

# State of the **ENVIRONMENT** **REPORT 2010**



*Drosera spatulata*



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# CHAPTER 1: INTRODUCTION

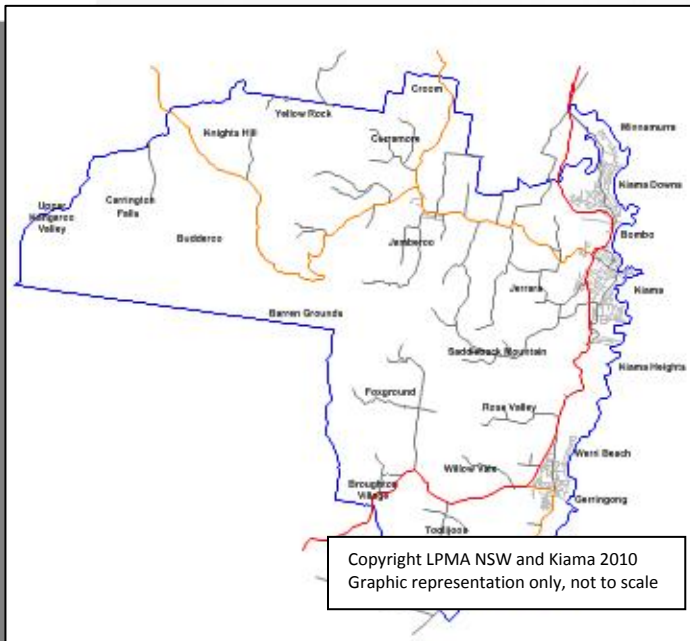
## 1.1 KIAMA MUNICIPALITY

The Municipality of Kiama is located on the south coast of New South Wales bordered by the Local Government Areas of Shellharbour, Shoalhaven and Wingecarribee. The area has a diverse range of physical environments, including beaches, rainforests and rural landscapes that attract a large tourist base each year.

The Australian Bureau of Statistics indicated that the estimated resident population figure for the Kiama Municipality at 30<sup>th</sup> June 2009, was 20,641 people. Although there has been a constant increase in population in the area in the past, the percentage of population growth has declined over the last 20 years, with only 5.01% growth between 1996 and 2006 (Australian Bureau of Statistics, 2010).

### Kiama Local Government Area

## 1.2 STATE OF THE ENVIRONMENT REPORTING



A State of the Environment Report for the Kiama Municipality is prepared for each financial year as a statutory requirement of the *Local Government Act 1993*. The report details the condition of, and pressures on the local environment and outlines the current and potential future responses to the identified issues.

A comprehensive report is prepared every four (4) years, within 12 months of the election of any new Council.

Supplementary reports are prepared for the other years, to update the information provided in the previous comprehensive report. This report is a supplementary report for the period 1<sup>st</sup> July 2009 – 30<sup>th</sup> June 2010.

The broad aims and objectives of the State of the Environment Report are to:

- Educate and inform the community, Council, Government and industry about the condition of our environment;
- Assess the progress towards achieving environmental goals and standards;
- Assess the progress towards achieving ecologically sustainable development; and
- Identify important environmental issues.

This report includes chapters which addresses each of the following environmental themes, as required by the *Local Government Act 1993*:

- Land;
- Water;
- Noise;
- Biodiversity;
- Waste;
- Air; and
- Heritage (Aboriginal and Non-Aboriginal)

Each of these theme chapters contains three (3) sections, following the state-pressure-response framework:

- State - outlines the condition of the environmental theme;
- Pressures - outlines the human and natural pressures on the environmental theme; and
- Responses - includes the relevant local actions of Council, other levels of Government and the community, that address the environmental theme

Chapter 9, Sustainability details Council's current strategies and actions addressing sustainability within the Municipality and its own organisation and details activities and programs which may not be included in any single chapter.

## CHAPTER 2: LAND

### 2.1 STATE

#### 2.1.1 LAND USE PLANNING

The existing Kiama *Local Environmental Plan* (LEP) 1996 is the main instrument used by council for land-use planning and development decisions. The LEP is currently being reviewed, with the aim of exhibiting the draft Kiama LEP in late 2010. The LEP provides land use zones that indicate what is permitted or restricted within certain areas of land and what conditions apply. Table 1 lists the zones and the area of land to which they apply.

Environmental Protection Zones are designed to manage and protect environmental assets such as scenic areas, foreshores and wetlands, and these zones carry certain development restrictions.

An additional overlay as part of the LEP 1996 is the areas classified as High Conservation Value. The LEP describes the objectives of such areas and what is permissible within the HCV area. High Conservation Value areas occur over approximately **26%** of the Municipality.

There are three National Parks/Nature Reserves within the Municipality, namely Seven Mile Beach National Park, Budderoo National Park and Barren Grounds Nature Reserve.



*Kiama Coastal Walking Track*

Zone	Area in hectares (% of total area)
<b>Rural</b>	<b>8560.3 (33.2)</b>
1a Rural A	8560.3
<b>Residential</b>	<b>789.4 (3.06)</b>
2a Residential A	727.2
Residential Land subject to Sydney Water	26.4
2b Residential B	35.8
<b>Business</b>	<b>31.7 (0.12)</b>
3a General Business	23.3
3b Special Business (Heritage)	2.3
3c Neighbourhood Business	2.0
3d Business (Tourist related)	4.2
<b>Industrial</b>	<b>105.0 (0.41)</b>
4b Extractive Industrial	83.0
4c Light Industrial	22.1
<b>Special Uses</b>	<b>150.0 (0.58)</b>
5a Special Uses	53.0
5b Special Uses (railways etc.)	97.0
<b>Recreation</b>	<b>387.1(1.50)</b>
6a Existing Recreation	357.8611
6b Private Recreation	29.2
6c Proposed Recreation	0.1
<b>Rural Environmental Protection</b>	<b>10495.3 (40.7)</b>
7b Rural Environmental Protection Zone – Estuarine Wetlands	361.2
7b1 Rural Environmental Protection Zone – Wetlands Buffer	13.5
7d Rural Environmental Protection Zone – Scenic	1309.9
7e Rural Environmental Protection Zone – Hinterland	8524.1
7f Rural Environmental Protection Zone –Foreshore Protection	265.9
7l Rural Environmental Protection Zone - General	20.8
<b>National Park</b>	<b>4931.7 (19.1)</b>
8a National Parks	4931.7
<b>Roads</b>	<b>209.9 (0.81)</b>
9a Proposed Arterial Road	9.2
Arterial Road	200.7
<b>Deferred</b>	<b>97.4 (0.38)</b>
Deferred Zone	97.4
<b>Total</b>	<b>25758.1 (100)</b>

Table 1.1: Local Environment Plan 1996 Zones

### 2.2 PRESSURES

#### 2.2.1 DEVELOPMENT

Development is an essential part of a regions ability to remain vibrant and healthy and also puts pressure on infrastructure, natural resources and environment.

Kiama Municipality experienced slight growth in separate houses and medium density dwellings between 2001-2006

(Kiama community profile id 2010). This is in line with the conclusion of the Illawarra Regional Strategy, 'Kiama is likely to have a more limited role in the regional housing supply. Some medium density potential does exist with Kiama and Gerringong providing the best opportunities for urban infill'.

The Illawarra Regional Strategy outlines plans for the region's new housing, employment growth, natural resources and cultural heritage over the next 25 years. Council is guided by this strategy for future planning.

