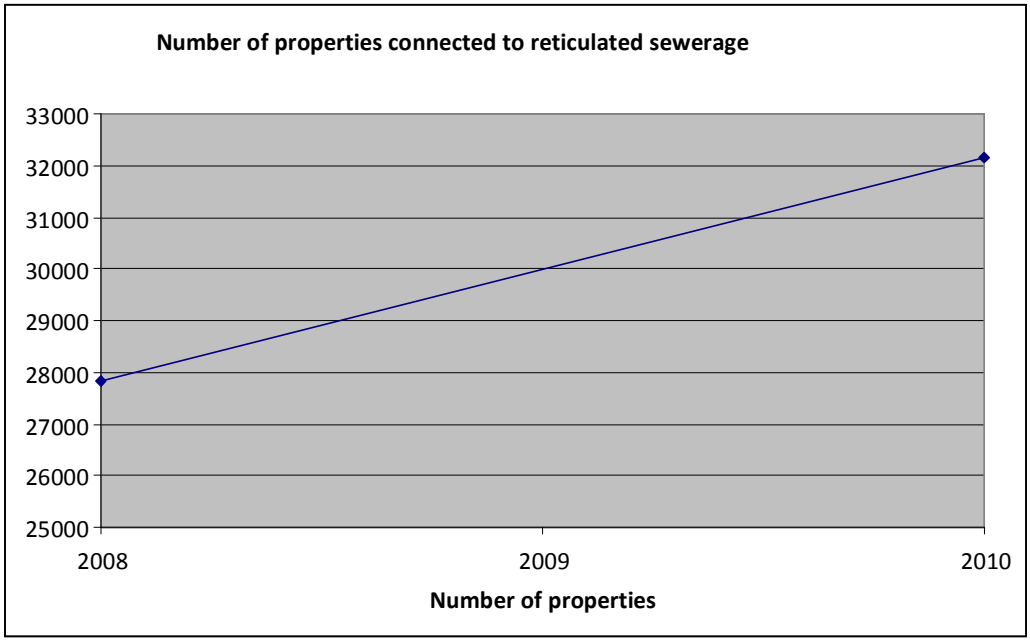
Source: *New South Wales Government Department of Environment, Climate Change & Water (DECCW) 2010.*

Number of properties connected to reticulated sewerage infrastructure

What is the trend?

The sewerage reticulation system transports wastewater from properties in the Blue Mountains to the Winmalee sewage treatment plant (STP) where it is subjected to tertiary treatment methods prior to discharge to a neighbouring creek.

The number of properties with access to the reticulated sewerage system has increased since the Sydney Water Upper Blue Mountains Sewerage Scheme expanded the sewerage infrastructure to service more properties in the Blue Mountains LGA in 2006. The expansion of this infrastructure is due for completion in December 2010.



Properties connected to reticulated sewerage infrastructure	Oct-08	Oct-10
Number of properties connected to reticulated sewerage infrastructure	27,835	32,150

Why is monitoring this trend important?

The Blue Mountains is likely to continue to have a combination of on-site and reticulated systems. Increasing the proportion of properties connected to the reticulated sewerage system can potentially reduce negative impacts on water quality and weed infestation. This can in turn positively impact the health of the community and the natural environment.

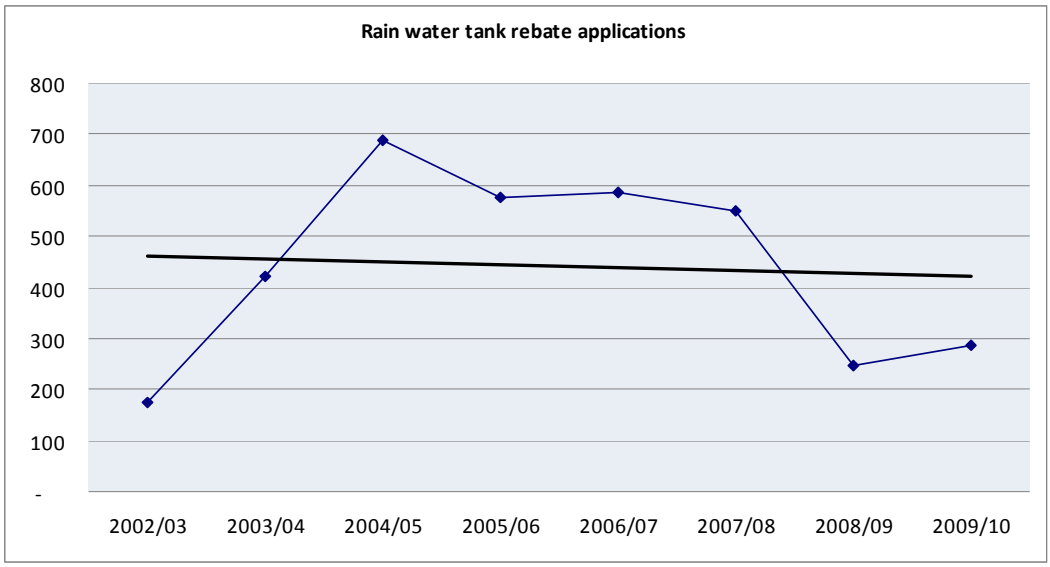
***Source**: Sydney Water 2010*

Number of new rainwater tanks as measured by tank rebate applications

What is the trend?

This data reflects the number of applications received by Sydney Water for rebates on rain water tanks from Blue Mountains residents.

Blue Mountains residents put in the highest number of applications for tank water rebates out of all metropolitan LGA's between 2002 and 2004. Since commencement of the scheme Blue Mountains residents have applied for 3,710 water tanks.



Water Tank Rebate Applications – Blue Mountains								
Year	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
No. of Applications	173	422	689	577	585	549	247	286

Why is monitoring this trend important?

Use of rainwater tanks reduces the demand on dam water and contributes to a more sustainable use of water resources. Rebates encourage people to buy and install rain water tanks, and the uptake of rebates is a fair indication of the number of new tanks being installed.

Source: *Sydney Water*

Condition of stormwater assets provided by the Council

What is the trend?

No trend data is available.

The current condition of stormwater assets is presented in the table below.

Stormwater Asset	Current Condition*
Kerb & Gutter (493km)	3
Pipes (145km)	3
Pits (7,296)	3
Shoulders	4
Open Channels (60km)	4
Stormwater Quality Improvement Devices (320 devices)	2

**As assessed in 2009-2010*

Condition codes

Condition Level	*Condition*	*Description*
1	*Excellent*	*No work required (normal maintenance)*
2	*Good*	*Only minor maintenance work required*
3	*Average*	*Maintenance work required*
4	*Poor*	*Renewal required*
5	*Very Poor*	*Urgent renewal/upgrading required*

Why is monitoring this trend important?

A key component of the Blue Mountains Sustainability Framework, is that there are core components – natural, built and social assets – which are working together to support quality of life. Understanding the condition or state of these assets within our City is an important consideration when making decisions. It is important that action taken protects the assets that support our quality of life.

The condition of stormwater assets impacts on the efficiencies of the stormwater network and the ability for the network to function to its required capacity. Stormwater assets can assist in reducing the negative impacts of stormwater on creeks and bushland including reducing erosion of exposed soils and litter from entering creeks and bushland.

Source: *Blue Mountains City Council*

Land

Land as a natural asset includes the geological landscape, top soil availability, soil health, as well as land supporting natural systems and land available to support human uses.

Much of the local government area (LGA) of the City of the Blue Mountains is recognised under the State Environmental Planning Policy as 'Conservation Area sub catchments.'

A Local Environmental Plan is the principal legal document for controlling development at the Council level and must be approved by the Minister for Planning after public exhibition. The zoning provisions in the LEP establish permissibility of uses and standards regulate the extent of development.

Substantial areas of the natural environment are protected, not only through the creation of reserves and inclusion in National Parks, but also through the creation of Environmental Protection zones and Protected Areas within the Local Environmental Plan (LEP) 2005 and LEP 1991.

Approximately 86% of the local government area is protected bushland. National Park covers approximately 70% of the total area of the City and the other 16% of land is predominately native vegetation.

Trend data for assessing land

Trend data for assessing the condition of land is not readily available. The single measure available for land exhibited a negative trend as shown in the following table.

State Measures for land

Selected Natural Assets	State Measures (Condition of Natural Assets)	Desirable Trend	Observed Trend
Land	Area of undeveloped land / bushland remaining within the urban footprint of the City	➔	*Insufficient trend data available*
	Number of sites registered as contaminated	⬇	*Insufficient trend data available*

For further details refer to data sheets on the following pages.

Area of undeveloped land/ bushland remaining within the urban footprint of the City

What is the trend?

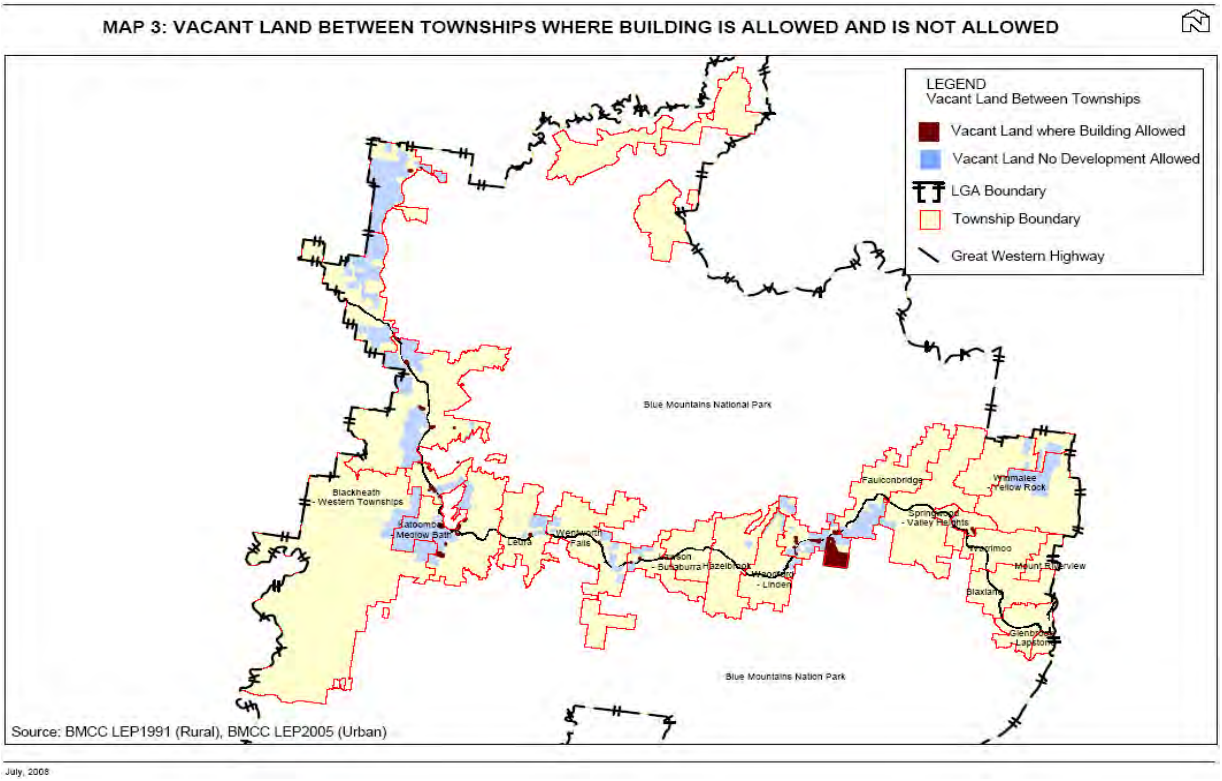
Trend data is not yet available. The ***Map*** that follows shows the areas of "vacant" land remaining within the zoned urban footprint of the City (excluding National Park), upon which development is allowed and not allowed according to LEP 2005 and LEP 1991.

Why is monitoring this trend important?

Retaining undeveloped and intact bushland is important as it creates habitat for native species of plants and animals and supports healthy indigenous ecological communities and ecosystems. Bushland within the urban footprint is an important natural asset both in terms of preserving the natural environment and maintaining quality of life. The less bushland retained in the City the more likely that there will be a decrease in biodiversity.

As shown on the **Map** there is only a small amount of vacant land available within the urban footprint where development is permitted. As the other vacant land is protected by the planning instruments LEP 10091 and LEP 2005, it is unlikely these areas will be developed significantly in future years unless the planning instruments are revised.

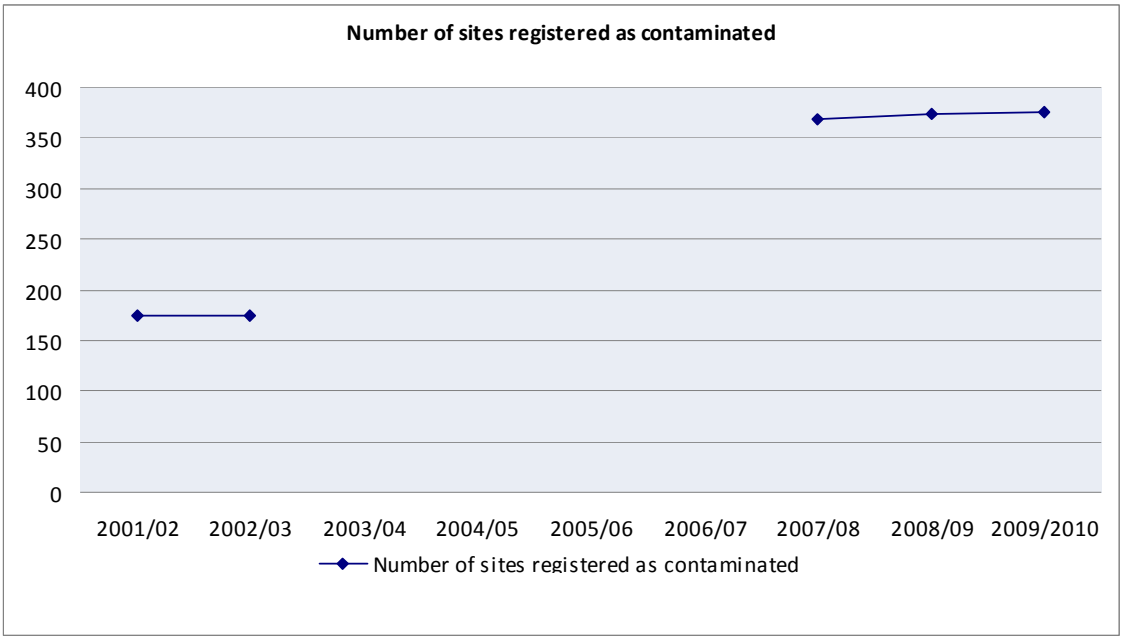
Source: *Blue Mountains City Council, 2009*



Number of sites registered as contaminated

What is the trend?

The number of sites registered as contaminated significantly increased between 2001/2002 and 2007/2008 due to the addition of sewer pumping stations to the register in 2008 and have remained fairly stationary since then.



Year	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10
Number of sites registered as contaminated	175	175	-	-	-	-	368	374	375

Why is monitoring this trend important?

Sites are classified as contaminated when hazardous substances occur at concentrations above normal background levels and pose a potential risk to human health or the environment.

Land contamination is most often the result of past land uses such as service stations, fuel depots, horticultural facilities, orchards and gasworks.

Activities such as improper chemical handling or storage may pollute land and groundwater. Activities outside the actual site's boundaries may also cause contamination; for example, polluted groundwater migrating under a site or dust settling from industrial emissions.

Council maintains a register of contaminated land. The register highlights contamination issues which may occur during the development application process.

Source: *Blue Mountains City Council*

Biodiversity

The different geology, soil types, climates and altitudes of the Blue Mountains have combined to produce a high level of diversity as well as endemic species within the local flora and fauna.

Healthy ecosystems provide us with the oxygen we breathe, remove carbon dioxide from the air, cleanse water as it passes through swamps and streams, and keep soil fertile. Our society relies upon healthy ecosystems.

Council strives to maintain the biodiversity values of the Blue Mountains LGA through their environmentally sensitive planning controls and bushland management works. Particular attention is directed at maintaining biodiversity unique to the Blue Mountains region such as the Blue Mountains Dwarf Mountain Pine, the Blue Mountains Water Skink and the Blue Mountains Swamps Endangered Ecological Community.

Trend data for assessing biodiversity

As shown in the following tables, data available for biodiversity is trending in negative directions.

State Measures for biodiversity

Selected Natural Assets	State Measures (Condition of Natural Assets)	Desirable Trend	Observed Trend
Biodiversity [ecological communities]	Number of threatened ecological communities in the Blue Mountains		
Biodiversity [plants and animals]	Number of threatened plant and animal species in the Blue Mountains		

Pressure Measures for biodiversity

Selected Natural Assets	State Measures (Condition of Natural Assets)	Desirable Trend	Observed Trend
Biodiversity	Number of declared noxious weeds which occur in the City of Blue Mountains		
Biodiversity	Amount of Public Land subject to Mechanical Fuel Management Works		
Biodiversity	Number of tree removal applications approved		

Response Measures for biodiversity

Selected Natural Assets	State Measures (Condition of Natural Assets)	Desirable Trend	Observed Trend
Biodiversity	Number of hours worked by volunteers doing bush regeneration as part of Blue Mountains City Council assisted program		

For further details refer to data sheets on the following pages.

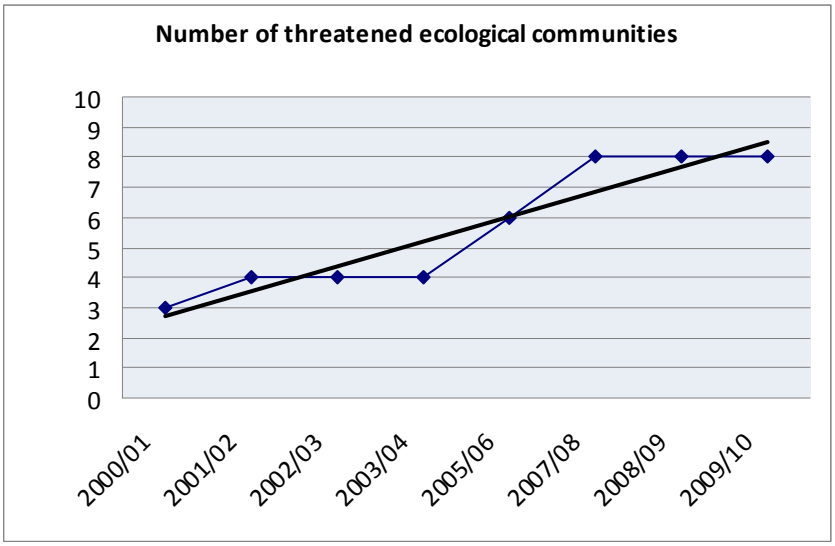
Number of threatened ecological communities in the Blue Mountains

What is the trend?

An ecological community is a group of species that occur together in a particular area. For example a particular group of plants and animals which live in a wet swampy location. This measure represents the number of ecological communities listed on the Threatened Ecological Communities list for NSW; that exists in the Blue Mountains.

Threatened Ecological Communities are identified by the NSW Scientific Committee under the NSW Threatened Species Conservation Act 1995 as being threatened across NSW. Listing is based on factors such as vulnerability of an ecological community as well as extent of the ecological community across NSW. Hence some ecological communities may be stable in the Blue Mountains but actually threatened on a NSW wide scale.

The number of threatened ecological communities in the Blue Mountains has generally increased since 2000/2001. Eight threatened ecological communities have been recorded to exist in the Blue Mountains. This increase is considered to be largely due to improved monitoring and understanding of endangered ecological communities as well as a result of ongoing degradation of the endangered ecological communities at a state level; rather than as a result of any local conditions in the Blue Mountains.



Year	2000/01	2001/02	2002/03	2003/04	2005/06	2007/08	2008/09	2009/10
Number of threatened ecological communities	3	4	4	4	6	8	8	8

Threatened Ecological Communities in the Blue Mountains		
Species	Date gazetted	Status
Blue Mountains Shale Cap Forest	2000	Endangered
Shale Sandstone Transition Forest	1998	Endangered
Sydney Turpentine Ironbark Forest	1998	Critically Endangered

Cont'd Threatened Ecological Communities in the Blue Mountains		
Species	Date gazetted	Status
Sun Valley Cabbage Gum Forest	2001	Endangered
River-flat Eucalypt Forest	2004	Endangered
Newnes Shrub Swamp	2005	Endangered
Blue Mountains Swamps	2007	Vulnerable
Montane Peatlands and Swamps	2004	Endangered

Why is monitoring this trend important?