Figure 2.1 show the number of development approvals that Council granted for residential dwellings, commercial and industrial activities for the period of 2006/07-2009/10. For historical figures from 1999 refer to past State of the Environment reports.

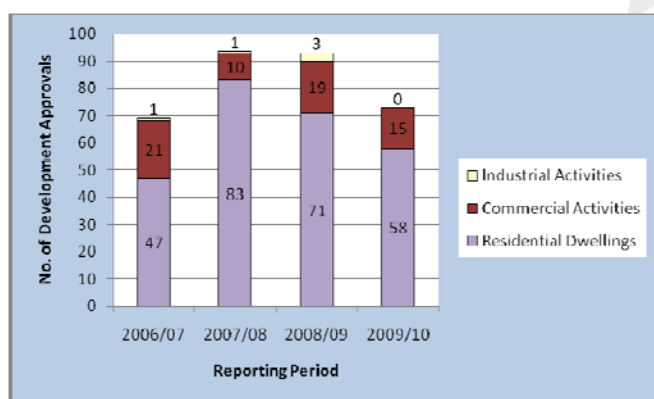


Figure 2.1: Development Approvals for Residential Dwellings, Commercial and Industrial Activities

## 2.2.2 CONTAMINATED LAND

When land that has previously been used for industrial, commercial or rural purposes is reclaimed for more sensitive uses, such as housing, there is the risk that the land may be contaminated. The degree to which the land has been contaminated as a result of the former activity must be determined and any necessary remediation should be carried out. A list of activities that have the potential to cause land contamination can be found in Council's *Development Control Plan No. 37 – Contaminated Land*.

Amendments to the *Contaminated Land Management Act 2008*, commenced on 1<sup>st</sup> July 2009. These changes prescribe certain matters to be included in section 149 (2) planning certificates, and have revised Department of Environment, Climate Change & Water Guidelines on the duty to report contamination and significantly contaminated land, as specified under this Act.

## 2.3 RESPONSE

### 2.3.1 LAND USE PLANNING INITIATIVES

Work continued on the Kiama Local Environmental Plan (LEP) project during the year. The draft LEP is currently awaiting a section 65 certificate from the Department of Planning to enable public exhibition and public submissions by late 2010.

### 2.3.2 CONTAMINATED LAND MANAGEMENT

During the 2009/10 reporting period site contamination, air and water quality studies were undertaken at the former Kiama Gas Works site and submitted to the DECCW.

### 2.3.3 COUNCIL PLANS OF MANAGEMENT

Under Section 36 of the *Local Government Act 1993* Council is required to prepare Plans of Management for all community land. During the 2009/10 reporting period:

- Council adopted the Werri Headland Plan of management
- Drafted the West Kiama Reserve Plan of Management. Awaiting gazettal of Reserve Names to finalise plan
- Council adopted a Kiama Coastal Walking Track Plan of management

## CHAPTER 3: WATER

### 3.1 STATE

The Kiama Municipality has three major catchments within its boundaries, the Minnamurra River, the Crooked River and Werri Lagoon. There are also a number of smaller creeks and streams which drain into larger catchments including the Shoalhaven River, Kangaroo River and Macquarie Rivulet, or directly into the ocean. For a comprehensive map of catchments within the Kiama Municipality refer to 2009 State of the Environment Report.

#### 3.1.1 WATER MONITORING

##### Landfill water monitoring

Council undertakes quarterly groundwater and surface water monitoring in and around its waste disposal depots at Minnamurra and Gerroa, both of which are currently being remediated.

This monitoring is being conducted in accordance with the NSW Department of Environment, Climate Change and Water license requirements. The monitoring is to identify any impacts that the facilities may have on the surrounding waterways so that action can be taken if necessary.

##### River and estuary water monitoring

Other water quality monitoring is undertaken throughout the municipality by Streamwatch volunteers. There are up to 6 active Streamwatch networks including Jamberoo Valley, Kendalls Beach, Lands Edge, Gerringong-Gerroa, Werri Lagoon and Kiama High School. Testing was undertaken, verified and uploaded to the Streamwatch website for 10 sites during 2009/10. The sample results as they apply to the ANZECC guidelines for the year can be found in Appendix 1, for more information please refer to the Streamwatch website at [www.streamwatch.org.au](http://www.streamwatch.org.au).

##### Beachwatch water monitoring

Sydney Water Corporation and the DECCW undertake monitoring of beach water quality at 4 beaches across the Kiama Municipality including Boyd's/Jones Beach, Bombo Beach, Surf Beach and Werri Beach. This year the recreational water quality is no longer reported as a percentage compliance based on microbial data, but as Beach Suitability Grades. The Beach Suitability Grades can either be Very Good, Good, Fair, Poor or Very Poor. Definitions for these classifications can be found at [www.environment.nsw.gov.au/beach/beachclassification.htm](http://www.environment.nsw.gov.au/beach/beachclassification.htm). The Beach Suitability Grades for Kiama Council swimming sites are shown in Table 3.1.

Swimming Sites	Beach Suitability Grades
Boyd's/Jones Beach	Very Good
Bombo Beach	Good
Surf Beach	Good
Werri Beach	Very Good

Table 3.1: Beach Suitability Grades for Kiama Council swimming sites

All Kiama ocean beaches were classified as Very Good or Good. Beaches classified as Very Good means they generally have excellent microbial water quality and very few potential sources of faecal pollution. Water is considered suitable for swimming almost all of the time. Beaches classified as Good means they generally have good water quality and are considered safe for swimming most of the time. These sites have some potential pollution sources which are generally triggered after rainfall.

#### 3.1.2 WATER CONSUMPTION

The Kiama Municipality is part of the Sydney Water supply network and is therefore subject to the same water restrictions. Since the introduction of Level 1 mandatory water restrictions in October 2003 and subsequent progression to Level 3 in 2005, there have since been easing of the restrictions but a number of water wise rules have applied from the 21<sup>st</sup> June 2009. For a list of the water wise rules and current restrictions visit: [www.sydneypwater.com.au](http://www.sydneypwater.com.au).

Table 3.2 show the dam storage levels for the Sydney Water Catchment, showing a 3.8% decrease on the previous reporting period.

Date	Dam Water Storage Levels
30 June 2007	53.1%
30 June 2008	66.6%
30 June 2009	61.4%
30 June 2010	57.6%

Table 3.2 Dam Storage Levels (Source: Sydney Catchment Authority 2010)

##### Community Water consumption

For the seventh year in a row, 2009/10 the Kiama Municipality topped the list of most water wise local government areas in the Sydney Water supply network. The average consumption per household in 2009/10 was 159,000 litres, which is 2,000 litres more than 2008/09. The increase of 2,000 litres per household is potentially due to easing of water restrictions. Water consumption by property type for the Kiama Municipality is shown in Table 3.3.

Property Type	Consumption 07/08 (kL)	Consumption 08/09 (kL)	Consumption 09/10 (kL)
Commercial	271,294	284,678	266,411
Houses	1,015,363	1,048,777	1,060,292
Units/flats	124,417	136,779	128,552
Industrial	6,766	6,791	5,956
Other	125,497	113,571	122,717
<b>Total</b>	<b>1,543,337</b>	<b>1,590,596</b>	<b>1,583,928</b>

Table 3.3: Water consumption by property type for Kiama LGA

### Council water consumption

Water consumption by Council's operation has been steadily decreasing since 2002/03 due to mandatory water restrictions and pro-active management to implement initiatives recommended in Water Savings Action Plans (WSAP) for the top water consuming facilities. Kiama Council's total water consumption for the 2009/10 year was 99,794 kilolitres, which is a 2.4% increase from the 2008/09 year.

The top 11 water consuming facilities consumption is shown in Table 9.2 compared with the 2002/03 baseline year for the WSAP.

A major initiative for the 2009/10 reporting period was the installation of automated data loggers on the 5 Council holiday parks and the Kiama Leisure Centre. These data loggers monitor water consumption on a 24 hour, 365 days a year basis, and give facilities managers the information required to detect base line flows (leaks) by automatically sending emails to managers when base flow limits are exceeded.

## 3.2 PRESSURES

Water consumption and demand by industrial, commercial, agricultural and residential areas puts pressure on water supply and water supply infrastructure. The demand for potable water can also create pressures on natural systems through the need for water supply catchments, as well as issues in disposing of effluent laden water from residential, rural, industrial and commercial areas.

Water quality can be affected by various natural and anthropogenic factors including drought, stormwater runoff from roads, residential, industrial, commercial and agricultural activities as well as sewerage overflows/bypasses and on site sewerage systems.

### 3.2.1 SEWERAGE TREATMENT PLANTS

Table 3.4 shows the discharge and equivalent estimated populations for the two sewerage treatment plants located within the Kiama Municipality.

Sewerage overflows or bypasses of one or more process units in the sewerage system can occur during wet weather, caused by flows that exceed the capacity of the system. Overflows can result in untreated or partially treated effluent being discharged into waterways or the ocean.

Treatment Plant	Treatment Level	Discharge (ML/day)	Equiv. Population
<b>Gerringong Gerroa</b>	Tertiary (additional Phosphorus removal & ozonation, microfiltration, activated carbon & disinfection)	0.99	11,000
<b>Bombo</b>	Secondary and denitrification & disinfection	3.6	13,300

Table 3.4: Sewerage Treatment Plants in Kiama Municipality

Dry weather overflows can also occur, usually due to blockages and/or damage to the sewerage infrastructure by tree roots, debris, pump failure at a pumping station or power failure at a treatment plant (Sydney Water Corporation)

Sydney Water Corporation is required to notify Council when any dry or wet weather overflows or bypasses occur, leading to the discharge of untreated or partially treated effluent. Table 3.5 shows the wet and dry weather overflows at Bombo STP compared to the last 3 reporting periods. There have been no dry or wet weather overflows events at the Gerringong-Gerroa sewerage scheme since it commenced in 2002 (J Kidd, pers comm, 2010).

Year	2006/07	2007/08	2008/09	2009/10
<b>Wet Weather Overflow</b>	9	4	6	7
<b>Dry Weather Overflow</b>	5	0	0	11
<b>Total</b>	14	4	6	18

Table 3.5: Sewerage Overflows/Bypasses at Bombo STP (Barr, G 2010)

### 3.2.2 ON-SITE SEWERAGE MANAGEMENT SYSTEMS (OSSMS)

There is the potential for effluent to enter the waterways from on site sewerage management systems (OSSMS) that are still operating within the Municipality. These systems are used to treat and dispose of 'black water' and/or grey water in areas where a sewage service is not available.



There are approximately 870 systems currently operating in the Kiama Municipality. When systems are not maintained or operated correctly this can result in untreated effluent entering drains and waterways. Council has been implementing a program of OSSMS inspections (see Response section of this chapter) to determine if each system is operating correctly and identify any possible risks to human health and the environment.

### 3.3 RESPONSE

#### 3.3.1 WATER POLLUTION ENFORCEMENT

Kiama Council Environmental Health Officers and Rangers Services Officers investigate complaints received by Council relating to water pollution and the Department of Environment, Climate Change and Water (DECCW), investigates complaints regarding water pollution from scheduled premises and activities. The number of complaints received is shown in Table 3.6. The number of complaints relating to water pollution recorded during the last reporting period was 21, which is 4 less than the 2008/09 year.

Type of complaint	2008/2009	2009/2010
Water pollution complaint to DECCW	5	5
Spill complaint to DECCW	-	-
Water pollution complaint to Council	20	16
<b>Total</b>	<b>25</b>	<b>21</b>

Table 3.6: Water pollution complaints to Council and DECCW (Roy, L, DECCW, 2010)

Clean-up notices, prevention notices or penalty infringement notices for water pollution offences may be issued by these officers under the *Protection of the Environment Operations Act 1997*. There were 2 Penalty Infringement Notices and 1 Warning Notice issued during the 2009/10 reporting period for polluting waters.

#### 3.3.2 STORMWATER MANAGEMENT PLAN

Kiama Municipal Council reviewed its *Stormwater Management Plan* (SMP) in 2003 in accordance with the requirements of Section 12 of the *Protection of the Environment Administration Act 1991*.

There are a range of strategies contained within the reviewed SMP, within seven sections (for the full list of actions, please refer to SMP – Kiama Municipal Council, 2003):

- Mitigation of future stormwater impacts;
- Mitigation of stormwater impacts from current developments: Minnamurra/Kiama Downs Stormwater Catchment;

- Mitigation of stormwater impacts from current developments: Kiama Stormwater Catchment;
- Mitigation of stormwater impacts from current developments: Gerringong-Werri Stormwater Catchment;
- Mitigation of stormwater impacts from current developments: Jamberoo Stormwater Catchment;
- Mitigation of stormwater impacts from current developments: Gerroa stormwater catchment; and
- Mitigation of stormwater impacts from current developments: all catchments.

For a full list of strategies implemented, please refer to previous SoE Reports.

Mechanical street sweeping is undertaken in all urban areas of the Kiama Municipality on a quarterly basis, with the commercial town centres of Kiama being swept daily and the Gerringong and Jamberoo townships swept twice per week. Approximately 412 tonnes of litter was collected by street sweeping services in the reporting period, which is an increase of 132 tonnes on the previous reporting period.

#### 3.3.3 ON-SITE SEWERAGE MANAGEMENT SYSTEMS INSPECTIONS

The management of domestic waste water and sewage is important for the health of the community and for the natural environment. All on-site sewage management systems that operate in the Municipality have been risk classified based on their proximity to water ways, soil types and flood risk.

Council inspects each risk category accordingly to ensure they are operating effectively and have no adverse impacts on human health or the environment.

During the 2009/10 reporting period, 273 On Site Sewage Management Systems were inspected, with 13 major and 18 minor defects identified, with all cases rectified.

#### 3.3.4 SYDNEY WATER CORPORATION PROGRAMS

Sydney Water has developed a number of programs to encourage the uptake of water efficient products and fittings to decrease the consumption in the residential sector. Table 3.7 show the participation rates for Sydney Water programs for the 2009/10 financial year, and compares this with the 2008/09 reporting period. There was an decrease of 93 participants from the previous reporting period. The total number of participants from the Kiama Municipality since the introduction of these Sydney Water programs in 1999/2000 is 5,777.



Program	2008/09	2009/10
DIY Kits	7	
Love your Garden	73	8
Rain Water Tanks	74	51
Toilet replacement	55	74
Washing Machine rebate	183	142
WaterFix	25	35
<b>Total</b>	<b>417</b>	<b>310</b>

Table 3.7: Participation rates for Sydney Water programs



## CHAPTER 4: NOISE

### 4.1 STATE

Kiama Council has a regulatory role in preventing unwanted and offensive noise through the development approval process and by enforcing development consent conditions and noise pollution regulations under the *Protection of the Environment Operations Act 1997*.