Ecological communities are specialised habitats for diverse species – where the survival of animals and plants depends on the interactions between the various species within the community. Threatened species can also be found within ecological communities; protecting the community also protects that species. For example the Blue Mountains water skink is found only in upland swamps of the Blue Mountains. Identifying and monitoring threatened ecological communities provides a means of protecting these habitats and the species within them.

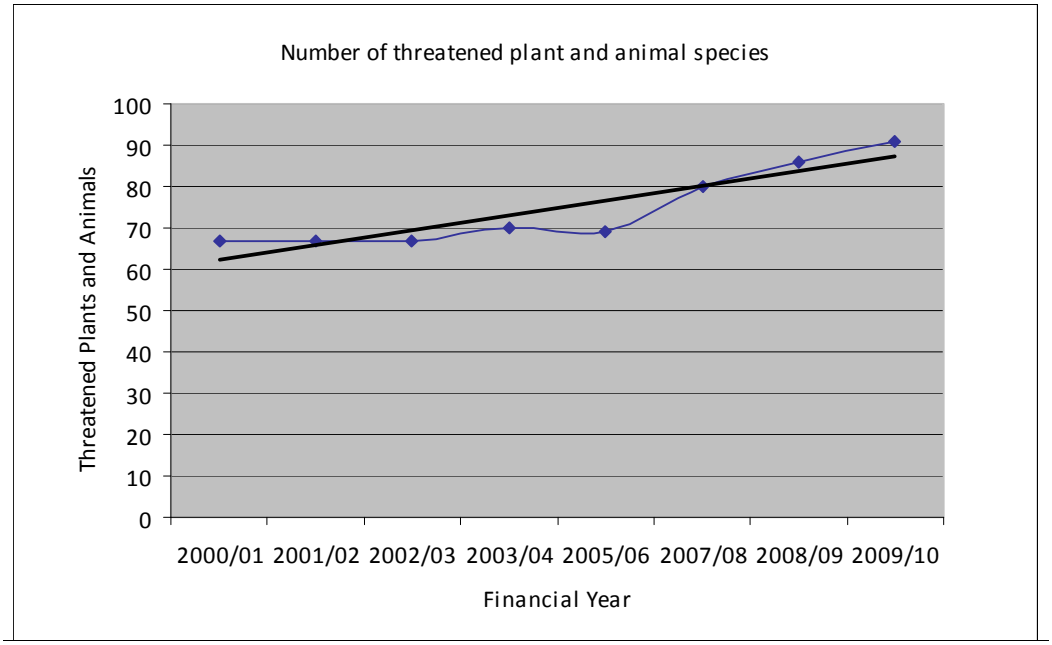
Source: *NSW Scientific Committee – Final determination*
http://www.environment.nsw.gov.au/committee/FinalDeterminations.htm

Number of threatened plants and animals within the Blue Mountains local government area (LGA)

What is the trend?

The NSW Scientific Committee determines which species should be listed as threatened species under the NSW Threatened Species Conservation Act 1995. Listing is based on factors such as vulnerability and extent of that species across NSW. Hence some threatened species may be stable in the Blue Mountains but threatened on a NSW wide scale and therefore listed. Some species may also be listed because they have a naturally limited distribution making them vulnerable to any disturbance.

The number of threatened species in the Blue Mountains has increased from 67 in 2000/2001 to 91 in 2009/2010. The increase in number of threatened plant and animal species in the Blue Mountains since 2001 is considered to be more of a result of State wide impacts rather than as a result of adverse conditions arising in the Blue Mountains.



Financial Year	2000/01	2001/02	2002/03	2003/04	2005/06	2007/08	2008/09	2009/10
Number of threatened plants and animals	67	67	67	70	69	80	86	91

Why is monitoring this trend important?

Biodiversity is inherently valuable in its own right and a reason why many visitors and residents come to the City of Blue Mountains – a City in a World Heritage environment. Monitoring the biodiversity of the animal and plant species provides an indication of the impact of the human development on the natural environment.

Data available to monitor biodiversity is limited. In 1995, Smith and Smith reported that there were 327 native animals and 946 native plants in the Blue Mountains local government area. A more recent analysis has not been undertaken and an assessment of the number of new species has not been attempted.

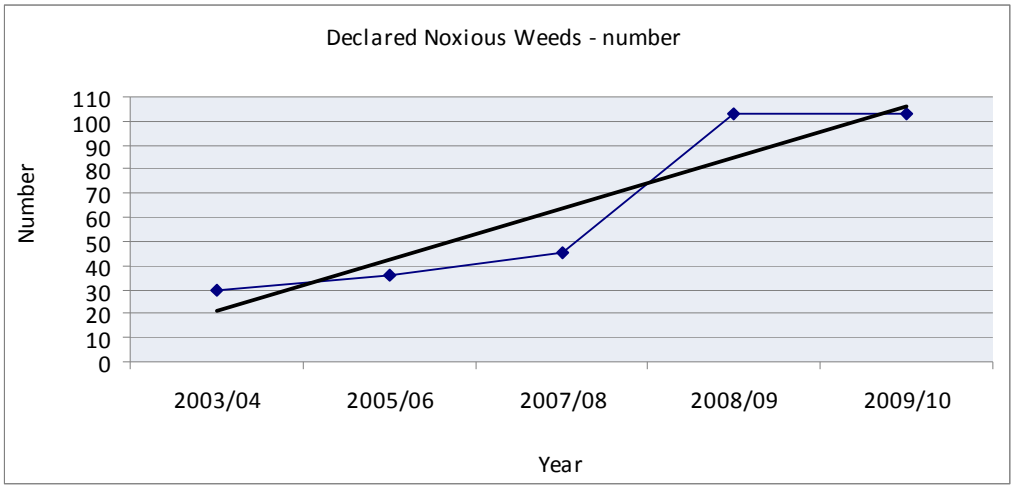
Source: Blue Mountains City Council, State of Environment Reports 2000 – 2008, - City of Blue Mountains *www.sustainablebluemountains.net.au/resources/publications/*, Smith, P. and Smith, J. 1995. Flora and fauna study for the Blue Mountains Environmental Management Plan.

Number of declared noxious weeds that are known to occur in the Blue Mountains

What is the trend?

The term 'Noxious Weed' is a legal term. The *Noxious Weeds Act, 1993* declares and classifies plants which are a danger to human health, serious economic pests, and invaders of natural systems. Noxious weeds in the Blue Mountains include plants such as gorse, lantana, bamboo and pussy willow.

The number of declared noxious weeds that are known to occur in the Blue Mountains has generally increased between 2003-2004 and 2009-2010. A revision of the NSW Noxious Weed Act 1993 led to a significant number of additional weeds being declared in the Blue Mountains LGA between 2007-2008 and 2008-2009. Whilst the number of declared noxious weeds remained unchanged from 2008-2009 until 2009-2010, Council has nominated a further 6 weeds as being noxious. If approved, their declaration should occur sometime during 2011.



Declared Noxious Weeds in the Blue Mountains					
Year	2003/04	2005/06	2007/08	2008/09	2009/10
Number	30	36	45	103	103

Why is monitoring this trend important?

Weeds are plants which result in the loss of environmental, economic or social values. In the natural environment, weeds compete with the native flora for resources including water, nutrients and sunlight and compromise local biodiversity. Although the number of declared noxious weeds has been increasing, it should be noted that recognising the presence of noxious weeds is an important step in their control and eradication. An increasing number of declared noxious weeds does not necessarily equate to an increasing area of weeds.

Source: *Blue Mountains City Council, State of Environment Reports - City of Blue Mountains*

www.sustainablebluemountains.net.au/resources/publications/

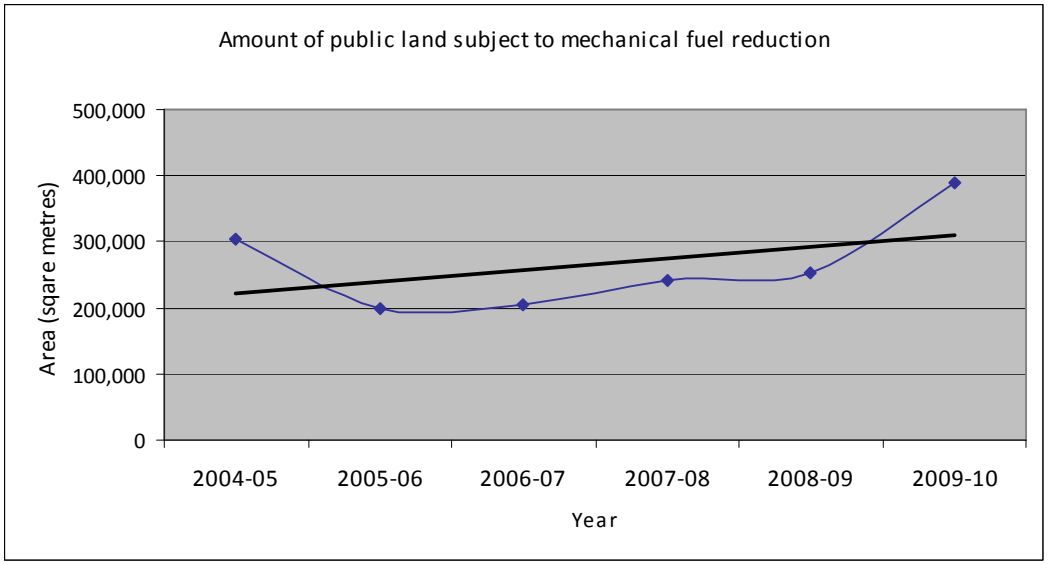
Also refer to ***www.weedsbluemountains.org.au/***

Amount of public land subject to mechanical fuel management works

What is the trend?

BMCC undertakes mechanical fuel management by slashing. These works occurs on the Asset Protection Zone (APZ), or that land which is immediately adjacent to important assets such as residential buildings, industrial areas and other facilities.

The amount of public land subject to mechanical fuel management works has continued to increase since 2006. The main reason for this is as land is cleared it becomes easier to manage, and thus each year the area subjected to mechanical fuel management works increases. The overall area of land within our APZs has not changed considerably.



Year	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Total Program Area (sq.m)	303,157	199,268	205,351	240,734	254,000	388245

Why is monitoring this trend important?

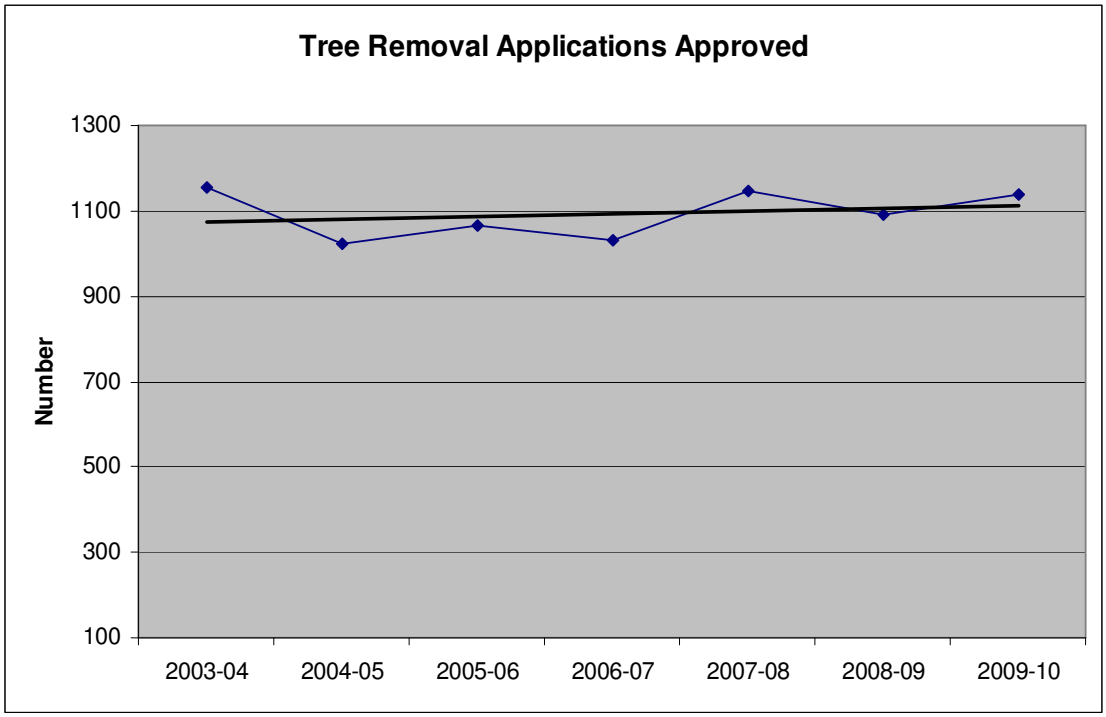
Monitoring of these trends provides information on the amount of land subject to disturbance as a result of mechanical fuel management practices, which may translate in pressure on the sustainability of biodiversity within these zones.

Source: *Blue Mountains City Council*

Numbers tree removal/pruning (Tree Preservation under the Order/ Local Environment Plan (LEP) 2005) applications approved through Council

What is the trend?

The number of applications for tree removals/pruning which were approved or partially approved by Council increased by about 4% between 2008/09 and 2009/10. Of the 1223 applications lodged, 93% were approved and processed.



	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Total Applications	1230	1082	1102	1075	1205	1138	1223
Approved as lodged	1052	936	950	899	994	997	1,007
Partial approval	104	88	114	133	151	95	132
Total approved	1156	1024	1064	1032	1145	1092	1,139

Why is monitoring this trend important?

The removal of individual trees on private property contributes to the changing character and viability of urban bushland and can dramatically affect landscapes. The majority of native trees removed under the Tree Preservation Order / LEP 2005 are of remnant habitat.

The main reasons for removing or pruning trees are:

- To increase access to sunlight, particularly in view of solar panels
- To remove danger
- To protect assets
- To reduce allergens
- To make way for other structures

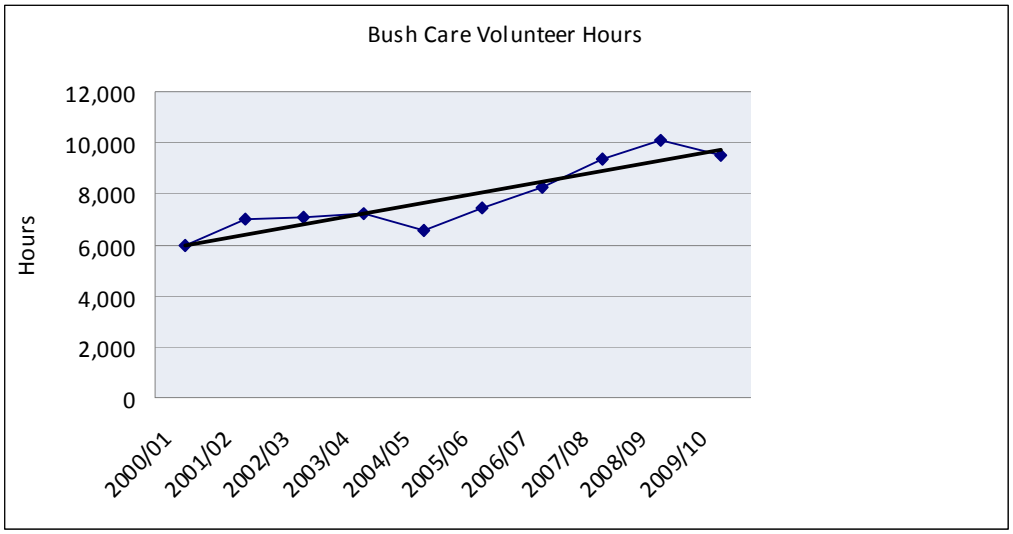
Applications for tree removal/pruning may be for one tree or many trees. The Council does not currently record the total number of trees approved for removal.

Source: *Blue Mountains City Council*

Number of hours worked by volunteers doing bush regeneration as part of Blue Mountains City Council's assisted programs

What is the trend?

The number of hours spent by volunteers regenerating bushland under Council assisted programs has generally increased between 2000/2001 and 2009-2010. The programs include Bushcare and Landcare, both of which support a number of community volunteer groups. Bushcare focuses on public land; where as Landcare's domain is private land.



Bush Regeneration – Volunteer Hours										
Year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10
Volunteer Hours	6,000	7,000	7,100	7,200	6,520	7,440	8,209	9,327	10,077	9,494

Why is monitoring this trend important?

Voluntary bush regeneration produces multiple benefits. It improves the condition of natural assets as well as providing an opportunity for local residents to act as a community. This trend information provides a measure of the community's response to weed invasion and other pressures on our bushland. It also indicates how well the community can respond to local needs and build social capital.

Source: *Blue Mountains City Council*

Atmosphere

The atmosphere is the layer of gases that surrounds the earth. As well as being essential to all life, the atmosphere regulates radiation through the ozone layer and modifies temperature through the greenhouse effect.

Greenhouse gas emissions are increasing worldwide and causing sea level rise, changing weather patterns and more extreme weather events. As greenhouse gases continue to rise, Australia will become hotter and drier (pers. comm. David Karoly 2010). Most of Australia's greenhouse gas emissions over the past decade have come from the burning of fossil fuels for energy as well as agriculture, land-use changes and motor vehicles.

The quality of air around us impacts our health, wellbeing and environment. High air pollution levels have been linked to a number of health problems, including asthma, angina, lung cancer and bronchitis. Poor air quality is usually associated with heavily populated areas where motor vehicle use is high, and where there's a high prevalence of industry and solid fuel-burning heaters in homes.

In the Blue Mountains air quality is adversely impacted by the following:

- Solid fuel heaters;
- Backyard burning;
- Bushfire management;
- Wildfire;
- Road transport; and
- Commercial and industrial activities.

The 2009/2010 data for assessing the condition of the atmosphere is not currently available. However the number of motor vehicles from 1996 to 2006 has increased and would be adversely affecting air quality in the Blue Mountains LGA.

Trend data for assessing atmosphere

Current trend data as shown in the following table for assessment of atmosphere is not available.

State Measure for atmosphere

Selected Natural Assets	State Measure	Desirable Trend	Observed Trend
Atmosphere	Number of sample sites with air particulate loads exceeding the NSW EPA advisory guidelines (2003) for particulate air pollution	⬇	*Current data not available*

Pressure Measures for atmosphere

Selected Natural Assets	State Measure	Desirable Trend	Observed Trend
Atmosphere	Estimated amount of greenhouse gas emissions created through energy consumption by the Blue Mountains Community	⬇	*Current data not available*
Atmosphere	Number of registered vehicles	⬇	*Current data not available*

Cont'd Pressure Measures for atmosphere

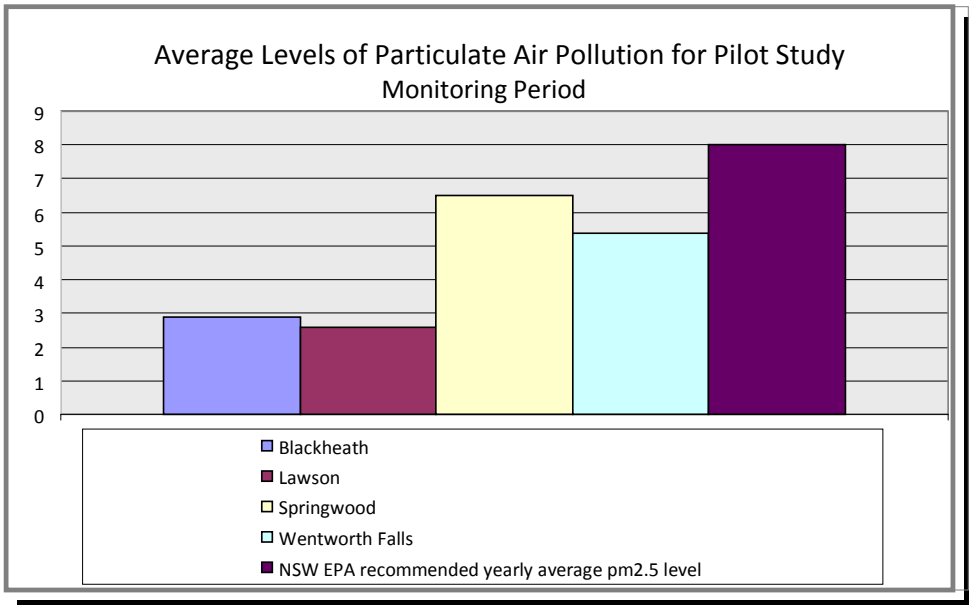
Selected Natural Assets	State Measure	Desirable Trend	Observed Trend
Atmosphere	Use of public transport (buses and trains) for travel to work	⬆	*Current data not available*
Atmosphere	Number of heavy vehicle movements on Great Western Highway	⬇	*Insufficient trend data available*

Number of sample sites with air particulate loads exceeding the NSW EPA advisory guidelines (2003) for particulate air pollution

What is the trend?