The most common environmental issue that Council is contacted about is noise. The main noise pollution issue that Council is contacted about is animal noise. The breakdown of noise complaints to Council and the DECCW is provided in Table 4.1. There were a total of 77 noise complaints to Council in the 2009/10 reporting period which is an increase of 13 from the 2008/09 year.

Type of Complaint	2008/09	2009/10
Noise complaint to DECCW	1	8
Industrial noise complaints to Council	0	0
Commercial noise complaints to Council	0	5
Residential noise complaints to Council	14	12
Construction noise complaints to Council	4	1
Council plant vehicle noise complaints to Council	1	3
Animal noise complaints to Council	45	56
<b>Total noise complaints</b>	<b>65</b>	<b>84</b>

Table 4.1 Noise complaints to Council and the DECCW (Roy, L, DECCW, 2010)

### 4.2 PRESSURE

The pressures on the environment relating to noise generally centre around the impact of humans on each other in an urban environment with regard to residential and industrial/commercial and traffic/transport noise.

Kiama Municipality does not have a large area devoted to industrial activities, however where residential areas adjoin industrial areas there is a potential for impacts from the operations.

Business and commercial areas constitute only a small portion of the Kiama Municipality, but can be a source of noise mainly from equipment such as air conditioners and deliveries during early hours.

Figure 4.1 shows that residential noise complaints are the most common noise complaint in the Kiama Municipality. These complaints include barking dogs, music, garbage and

recycling services, building construction and lawn mowing/gardening activities.

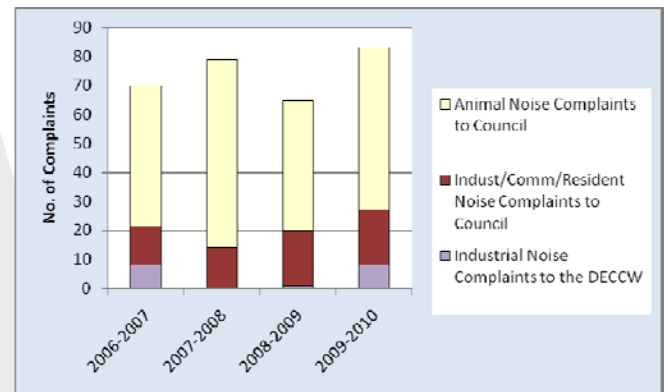


Figure 4.1 Noise complaints within the Kiama Municipality 2006/07-2009/10

### 4.3 RESPONSE

#### 4.3.1 DEVELOPMENT CONTROL

Development Control conditions can be placed on development approvals for industrial and commercial activities to ensure noise pollution is minimized or prevented. For industrial premises the *NSW Industrial Noise Policy* applies, providing guidelines for large industrial developments, including guidelines on measuring and assessing noise from small commercial and industrial premises regulated by Councils. *The NSW Environmental Criteria for Road Traffic Noise* includes criteria for assessing road traffic noise from developments.

#### 4.3.2 ENFORCEMENT

Councils Environmental Health Officers and Rangers investigate complaints received by Council relating to noise pollution and the Department of Environment, Climate Change and Water investigates complaints regarding noise pollution from scheduled premises under the *Protection of the Environment Operations Act (1997)* and the *Protection of the Environment Operations (Noise Control) Regulation 2007*.

Within residential areas, restrictions on some domestic noise sources exist, such as power tools, swimming pool pumps, musical instruments, amplified sound equipment, domestic air conditioners, heat pump hot water systems and vehicles.

These noise sources have restricted hours of operation and even outside the restricted hours, additional restrictions can be placed on their use if they cause offensive noise. Information on these restrictions can be found at

Nuisance Dog Orders can also be issued under the *Companion Animals Act 1998* when the noise is the result of a dog, requiring the owner to prevent the behaviour causing the noise problem. There was 1 Nuisance Dog Order issued for the 2009/10 reporting period, which is one more than the 2008/09 reporting period.





## CHAPTER 5: BIODIVERSITY

### 5.1 STATE

Biodiversity as a definition refers to the variety of all life forms – the different plants, animals and micro organisms, the genes they contain and the ecosystems of which they form a part.

#### 5.1.1 ECOLOGICAL COMMUNITIES

According to a vegetation study undertaken by Kevin Mills and Associates during 2003/04, there are 12 Endangered Ecological Communities (EECs) within the Kiama Municipality which are listed under Schedule 1, part 3 of the *NSW Threatened Species Conservation Act 1995*. There are maps of the endangered ecological communities available in the 2009 State of the Environment Report.

#### 5.1.2 SPECIES DIVERSITY – FLORA

According to the Atlas of NSW Wildlife (DECCW 2010), there are 675 native flora species which have been recorded in the Kiama Local Government Area. The Atlas of NSW Wildlife indicates that eleven threatened species listed in schedule 1 and 2 of the *NSW Threatened Species Conservation Act 1995 (TSC Act 1995)*, have been recorded in the Kiama LGA. This is one more than the previous reporting period. The species added to the list is Deans Boronia, (*Boronia deanei*).

For a list of the threatened flora species that have been identified in the Kiama LGA, and their listing in the *TSC Act 1995* and the *Environmental Protection and Biodiversity Conservation Act 1999 (EPBC Act 1999)* please refer to the 2009 State of the Environment Report.

#### 5.1.3 SPECIES DIVERSITY – FAUNA

According to the report 'The fauna of Kiama Municipality, South Coast NSW' (Kevin Mills & Associates, 2006), which compiled a report from a variety of sources, there are 496 species occurring in the Municipality. The list included mammals, birds, frogs, reptiles, freshwater and estuarine fish species.

The Atlas of NSW Wildlife indicates that 46 fauna species actually recorded in the Kiama Municipality are listed as threatened species in Schedule 1 and 2 of the *NSW TSC Act 1995*. This is 6 more than the previous reporting period. Some of these species are also listed as threatened under the Commonwealth *EPBC Act 1995*. For a full list of threatened species including the Mills and Associates listings please refer to the State of the Environment Report 2009.

The Kevin Mills and Associates reports (2006), ' *The Natural Vegetation of the Municipality of Kiama NSW*' and ' *The Fauna of the Municipality of Kiama, South Coast NSW Final Report*', are both available on the Kiama Municipal Council website.

### 5.2 PRESSURES

The main pressures on biodiversity in the Kiama Municipality are habitat loss and fragmentation due to vegetation clearing, inappropriate fire regimes, predation by feral and domestic animals, overgrazing of habitat areas by stock, stream bank disturbance, pollution and invasion of weed species.

The *NSW TSC Act 1995* defines a threatening process as 'a process that threatened, or may have the capability to threaten the survival or evolutionary development of species, populations or ecological communities'. The key threatening processes are listed in Schedule 3 of the legislation. There were no new listings of key threatening processes in the *NSW TSC Act 1995* during the reporting period. For a full list of key threatening processes refer to the State of the Environment Report 2009.

#### 5.2.1 WEEDS

Under the *NSW Noxious Weeds Act 1993*, weeds can be declared noxious. Many plants can be classed as weeds, however only those plants that have a detrimental effect or cause serious economic loss to agriculture or the environment, and providing there is a reasonable and enforceable means of control are considered as candidates for declaration as noxious weeds. There is a legal requirement on landowners to control these weeds once declared. For a full list of weeds declared noxious in the Illawarra District Noxious Weeds Authority (IDNWA) control area please refer to the State of the Environment Report 2009, or the IDNWA website.