Trend data is not yet available. In 2007 a pilot study of particulate air pollution at a number of sites in the Blue Mountains LGA was carried out. Levels of $PM_{2.5}$ were measured. $PM_{2.5}$ is fine particulate air pollution generated by vehicles and wood smoke. The NSW EPA advises that levels of $PM_{2.5}$ should not exceed 25 µg/m^3 in a calendar day nor 8 µg/m^3 averaged over a year.

The results of the Pilot Study show the general background levels of $PM_{2.5}$ at locations monitored are generally low and well below the current advisory NEPM (24 hr) for $PM_{2.5}$ of 25 µg/m3. The levels of $PM_{2.5}$ from wood smoke was high on cold days in two locations where wood smoke was identified as a pollution concern but this was not for long periods. The average ambient $PM_{2.5}$ for the periods of the study's monitoring was below the advisory yearly average of 8 µg/m3. It is noted that the pilot study's reported average levels of $PM_{2.5}$ are based on the monitoring periods of the study and cannot therefore be adequately compared against the NSW EPA recommended yearly average $PM_{2.5}$ level.



Levels of Particulate Air Pollution		
Monitoring Stations	Average levels of $PM_{2.5}$ for the period monitored during the study	NSW EPA maximum recommended yearly average $PM_{2.5}$ level
Blackheath	2.9 µg/m3	
Lawson	2.6 µg/m3	8 µg/m3
Springwood	6.5 µg/m3	
Wentworth Falls	5.4 µg/m3	

Why is monitoring this trend important?

A wide range of respiratory and other health problems are associated with micro particles in air at higher than certain levels. Whilst air quality in the Blue Mountains is not affected by the same volumes of traffic and industry emissions as the Sydney basin, there are still issues of air quality concern. In particular areas for concern are locations close to the highway (especially where trucks are braking heavily) and smoke from bush fires and wood heaters.

Source: *Reed, Sue (2008), Blue Mountains City Council, Pilot Air Quality Study on Fine Airborne Particulates (PM2.5). University of Western Sydney*

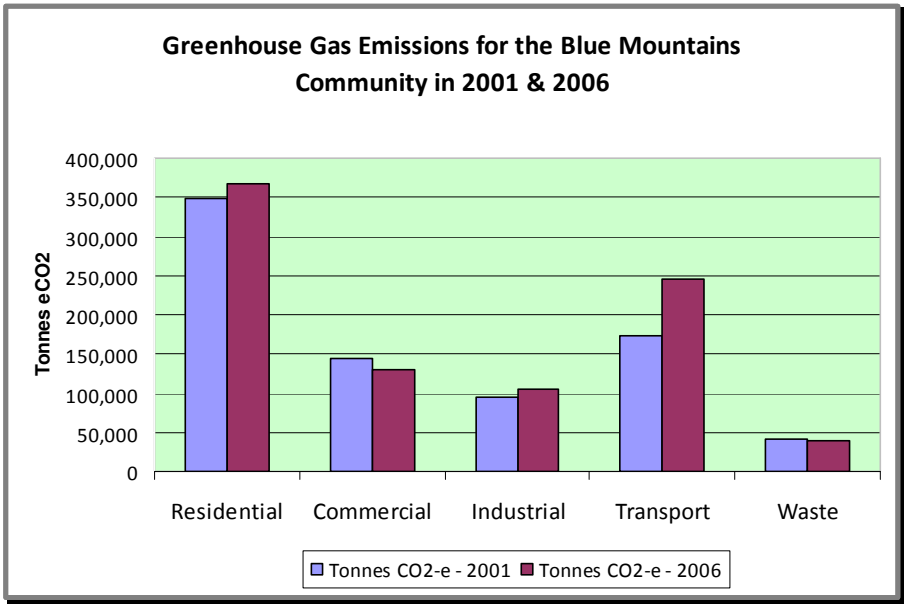
Estimated amount of greenhouse gas emissions created through energy consumption by the Blue Mountains Community

What is the trend?

Community sector Greenhouse gas emissions increased by 10.66% between 2001 and 2006. 800,374 tonnes CO_2^{-e} were emitted in 2001. 885,685 tonnes CO_2^{-e} were emitted in 2006. Energy related greenhouse gas emissions increased in the residential, industrial and transport areas. They decreased in the Commercial and Waste sectors. The Residential sector emitted the greatest amount of greenhouse gas emissions. This arose from household consumption of electricity, natural gas and LPG. The greatest increase in greenhouse gas emissions was from the Transport Sector, which increased emissions by 42.25%. Emissions were reduced in the Commercial sector by 9.51% and in the Waste sector by 6.10%.

Atmospheric gases that have an ability to absorb solar radiation (sunlight) and warm the atmosphere around them are referred to as greenhouse gases. The four most common greenhouse gases are CO_2, N_2O, CFC-12 and methane. CO_2 has a nominal global warming potential of one and as such is used as an index for other greenhouse gases, hence the measure 'CO_2-equivalent'. The amount of greenhouse gas emitted is expressed in tonnes of "carbon dioxide equivalents" (tonnes of CO_2-eq).

Greenhouse gas emissions in the residential, commercial, industrial and transportation sectors are based on estimates of the municipality's energy use provided by ICLEI Oceania. These estimates are calculated by allocating a portion of the state total energy use to the municipality based on its share of the state residential population or state employees in a particular sector. Estimates are derived from the most recent energy use, vehicle use, population and employment data from the Australian Bureau of Agricultural and Resource Economics (ABARE) and the Australian Bureau of Statistics (ABS).



Sector	Tonnes CO_2-e 2001	Tonnes CO_2-e 2006	% change in CO_2-e 2001 - 2006
Residential	348,232	366,541	5.26%
Commercial	143,398	129,768	-9.51%
Industrial	94,650	104,612	10.53%
Transport	173,182	246,347	42.25%
Waste	40,912	38,417	-6.10%
Total	**800,374**	**885,685**	**10.66%**

Why is monitoring this trend important?

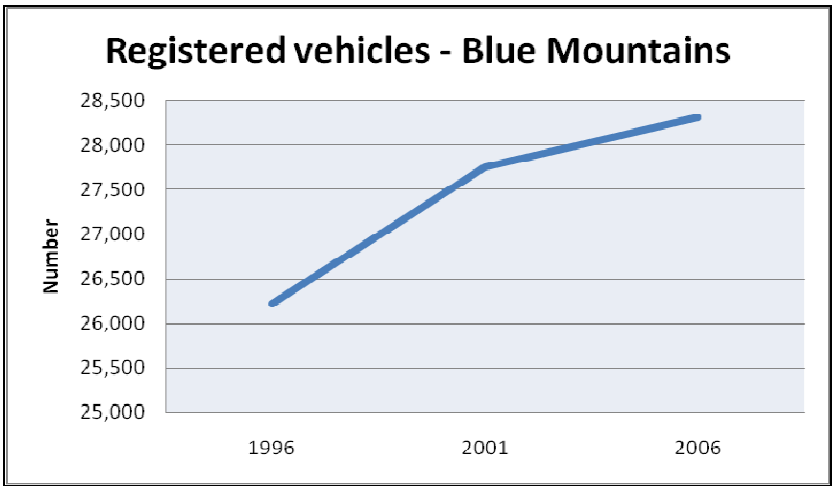
The concentration of greenhouse gases (that produce the greenhouse effect) in the atmosphere has increased significantly since the Industrial Revolution and the Intergovernmental Panel on Climate Change (IPCC), 2007, reports the link between human activity and global warming is almost certain. By monitoring the levels of CO_2-eq emissions produced within our LGA, we are able to formulate plans and actions to reduce our emissions further. Monitoring these levels allows us to see how effective our efforts have been.

Source: *City-wide Audit of Energy, Blue Mountains City Council 2006, Working Group III contribution to the Intergovernmental Panel on Climate Change Fourth Assessment Report Climate Change 2007: Mitigation of Climate Change, Blue Mountains City Council Milestones 5 Progress Report, May 2007: Omega Consulting & Blue Mountains City Council, Cities for Climate Protection Australia: ICLEI – Local Governments for Sustainability Oceania, 2009, www.iclei.org/oceania*

Number of registered vehicles

What is the trend?

The total number of registered vehicles in the Blue Mountains has increased.



REGISTERED VEHICLES - BLUE MOUNTAINS			
YEAR	1996	2001	2006
NUMBER	26,218	27,748	28,311

This data-records the number of registered motor vehicles, which are owned or used by members of a household, and which are garaged or parked near the occupied private dwelling on Census Night. It includes vans and company vehicles kept at home, but excludes motorbikes, scooters and tractors.

Why is monitoring this trend important?

The number of vehicles provides insights into the usage and perception of public transport in addition to the transport options available and the transport choices that residents are making. Environmental impacts such as air pollution, greenhouse gas emissions are results of the community's increased reliance on cars. This data may also provide some indication of how successful our urban design policies are achieving their aim of reducing car usage.

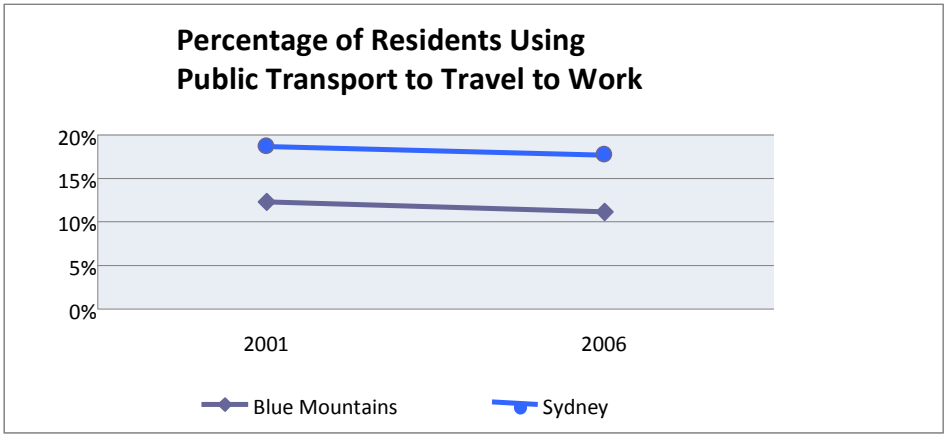
Source: *Australian Bureau of Statistics, Census of Population and Housing, 2006, 2001, 1996*

Use of public transport (buses and trains) for travel to work

What is the trend?

The number of Blue Mountains residents using public transport to travel to work declined from 12.4% in 2001 to 11.1 in 2006 (ABS, 2001, 2006). Public transport use has also declined in the Sydney statistical division. The private motor car continues to be the main mode of transport to work in the Blue Mountains. In 2006, 3,859 people caught a train or bus to work in the Blue Mountains City, compared with 21,438 who travelled in a car, (ABS, 2006). This measure does not differentiate between people travelling within the LGA to work and those travelling further afield. There have been both improvements and deteriorations in public transport between 2003 and 2009.

Improvements to Bus Services 2003 - 2009	Challenges to Bus Service Use 2003 - 2009	Improvements to Rail Services 2003 - 2009	Challenges to Rail Service Use 2003 - 2009
▪ Amalgamation of Two bus companies amalgamated into the Blue Mountains Bus Company. ▪ Increased services between Springwood, Katoomba and Hazelbrook. ▪ Pension Excursion Ticket for use on both train and bus services introduced in 2007. ▪ Currently 25% of Bus services are wheelchair accessible. It is intended this will increase over time.	▪ Safe public access to bus stops has been challenged by the ongoing widening of the Great Western Highway. ▪ Ongoing low patronage of bus services.	▪ Increase in the number of accessible railway stations. ▪ Introduction of Penrith and Emu Plains stops on the 5.23 P.M. and 5.39 P.M. Central to Blue Mountains services. ▪ 5.39 weekday service extended to Lithgow. ▪ 11 Blue Mountains train services increased from four to six carriages. 7 of these services run on weekdays and 4 at the weekend.	▪ Reduction in numbers of fast trains from the Blue Mountains to the City due to increased stopping at Penrith ▪ Discontinuation of the 1.32 A.M. Central to Springwood and the return service 3.45 A.M Springwood to Central were discontinued this affects shift workers, airport customers and people accessing other regional train services. ▪ Poor maintenance of trains in the reporting period ▪ Two weekend services were reduced from 6 to 4 cars.



Percentage of Residents using Public Transport to Travel to Work		
Location/Year	**2001**	**2006**
Blue Mountains	12.4%	11.1%
Sydney	18.6%	17.7%

Why is monitoring this trend important?

The use of public transport can have environmental, social and economic impacts. The transport sector is the third greatest source of greenhouse gas emissions in Australia. This sector is also contributing to emissions growth. Passenger cars contribute significantly to these emissions. (ABS, 2006) Increased use of public transport can potentially reduce pollution and traffic congestion. Use of public transport has the greatest capacity to reduce pollution and traffic congestion during morning and evening peak commuter travel times, however, these are also the times that public transport infrastructure struggles to meet demand. Public transport provides a social service. It can be a lower cost travel for who do not have access to a car.

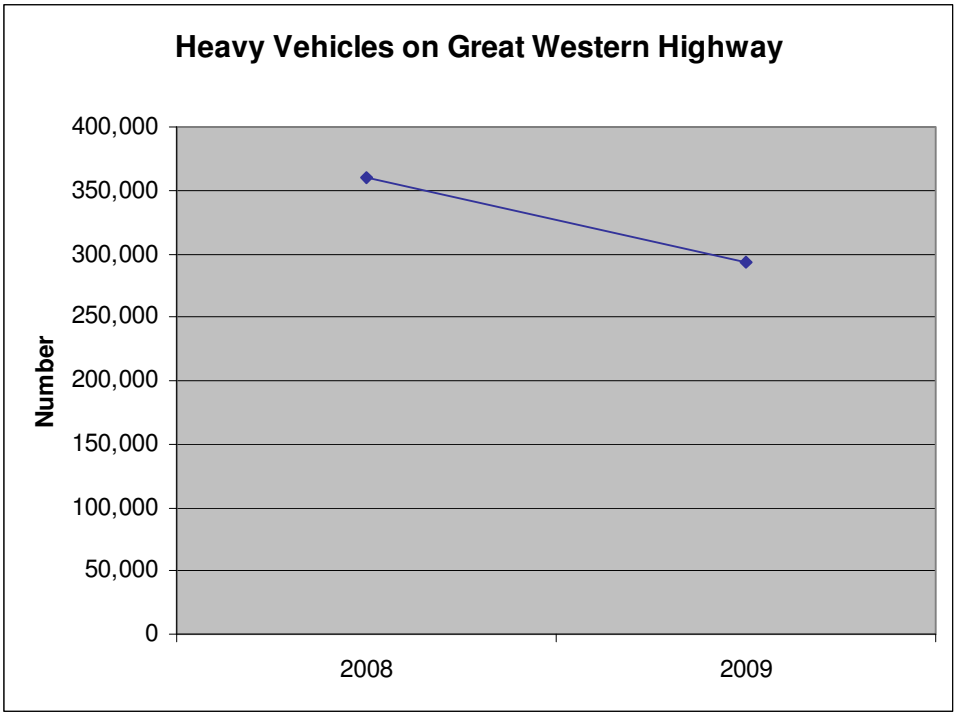
Research suggests that people with lower incomes tend to use more public transport than high income earners. (NCOSS, 2006). Public transport provides a relatively low cost mode of travel for people who do not have access to a car. Public Transport connections to employment, services, education and recreation can significantly influence quality of life by facilitating or hindering access to work, education, recreation, shopping facilities, health and other services and shopping facilities. These connections contribute to economic development by transporting labour forces to and from work and transporting customers for goods and services.

Source: *Australian Bureau of Statistics, Australian Census (2001, 2006), Council of Social Service of New South Wales, 2006,* Blue Mountains Gazette, 2007, *NSW Ministry of Transport, www.transport.nsw.gov.au , Blue Mountains Bus Company; www.bmbc.com.au, CityRail; www.cityrail.info, http://www.infobluemountains.net.au/commuters/news.shtml*

Number of heavy vehicles on the Great Western Highway

What is the trend?

This measure reflects the number of heavy vehicle movements that pass through the Heavy Vehicle Weigh Station at Mt Boyce. This location captures all east and west bound vehicles using the Great Western Highway.The heavy vehicle numbers comprise 14 to 16 per cent of all vehicles that travel on the Great Western Highway and are made up of rigid trucks, semi-trailers and 19-metre B-Double trucks. Standard 26-metre B-Doubles are not permitted to use the highway.



Trucks on Great Western Highway	2008	2009
Rigid trucks per day	102, 135	79,532
Semi-trailers per day	220,589	179,415
19-metre B-Double trucks per day	37,417	34,026
Total truck movements	360,141	292,973
Average truck movements (during operative days)	1084	1158

Why is monitoring this trend important?

Research shows that air quality is adversely impacted by traffic comprising both cars and trucks. However trucks cause much greater air pollution per vehicle than cars. In addition diesel particulate matter emitted by trucks is especially problematic for health. As well as air pollution, trucks contribute to noise pollution and water pollution.

Source: ***BMCC Assessment of the Current Transport Infrastructure, Services and Usage, January 2010 and RTA Australian Standard Classified Vehicle Reports 2008 to June 2010.***

Heritage

Heritage consists of those places and items that give us a sense of the past and of our cultural identity.

The Blue Mountains contains natural landscapes of world significance. The Greater Blue Mountains was inscribed on the World Heritage List in 2000 and covers 10,000 square kilometres of wild bushland.

The Blue Mountains also contains places listed on the NSW State Heritage Register that are rare or historic at a state level. Blue Mountains City Council maintains a heritage register of places of local significance that include buildings, gardens and other historic relics. A Heritage Inventory is managed by the Council and available for viewing on the Heritage Register displayed on the NSW Heritage Office website.

Aboriginal sites are recorded in the Aboriginal Heritage Information Management System for the Blue Mountains which is managed by the NSW Department of Environment, Climate Change and Water. The register is not exhaustive as it only lists recorded sites.

Quantitative measures for assessing the condition of heritage items in the City are not currently available.

Trend data for assessing heritage values and buildings

The qualitative measure available for heritage values and buildings displays a negative trend.

State Measure for Heritage

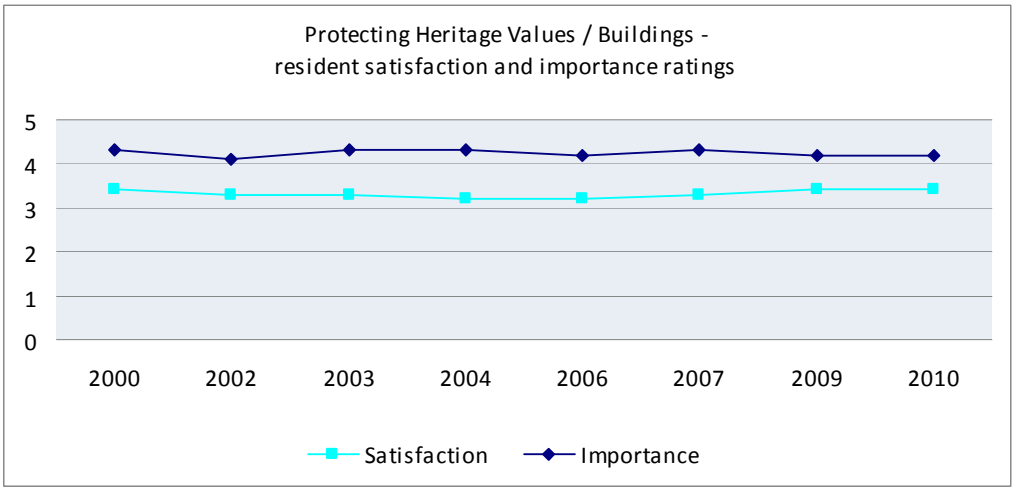
Sector	State Measure	Desirable Trend	Observed Trend
Heritage	Difference between resident satisfaction with and their importance rating for protecting heritage values / buildings provided by BMCC		

For further details refer to the data sheet on the following pages.

Difference between resident satisfaction with and their importance rating for protection of buildings and heritage values provided by BMCC

What is the trend?

Between 2000 and 2010 residents' rating of importance for Council's protection of heritage values and buildings and their satisfaction ratings have remained fairly steady. The importance that residents place on heritage values and buildings continues to be greater than their level of satisfaction with Council's upkeep of these assets.



Protecting Heritage Values/ Buildings								
Satisfaction ratings								
Year	2000	2002	2003	2004	2006	2007	2009	2010
Average rating	3.4	3.3	3.3	3.2	3.2	3.3	3.4	3.4
Importance ratings								
Year	2000	2002	2003	2004	2006	2007	2009	2010
Average rating	4.3	4.1	4.3	4.3	4.2	4.3	4.2	4.2

Why is monitoring this trend important?