#### 5.2.2 BUSHFIRES

Bushfire is a significant threat to biodiversity. According to the Kiama/Shellharbour District Rural Fire Service there were 21 vegetation fires in the Kiama and Shellharbour areas within the reporting period. This compares with 15 vegetation fires for the 2008/09 reporting period.

#### 5.2.3 TREE LOPPING OR REMOVAL

Removal of trees, or major portions of trees can have major impacts on biodiversity. Tree lopping and removal is prohibited under Council's Tree Preservation Order. This order states that no tree, specified by the Order, shall be

ring barked, cut down, topped or lopped, injured or removed without prior Council approval and is dependent on its size and/or land zone under the *Local Environment Plan 1996*. However Council will approve for a tree to be lopped or removed if there is a concern for safety.

During the reporting period there were 330 permits issued to remove or prune trees. This was 15 less than last years' 345 permits.

## 5.3 RESPONSES

### 5.3.1 WEEDS

During the reporting period the Illawarra Noxious Weeds Authority representing the local government area of Kiama, has continued to develop and implement an active noxious weed control program throughout the Kiama Municipal Council area including:

- Local weed control programs for private landholders and government agencies with 222 properties inspections for the 2009/10 reporting period. All nurseries and aquaria outlets were also inspected;
- All infestations of Class 2 and Class 3 noxious weeds on private lands were inspected and control treatments implemented by 30 June 2010. The only exception is Gorse which is inspected every second year;
- All Class 4 weeds on private land were strategically targeted for control within the Kiama LGA according to local action plan guidelines;
- Three section 18A and One Section 18 Notices were issued;
- All Council lands with infestations of \*Class 3 weeds were inspected and treated at least once and up to twice by 30 June 2010;
- All Bitou bush on Council controlled lands was inspected and treated by 30 October 2009. 8ha was aerially sprayed at Gerringong Boat Harbour;
- All African love grass and Serrated tussock infestation were treated by 30 November 2009;
- Three alert weeds – Glory lily, Spiny burr and Sea Spurge were identified and controlled at Gerringong;
- The two major water catchments, namely Crooked River and Minnamurra River were inspected along

their length to ensure there were no new aquatic weed incursions

- 53% of rural roads and 100% of public reserves were inspected and/or treated for one or more noxious weeds by 30 June 2010. 7 non-rural roads were also treated for noxious weed infestations;
- Improved cooperation between stakeholders is being addressed through representation on 4 regional committees, 1 national committee and a subcommittee of the NSW Noxious weeds advisory committee (NWAC);and
- Kiama Council funding of \$29,094 was supported by NSW State Government funding (Industry and Investment) of \$26,000 for noxious weed control in the Kiama LGA.

\*Class 3 weeds include Giant Parramatta grass, Gorse, Groundsel bush, St Johns wort, Mysore thorn and Water hyacinth.

For a full list of noxious weeds found within the Kiama LGA refer to the 2009 State of the Environment Report.

### 5.3.2 COUNCIL REHABILITATION PROJECTS

Council has continued to implement rehabilitation and revegetation projects within its parks, reserves and beaches within the Municipality. During the reporting period the following projects were undertaken:

- Council received a \$39,000 'Caring for our Coast' grant for the Seven Mile Beach reserve
- Council received \$11,593 in grant funding for vine weed eradication and revegetation at Rocklow Creek and Minnamurra River
- The Illawarra Biodiversity and Local Food Strategy for Climate Change project provided grant money for on ground restoration works at priority biodiversity sites within the three local government areas. Kiama Council used its \$25,000 funding for restoration works and protection of threatened species *Zieria granulata* at Jerrara Dam Arboretum. For more information on the grant please see Section 9.2.4.
- Ongoing maintenance and revegetation of Spring Creek Wetlands, Jerrara Dam, Bonaira Native Garden, Stead Reserve and Russel East Park
- Stage 1 of the bank stabilisation works on the Minnamurra River along 300 metres of Riverside

Drive were undertaken, to be completed in early July 2010



*Bank stabilisation works on Riverside Drive Minnamurra*

- Council completed the Coastal Walking Track during the reporting period, fencing off 6km of coastline and providing safe access for the public
- National Tree Day Activities with Kiama High School took place on 24<sup>th</sup> August 2009. At Council sites at Trevethan Reserve and Gerroa Waste Depot there were over 1,000 trees, shrubs and grasses planted. Other sites within the Municipality included Seven Mile Beach, Werri beach Ooaree Creek and Bombo Headland supported by Conservation Volunteers Australia, local landholders, local land care and environment groups, lions club, Department of Lands and National Parks and Wildlife Service



*National Tree Day Activities with Kiama High School students, August 2009*

### 5.3.3 COMMUNITY/LANDCARE REHABILITATION PROJECTS

Landcare plays an important role in rehabilitation and revegetation activities and capacity building and awareness of natural resource management issues in the community within not only the Kiama LGA, but across all of Australia.

The Kiama Municipality has 12 active Landcare groups including:

*Gainsborough Chase Minnamurra Wetland Landcare*

*Bombo Headland Landcare*

*Little Blowhole Landcare*

*Werri Beach Dunecare*

*Gerrigong-Gerroa Landcare Liaison Network*

*Upper Minnamurra Rivercare*

*Wallaces Creek Landcare*

*Jamberoo Mountain Landcare*

*Cedar Ridge Landcare*

*Seven Mile Beach Landcare*

*Kaleula Headland Landcare*

*Foxground Landcare*

Landcare Illawarra have supported a number of projects in the Kiama LGA for the 2009/10 year from their 'Implementation of priority Landcare works' project funded through the Southern Rivers CMA, including:

- In stream works and erosion control/bank stability at Foxground
- In stream works, erosion control/bank stability, weed control, stock exclusion and revegetation works at Jamberoo
- 4,800 native rainforest and woodland species planted across the Illawarra, approx. 15 sites in the Kiama LGA, through the Illawarra Woodland and Rainforest project

(Rowlatt, M, CVA Australia 2010)



## CHAPTER 6: WASTE

### 6.1 STATE

In the past Kiama Municipal Council has operated two landfill sites within the local government area, at Minnamurra and Gerroa. Both of these landfill sites are now closed and in the process of remediation and rehabilitation. There was also a Materials Recovery Facility at the Minnamurra Waste Depot which was closed in April 2008, and now all recycling is transported to facilities in Sydney Metropolitan Area for sorting and recycling.

A regional alternative waste treatment strategy and business plans are in the process of being developed and will set out the priorities for collection and treatment alternatives to effect further reductions in waste to landfill from our residential waste stream.

Council currently collects domestic waste on a weekly basis and recycling and green waste on alternate weeks. Council also provides 2 clean up days per year and a number of targeted recycling programs to reduce waste to landfill.

Table 6.1 shows the municipal domestic waste to landfill, recycling and green waste diversion for the last 2 financial years. The NSW Waste Avoidance and Resource Recovery Strategy 2003 target for diversion from the municipal domestic waste stream is 66% by 2014. Kiama Municipal Council is well positioned to meet this target with its current diversion percentage of 55.78%.