Maintaining historic elements of our built environment provides a link with our history and helps create the unique identities of individual townships in the Blue Mountains. Community surveys show that most BMCC residents place important emphasis on protecting buildings and heritage values. The significant gap between importance and satisfaction ratings suggests that more could be achieved in protecting heritage values and buildings.

Source: *Blue Mountains City Council, Blue Mountains Community Surveys: 2000, 2002, 2003, 2004, 2006, 2007, 2009, 2010. The Survey is conducted every one to two years. Ratings are given on a 1-5 scale, with 1 the lowest level of importance and satisfaction and 5 the highest.* ***www.bmcc.nsw.gov.au/yourcommunity/communitysurvey***

Waste

Waste is generally defined as any product or substance that has no further use for the person or organisation that generated it, and which is, or will be, discarded (ABS, 2006).

Council provides a weekly kerbside comingled recycling and waste service collection.
Domestic waste collected from the kerbside is highly mixed and difficult to sort after collection. This waste is high in organic material which is the material primarily responsible for the production of methane and "carbon pollution" during decay. Reducing or avoiding waste is the most sustainable waste management method.

Waste Management Facilities (WMF's) are costly to manage and maintain, they require significant amounts of land and they can have negative environmental impacts in the form of noise, land, air and water pollution. Council operates a single Landfill at Blaxland Waste Management Facility which receives waste from Kerbside collection service, the local residential and business community and the transfer Station at Katoomba Waste Management Facility.

Trend data for assessing waste

Data considered for waste is following positive trends as shown in the table below.

Measures for Waste

Sector	Measure	Desirable Trend	Observed Trend
Waste	Total waste to landfill	↓	↓
	Household waste to landfill per person	↓	↓
	Household waste collected at the kerbside for recycling per person	↑	↑

For further details refer to data sheets on the following pages.

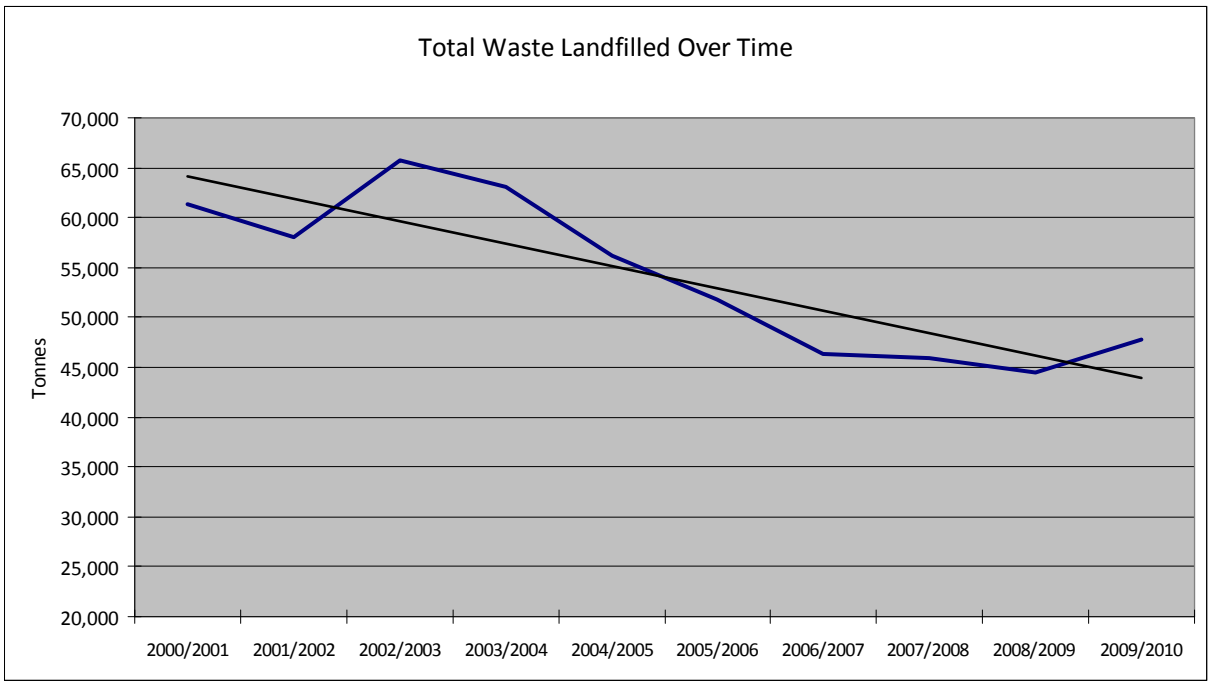
Total waste to landfill

What is the trend?

Blue Mountains City Council provides two Waste Management Facilities (Katoomba & Blaxland) which receive waste only from premises within the Blue Mountains LGA.

The Blue Mountains community has achieved excellent waste diversion results over the last several years. During the 10-year period July 2000 to June 2010 there was a 22% decrease in the volume of total waste going to landfill each year.

The noticeable increase in waste for 2009/2010 is due, primarily, to a substantial increase in mixed building and demolition waste (56% increase over 2008/2009).



Year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10
Tonnes Landfilled	61,393	58,029	65,749	63,115	56,123	51,761	46,291	45,950	44,493	47,765
Population	77,021	77,389	77,504	77,003	76,497	76,066	76,075	76,181	76,409	76,587
Kilograms per Capita Landfilled	797	750	849	820	734	680	607	599	580	624

Why is monitoring this trend important?

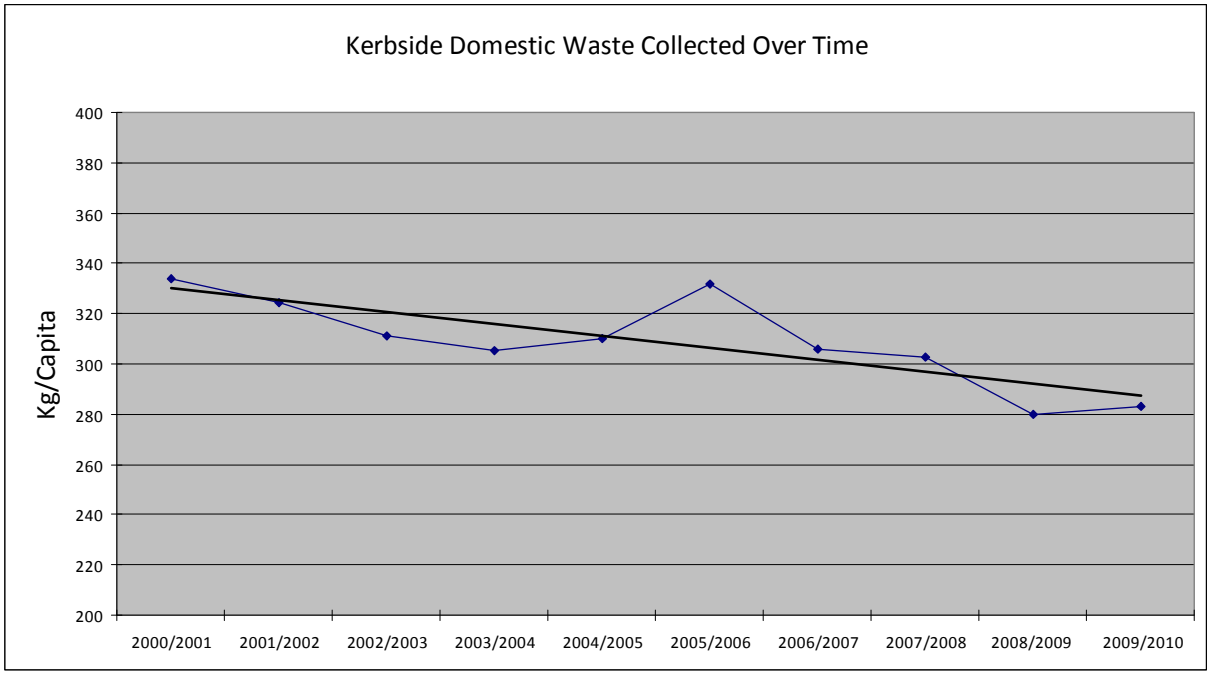
Reducing or avoiding waste is the most sustainable waste management method. Waste Management Facilities (WMF's) are costly to manage and maintain, they require significant amounts of land and they can have negative environmental impacts in the form of noise, land, air and water pollution. Furthermore, there will be limited opportunity to increase the space available to landfill waste into the future.

Source: *Blue Mountains City Council*

Household waste to landfill per person

What is the trend?

Blue Mountains City Council provides a weekly kerbside domestic waste collection service. The volume of domestic waste land filled has decreased gradually over the past 10 years. The most significant decrease occurred between the 2007-2008 and 2008-2009 financial years due to the substantial increase in recycling volumes experienced with the introduction of the weekly mobile recycling bin service. The recycling volumes have now stabilised and, although there was a small increase during 2009 -2010, the volume of domestic waste collected from the kerbside is still trending downwards.



Year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10
Tonnes Collected	25,714	25,078	24,090	23,495	23,702	25,219	23,327	23,224	21,477	21,684
Population	77,021	77,389	77,504	77,003	76,497	76,066	76,075	76,181	76,409	76,587
Kilograms per Capita Collected	334	324	311	305	310	332	307	305	281	283

Why is monitoring this trend important?

Domestic waste collected from the kerbside is highly mixed and difficult to sort after collection. This waste is high in organic material which is the material primarily responsible for the production of methane and "carbon pollution" during decay. Reducing or avoiding waste is the most sustainable waste management method. Waste Management Facilities (WMF's) are costly to manage and maintain, they require significant amounts of land and they can have negative environmental impacts in the form of noise, land, air and water pollution. Council is responsible for two active Waste Management Facilities (WMF's) (Blaxland and Katoomba) and two dormant landfills (Blackheath and Lawson).