	Tonnes 08/09	% 08/09	Tonnes 09/10	% 09/10
<b>*Waste to landfill total</b>	3702.3	44.16%	3896.03	44.22%
<b>**Recycling total</b>	4681.42	55.84%	4915.26	55.78%
<b>TOTAL</b>	<b>8383.72</b>	<b>100%</b>	<b>8811.29</b>	<b>100%</b>

Table 6.1 Domestic Waste Stream Percentages to landfill

During the reporting period there were 102 new properties (1.22% increase) added to the domestic collection services, 84 urban and 18 rural.

### 6.2 PRESSURES

#### 6.2.1 PRESSURES FROM WASTE GENERATION

Both population growth and behaviour are key contributors to volumes and types of waste entering landfill.

Population growth in Kiama LGA is fairly stable however surrounding areas are growing at a more rapid rate, putting pressure on regional landfill sites and processing facilities.

Emerging issue in waste include e-waste, and the proliferation of this type of waste, removing organics from the domestic waste stream, disposal of fluorescent lamps and disposal of batteries.

There is a planned national e-waste recycling scheme proposed to be implemented in 2011, however regional areas are likely to get the scheme later in 2012-13.

The estimated total waste (green waste, putrescibles and recycling) generated during the reporting period for domestic, rural, litter clean up, commercial and streets, parks and reserves was 11,808.09 tonnes. This is a 5.97% increase from the 2008/2009 reporting period.

During the 2009/2010 reporting period the total waste disposed of at the Shellharbour City Council facility was 5,244.87 tonnes, made up of the following:

*Urban/Rural garbage collection service	3723.03
Streets/Parks/Reserves/commercial waste	1140.23
Litter/Waste footpaths/parks/reserves	108.61
*Urban Kerbside Clean Up	173.00

During the reporting period 6,663.22 tonnes of materials were recycled at the Minnamurra Waste and Recycling Facility, consisting of the following:

Commercial recycling	379.18
Drop off centre recycling	39.37
**Kerbside recycling	2278.70
**Rural recycling	137.53
Steel	98.53
Green Waste drop off	818.42
**Green Waste kerbside collection	2401.84
**Kerbside Cleanup steel	97.19
Street Sweeper waste	412.46

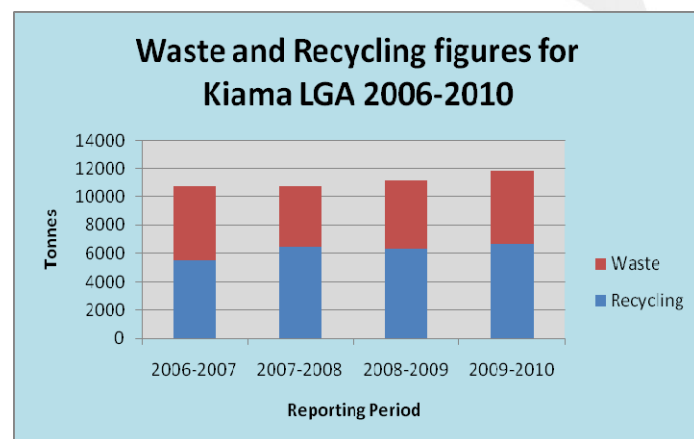


Figure 6.1 Waste and Recycling figures for Kiama LGA 2006/07 – 2009/10

### 6.2.2 ILLEGAL WASTE DISPOSAL

Illegal dumping of waste such as building and demolition waste, green waste, household items, household rubbish, abandoned cars and general littering have an impact on both visual amenity and the natural environment.

During the reporting period, Council investigated 52 littering and illegal dumping complaints, which is an increase of 16 from the previous reporting period. 6 penalty infringement notices under the *POEO Act 1997* were issued, 3 for littering and 3 for littering from a vehicle.

## 6.3 RESPONSES

### 6.3.1 DEVELOPMENT CONTROL

*Development Control Plan 25 (DCP) – Planning For Less Waste* focuses on the building and demolition industries and aims to reduce the volume of waste to landfill from these sectors.

Development applications must include a Waste Minimisation and Management Plan, and a Waste Compliance Certificate is required to be submitted as a condition of consent outlining quantities of materials re-used, recycled or disposed of.

During the reporting period, statistics were recorded regarding building and construction waste from the 109 finalised development applications that were required to submit Waste Minimisation and Management Plans. The total estimated tonnage of waste disposed of, recycled or reused on or off the construction sites was 5,271.862 tonnes. Of this 4,560.03 (86.5%) was recycled or re-used on site, and 711.832 (13.5%) was disposed of to landfill. This represents an increase in 38.3% of waste recycled or re-used on site compared with the 2008/09 reporting period. These figures only cover developments over \$5,000 and do not include exempt development.

### 6.3.2 WASTE INITIATIVES

- Participated in Project Aware on Sunday, 13th September 2009. A total of 0.28 tonnes of waste was collected by the 25 volunteer divers from Windang Dive and Spearfishing at Kiama Harbour.
- School Clean Up Australia Campaign – 1,400 students participated.
- Clean Up Australia Day – 20 sites cleaned up, 250 volunteers, 1.47 tonnes of waste and 290kgs of recyclables collected.
- Review commenced of the current household kerbside clean up collections to determine future services.

- 20 February 2010 Second hand Saturday conducted with 79 stallholders and approximately 1,000 attendees.
- Participated in regional mattress recycling program.
- Funding (\$30,000) received from the DECCW to conduct another Regional “Littering from Cars” program in October through to December 2009. Enlisted the assistance of Kiama Rangers to implement a Targeted Surveillance Program outside of Ranger’s normal day to day inspections. A total of 3 infringements were issued and 8 cautions with approx. 30 people being confronted.
- Conducted a Young Artists Recycled Art Competition as part of World Environment Day activities. All schools within the municipality participated receiving over 250 entries. Presentation of prizes to winners was conducted as part of Kiama Future Care’s “Sustainability Expo” held 5th June, 2010.



*Recycled Art on display at Gerringong Town Hall*

- Two Advanced Composting Workshops were held on 28 March 2010 with 20 participants in attendance over the two workshops. Another Advanced Composting and Bokashi Workshop was held in October 2009 with 26 residents attending. This workshop was part of the Sustainable Illawarra Program.
- Continued to promote the NSW Government’s Fridge BuyBack Program. As at June 2010, 119 fridges had been collected from the Kiama municipality. This is the equivalent to abating 952 tonnes of CO<sub>2</sub> equivalents

- Recognised and promoted Asbestos Week held first week of June.
- In support of the Salvation Army's Winter Clothing Appeal, distributed clothing bags to all council staff within the Council Administration building. A total of 31 bags of clothing were donated.
- As part of National Recycling Week, an Op Shop Bus Tour was conducted on 10 November 2009 with 50 participants. The tour was part of the Sustainable Illawarra program.
- Through the Sustainable Kiama Communities project, a Trial Public Place Recycling Program commenced during the peak holiday period, December 2009 – January 2010. Infrastructure was erected including, double bin stands, new 240L bins fitted out with colour coded turbo bin lids and appropriate signage/stickers. Commenced partnership program with food outlets within the Kiama CBD who sell takeaway food to assist with the promoting of the program. Face to face contact with each outlet resulted in a 100% uptake. Program involvement includes wearing a "We Love Recycling in Kiama" badge, displaying a poster in store and conveying the recycling message to patrons. Bins were monitored on a daily basis and data collected weekly. A total of 21.12 tonnes of recyclable materials was recovered with less than 10% contamination.
- Weekly residential recycling program was implemented during the peak holiday period from December 2009 to January 2010. An additional three services were undertaken during this period. This resulted in an additional 42.9 tonnes of recyclables collected during January 2010 compared to January 2009 tonnages.
- Council continues to promote and participate in several recycling programs ie. Printer cartridge recycling, office paper recycling, mobile phone recycling, and at source recycling bins for each desk, recycling bins in staff kitchens. For the reporting period there was 99.83kg of printer cartridges recycled.
- Lifeline Big Book Fair. Supported this program by setting up collection boxes in various Council facilities and grocery stores within the municipality. A total of 2766 books collected over the 4 week collection period.
- Investigation of "illegal dumping" in street litter bins was conducted. In association with Ranger staff, Council will be implementing a "Street Litter Bin" education program aimed at commercial premises for the 2010/11 year.
- The lamp recycling program for fluorescent tubes and CFLs has been operating at the Minnamurra Waste and Recycling Depot since March 2009. For the 2009/10 reporting period there were 80kg of fluorescent tubes collected and 65kg of mixed CFLs collected. This equates to diverting approximately 8,650 mg of mercury from landfill.
- Kiama Council supported the drum muster program again in 2009/10. This national program allows for the collection and recycling of empty, cleaned non-returnable crop production and on-farm animal health containers. Kiama Council signed up to this program back in 2007 making it the 704<sup>th</sup> collection site. During the 2009/10 year, a total of 956 drums were collected, which is 346 more than the previous reporting period.
- Focusing on tourists, a banner was erected in Terralong Street displaying a welcome message and an environmental message as part of the Public Place Recycling program: *"Welcome to Kiama, From the Mountains to the Sea, please keep our town litter free"*



*Public place recycling trial 2010*



## CHAPTER 7: AIR

### 7.1 STATE

There are a number of sources of air pollution that have an impact on local and regional air quality such as motor vehicles, fire, solid fuel heaters, residential, industrial and commercial direct and energy consumption related greenhouse gas emissions, agricultural activities and natural phenomena such as dust storms.

The DECCW monitors the air quality throughout the Greater Metropolitan Region from Newcastle to Albion Park. There are currently no monitoring stations within the Kiama Municipality. There are three monitoring stations within the Illawarra Region at Albion Park, Kembla Grange and Wollongong.

The Illawarra Regional Air Quality Index (RAQI) combines data from the three regional air quality stations and uses the highest reading for the calculations. An Air Quality Index (AQI) of 100 corresponds to the relevant National Environment Protection Measure (NEPM) standard criteria for pollutants or the relevant NSW standard for visibility.

The RAQI count exceeded 100 on thirteen occasions in the Illawarra region during the 2009/10 reporting period. On one occasion the AQI was 2719, which was on 23<sup>rd</sup> September 2009, which corresponded with a massive dust storm which extended along the eastern coast of Australia. Table 7.1 shows a comparison of the number of days in the year which fitted within each NEPM category.

NEPM Category	No. of days 2008/09	No. of days 2009/10
Very Good	29	50
Good	277	263
Fair	45	39
Poor	8	9
Very Poor	2	1
Hazardous	4	3

Table 7.1: Air pollution indicator RAQI readings for Illawarra region 2008/09-2009/10 (DECCW 2010)

The number of complaints relating to air pollution in the Kiama LGA is shown in Table 7.2. The total number of complaints has decreased by 13 compared with the last reporting period.

Type of complaint	2008/09	2009/10
Burning complaint to Council	5	5
Commercial complaint to Council	5	0
Dust complaint to Council		0
Odour complaint to Council	20	11
Odour complaint to DECCW		0
Industrial air complaint to DECCW	1	0
Other air complaint to DECCW	1	3
<b>TOTAL AIR COMPLAINTS</b>	<b>32</b>	<b>19</b>

Table 7.2: Air pollution indicator, Complaints relating to air pollution to Council and DECCW (Roy, L, DECCW, 2010)

### 7.2 PRESSURES

The air quality in the Kiama Municipality is under pressure from a number of sources both local and regional. These pressures include motor vehicles, solid fuel heaters, burning of household refuse, vegetation clearing, waste disposal, dust from construction sites, direct emissions of pollutants and odours from industrial and rural activities and bush fires.

#### Vehicle Registration in the Kiama LGA

The latest figures on vehicle registrations in the Kiama Municipality show that in 2009/10 there were 18,660 vehicle registrations, which is an increase of 466 (2.6%) vehicles since 2008/09 (RTA 2010).

According to the Roads and Traffic Authority Local Government Area Vehicle Registrations report (Roads and Traffic Authority, 2010), as of 30<sup>th</sup> June 2010, 81.4% of fuelled vehicles in the Kiama Municipality were fuelled by unleaded petrol, 2.6% by leaded petrol, 12.6% by diesel, 2.9% by LPG or LPG/petrol and 0.5% by other fuel types (or unknown). The fuel consuming registered vehicles made up 81.64% of the total registered vehicles, the remaining 18.36% of registered vehicles was made up of trailers and non-fuel consuming vehicles.

#### Fire incidents in the Kiama LGA

Bushfires, structure fires and hazard reduction burns can also place pressure on local and regional air quality. The numbers of fires within the Kiama LGA responded to by the NSW Fire Brigade for the 2009/10 reporting period are shown in Table 7.3. This is an increase of 15 fires on the 2008/09 reporting period.

Type of Incident Subdivision Name	2009/10 Financial Year
<b>Fires and other explosions</b>	0
<b>Building fires</b>	6
<b>Fires in buildings confined to non-combustible containers</b>	7
<b>Special structure fires</b>	2
<b>Outside storage fires</b>	0
<b>Mobile property type fires</b>	3
<b>Vegetation and other outside fires</b>	20
<b>Small vegetation fires</b>	0
<b>Outside rubbish fires</b>	13
<b>Explosions not as a result of fire</b>	0
<b>TOTAL</b>	<b>51</b>

Table 7.3: Fires in the Kiama and Shellharbour LGA during 2009/10 (Danaskos, H, 2010)

## 7.3 RESPONSES

### 7.3.1 COUNCIL EMISSIONS REDUCTION ACTIONS

#### Fleet

Draft Green Vehicle Guidelines are in the process of being developed for implementation during the 2010/11 financial year.

#### Cities for Climate Protection (CCP™)

The CCP™ program assisted Councils to deal with greenhouse gas emissions issues within their locality and as a result of the program an action plan was developed which sets out ways for Council to reduce greenhouse gas emissions.

There were no activities completed from the CCP Action plan during the reporting period, however various actions have been investigated and will be proposed for funding from Council budget, reserves and/or Waste and Sustainability Improvement Payment program in the future.

### 7.3.2 CYCLEWAYS

Cycleways promote physical activity as well as improved air quality through providing alternative transport options for residents and visitors. Stage 1 of the Jamberoo Cycleway was deferred to the 2010/11 budget to be completed in conjunction with stages 2A and 2B. The list of priority cycleway sections can be seen in the 2009 State of the Environment Report.

### 7.3.3 NO BURN POLICY

Council adopted a no burn policy within the Kiama Municipality under Part 2, Schedule 8 of the *Protection of the Environment Operations* (Clean air) regulation 2002. Through delegated authority from the DECCW Kiama Council is required to regulate outdoor burning in the Municipality.

During the reporting period there were 88 permits issued to create smoke pollution. This compares to 133 from the 2008/09 reporting period.