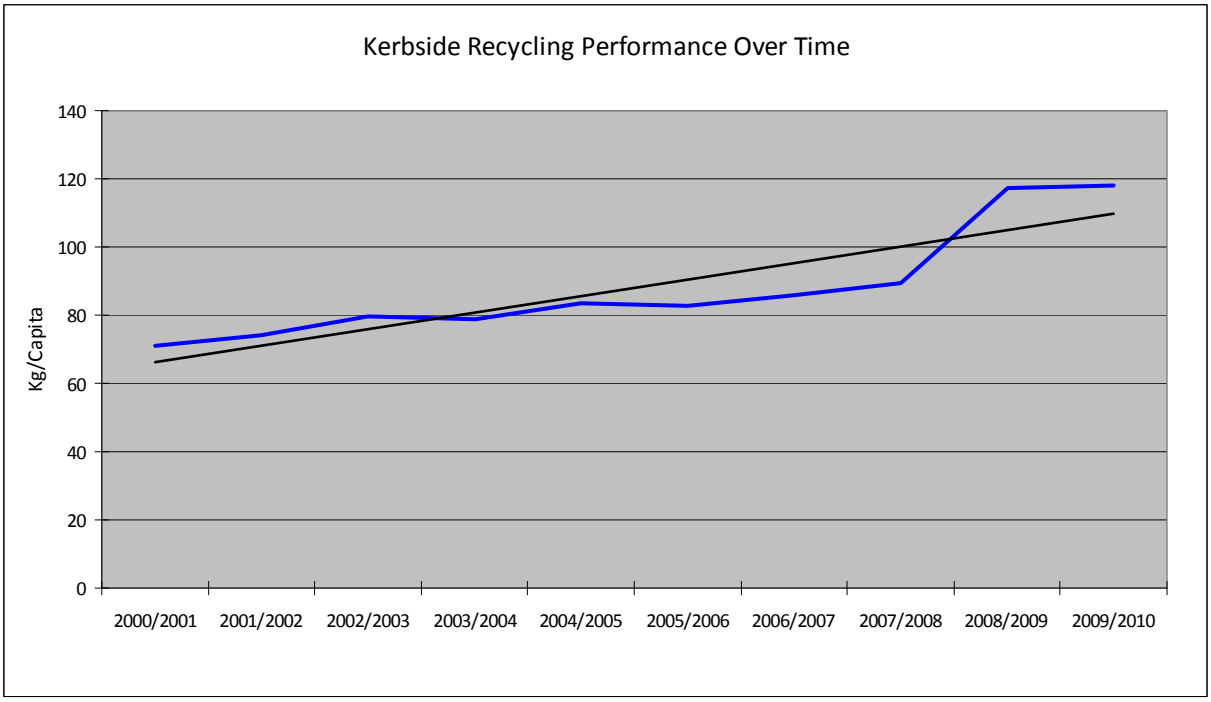
Source: *Blue Mountains City Council*

Household waste collected at the kerbside for recycling per person

What is the trend?

Blue Mountains City Council provides a weekly kerbside household recycling collection. This is a commingled service with a range of recyclable material placed in the bin. This measure shows the kilograms of kerbside recycling waste collected per capita (person).

Between 2000-2001 and 2009-2010 the amount of household waste collected for recycling has steadily increased. Almost 95% of material placed in the recycling bin is correct. With the change in collection container from crate to mobile bin in 2008-09, the volume of material collected has increased significantly from 53% of households using the crate based service every week to 71% of households using the wheelie bin service every week.



Year	00/01	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09	09/10
Tonnes Collected	5,464	5,725	6,167	6,072	6,376	6,303	6,554	6,850	9,003	9,032
Population	77,021	77,389	77,504	77,003	76,497	76,066	76,075	76,181	76,409	76,587
Kilograms per Capita Collected	70.946	73.980	79.572	78.858	83.360	82.868	86.162	89.917	117.826	117.931

Why is monitoring this trend important?

Reducing or avoiding waste is the most sustainable waste management method. It is also the method that individuals can make the largest contribution with. However recycling reuses valuable finite resources and has the potential to divert waste from landfill.

Source: *Blue Mountains City Council; Blue Mountains City Council, Strategic Waste Action Plan, 2005*

Noise

Environmental noise is a growing issue within the community. Noise from urban developments, transport/traffic, industrial construction, neighbourhood and recreational noise adversely impact the community, wildlife and our quality of life.

The majority of noise complaints received by the Council relate to barking dogs. Amplified music receives the next most complaints.

Councils address noise complaints through their environmental health officers and rangers who are able to take action under various government acts and council regulations. This role is shared with the Police, the Department of Environment and Climate Change and/or the specialised authorities such as the Roads and Traffic Authority.

Trend data for assessing noise

Noise data depicts an adverse trend as shown in the table below.

Measure for Noise

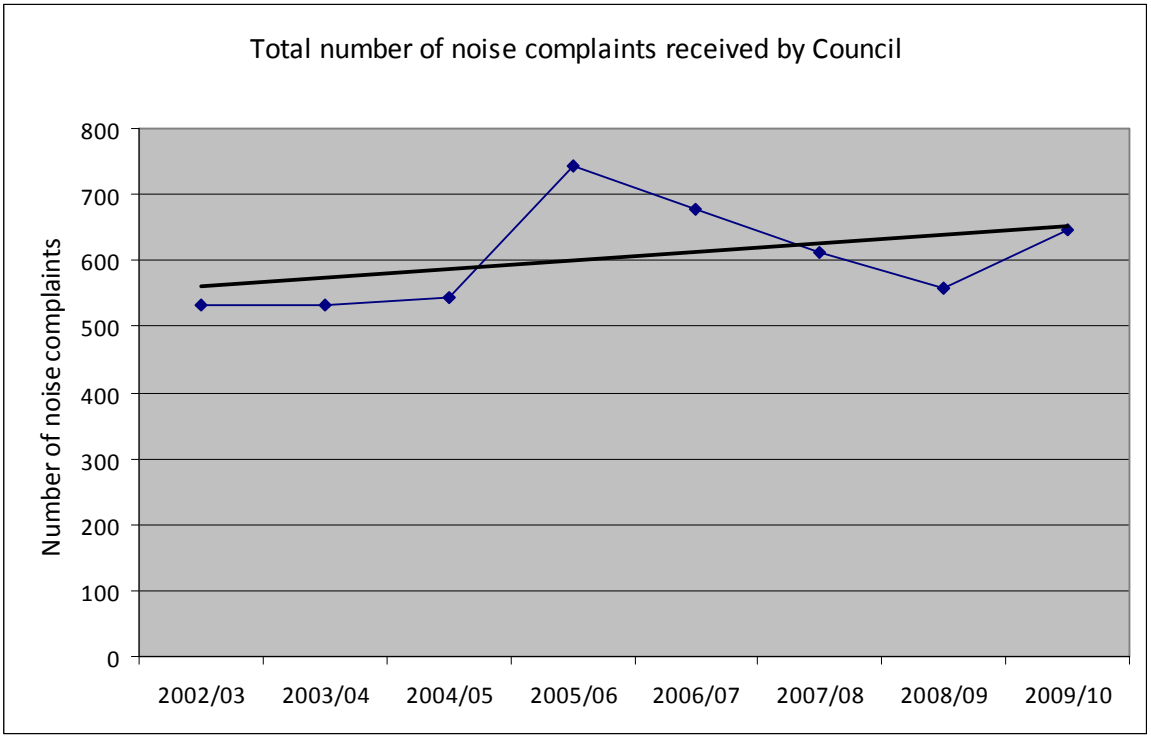
Sector	Measure	Desirable Trend	Observed Trend
Noise	Number of noise complaints received by Council		

For further details refer to the data sheet on the following page.

Number of domestic noise complaints received by Council

What is the trend?

Noise complaints have generally increased between 2002/2003 and 2009-2010. Noise related to amenity issues has also risen over this period. The majority of noise complaints received by the Council relate to barking dogs.



Year	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
Dog	410	448	424	561	536	484	435	463
Other animal noise	25	18	20	34	26	25	38	39
Other amenity noise issues	96	66	101	148	117	104	84	145
Total	**531**	**532**	**545**	**743**	**679**	**613**	**557**	**647**

Why is monitoring this trend important?

Noise can be annoying, interfere with speech, disturb sleep or interfere with work. Prolonged exposure to loud noise can also result in increased heart rate, anxiety, hearing loss and other health effects. The impacts of noise depend both on the noise level and its characteristics and how it is perceived by the person affected. The *Protection of the Environment Operations (Noise Control) Regulation 2008* restricts the times in which domestic activities can be undertaken in a residential setting. Local councils are largely responsible for managing noise issues (in collaboration with the Police) under the *Protection of the Environment Operations Act 1997*.

Source: *Blue Mountains City Council, 2010*

SUMMARY OF RESULTS

Positive trends

Positive results exhibited by the available trend data are as follows:

- Waterways affected by urban development in the catchment have maintained a 'good' to 'very good' water quality rating indicating that aquatic ecosystems in the LGA's water ways remains at healthy levels
- There is less pressure on Warragamba dam and Blue Mountains reservoirs from the Blue Mountains LGA as the volume of water consumed in the LGA is reducing
- The threat of pollution to neighbouring waterways from onsite sewage systems has reduced
- The number of bore licences granted to Blue Mountains residents decreased, indicating that less groundwater was extracted by residents
- Bush regeneration work continued to increase
- Less household waste was collected at the kerbside and the total amount of waste going to landfill reduced
- The total amount of recycling waste collected at the kerbside increased

Trends of concern

The available data indicates the following trends which may be of concern:

For water:

- Decreasing number of rain water tank rebate applications made by residents;

For biodiversity:

- Increasing number of NSW threatened ecological communities occurring in the LGA;
- Increasing number of NSW threatened plant and animal species occurring in the LGA;
- Increasing number of NSW declared noxious weeds occurring in the LGA;
- Increasing amount of Public Land subject to Mechanical Fuel Management Works; and
- Increasing number of tree removal applications approved.

For heritage:

- Resident's satisfaction with heritage values and buildings as provided by BMCC still rates below their sense of importance for this asset.

For noise:

- Increasing number of noise complaints.

CONCLUSION

The 2009-2010 Supplementary SoE has been reported in a succinct 'report card' format which articulates some of the underlying issues of the LGA's natural environment based on the trend data available.

The report highlights that there is evidence for concerns around our environment's biodiversity, water and heritage and that there is an insufficiency of meaningful reliable data for elements of the natural environment, in particular land, biodiversity, air and water.

The findings of the Supplementary SoE report 2009/2010 will be communicated to stakeholders and it is anticipated that these findings will be given due consideration in the Council's business planning process.

REFERENCES

The following documents have been referenced during the compilation of this report:

~ *State of the Environment Guideline, State of the Environment Reporting by Local Government; Promoting Ecologically Sustainable Development 1999.*

~ *David Karoly. pers.comm. University of Melbourne, Climate Change Scientist. Summit at the Mount 2010. Recharging the Region. 2010.*