## CHAPTER 8: HERITAGE

### 8.1 STATE

#### 8.1.1 ABORIGINAL HERITAGE

In New South Wales, Aboriginal places are administered under the *National Parks and Wildlife Act 1974*, the *Heritage Act 1977* and the *Environmental Planning and Assessment Act 1979*.

The DECCW maintains a register of identified Aboriginal heritage sites throughout the state, known as the Aboriginal Heritage Information Management System (AHIMS). There are 60 known Aboriginal sites currently recorded in Kiama Municipality and within these site, 97 site features were recorded as shown in Table 8.1.

Site Feature	Number within Kiama Municipality
Aboriginal Ceremony and Dreaming	1
Art (Pigment or Engraved)	7
Artefact	41
Burial	1
Earth Mound	18
Grinding Groove	4
Potential Archaeological Deposit	3
Shell	19
Stone Arrangement	2
Modified Tree (Carved or Scarred)	1
<b>TOTAL</b>	<b>97</b>

Table 8.1: AHIMS record for the Kiama Municipality

The NSW Heritage Council is required under the *Heritage Act 1977* to keep a register, known as the State Heritage Register (SHR), of both Aboriginal and Non-Aboriginal places of significance. Listing on the SHR means that a place is protected under the *Heritage Act* and that the approval of the Heritage Council is required for any changes or demolitions.

At the National level the Department of Environment, Water, Heritage and Arts (DEWHA) has one site listed in the Register of the National Estate as an Aboriginal place, located in Berry, but the register does not have any specific details on the site.

#### 8.1.2 NON-ABORIGINAL HERITAGE

Non-Aboriginal Heritage inventories have been conducted in the Kiama Municipality in 1987, 1994 and 2000-2002.

Non-Aboriginal Heritage Items of National significance are listed by the DEWHA in the Register of National Estate and

the National Heritage List. Items of State significance are listed in the NSW State Heritage Register. Items of regional significance are registered in Schedule 1 of the *Illawarra Regional Environmental Plan No. 1 1986* and amendments, as well as the *Illawarra Regional Environment Plan No. 2 – Jamberoo Valley 1987*.

Heritage items of local heritage significance are listed in Schedule 2 of Kiama's *Local Environment Plan 1996*. For a full list of heritage items identified in the above listed registers please refer to the State of the Environment Report 2009.

### 8.2 PRESSURES

Aboriginal heritage sites are under threat from activities such as land clearing and housing development, lack of management strategies for assessing the potential impacts of such activities and the lack of identification of sites.

Non-Aboriginal heritage items can become degraded through redevelopment, weather conditions, vandalism, general poor maintenance and lack of understanding.

### 8.3 RESPONSES

#### 8.3.1 HERITAGE ADVISER

Council utilises the services of a consultant Heritage adviser who promotes heritage conservation, educates and advises the community with regard to heritage conservation and provides specialist support and advice to Council on heritage planning and development control activities.

#### 8.3.2 DEVELOPMENT APPROVAL PROCESS

Council has statutory responsibilities under the *Environmental Planning & Assessment Act 1979*, the *Heritage Act 1977* and the *National Parks & Wildlife Act 1974* to consider the potential impacts of any development or planning proposal on items of natural and cultural heritage which includes Aboriginal and European cultural heritage.

During the reporting period no Aboriginal Heritage Studies have been conducted.

#### 8.3.3 HERITAGE PROJECTS

Council engaged Truman, Zaniol & Associates to review the heritage items in the Kiama Municipality and recommend those items which should be included in Schedule 5 of the *Draft Kiama LEP 2010*. The draft LEP is currently awaiting a section 65 certificate from the Department of Planning to enable public exhibition and public submissions by late 2010.



## CHAPTER 9: SUSTAINABILITY

A focus on sustainability both within Council's operations and within the community has become more and more apparent in the past few years. Sustainability at its core is aimed at reducing consumption of non-renewable resources and utilising our energy and water as efficiently as possible, as well as preserving the natural and cultural assets of our environment for future generations.

Kiama Council has undertaken many initiatives to not only identify strategies and potential future actions, but also make pro active changes to its operations and provide the community with educational and participatory events to help the Kiama Municipality become a more sustainable society.

### 9.1 KIAMA COUNCIL TOP 11 WATER AND ENERGY CONSUMING FACILITIES

Kiama Council collates its energy and water data through service provider Planet Footprint. The results for the top 11 electricity and water consuming facilities are shown in Figure 9.1 and 9.2. Please note the top energy consuming facilities are ranked for the current year and the water consumption is ranked compared to the baseline year of 2002/03.

This data is being utilised to benchmark performance of the sites and show trends in consumption from year to year.

Facility	2008/09 Consumption (kWh)	2009/10 Consumption (kWh)
Kiama Leisure Centre	422,566	427,584
Blue Haven Independent Living	394,200	367,058
Kiama Council Chambers	363,539	356,307
Werri Beach HP	330,119	337,882
7 Mile Beach HP	375,720	333,604
Blue Haven Nursing Home/Hostel	322,861	323,382
Surf Beach HP	208,515	212,828
Kiama Library	173,325	181,770
Kendalls Beach HP	156,948	169,698
Kiama Showground Pavilion	117,896	131,360
Kiama Harbour Cabins	116,281	126,935
<b>TOTAL</b>	<b>2,981,970</b>	<b>2,968,408</b>

Table 9.1: Electricity consumption for the Top 11 consuming facilities

There is a decrease of 13,562 kWh for the top 11 facilities between 2008/09 and 2009/10. Total electricity consumption for Councils operations has fallen by 0.4% between 2008/09 and 2009/10.

Facility	2002/03 Consumption (kL)	2009/10 Consumption (kL)
Seven Mile Beach Holiday Park	22,468	13,278
Werri Beach Holiday Park	15,856	7,688
Blue Haven Retirement Village (Nursing home and hostel)	11,158	**8,973
Kiama Leisure Centre	11,121	7,632
Surf Beach Holiday Park	11,092	8,030
Kiama Sports Complex	8,815	1,422
Kiama Harbour Holiday Cabins	8,231	5,831
Blue Haven Retirement Village	8,028	11,844
Kendall's Holiday Park	7,911	*12,589
Kiama Showground	7,088	2,483
Kiama Council Works Depot	3,938	2,228
<b>TOTAL</b>	<b>115,706</b>	<b>81,998</b>

Table 9.2: Water consumption for Top 11 consuming facilities from 2002/03 financial year

(\* and \*\* both had significant leaks identified by the manual data logging program and Kendalls Beach has replaced a number of caravans with cabins since the 02/03 baseline year)

Compared with the 2008/09 water consumption figures for the facilities in Figure 9.2, the 2009/10 reporting period recorded an increase of 9,926 kilolitres(13.8%), however for total Council water consumption there was an increase of 2.4% between 2008/09 and 2009/10.

Compared to 2002/03 figures for the top 11 facilities there is a reduction in total consumption of 30% across these facilities.

### 9.2 CLIMATE CHANGE AND SUSTAINABILITY STRATEGIES AND PROGRAMS

#### 9.2.1 SUSTAINABLE ILLAWARRA PROJECT

The Sustainable Illawarra Project on ground activities came to an end as of 30 June 2010. The Sustainable Illawarra Project was a joint sustainability initiative involving Kiama, Shellharbour and Wollongong Councils. The project was funded by the NSW Government Environmental Trust between August 2007-2010.

The sustainability begins at home component of the grant involved:

- The delivery of 123 sustainability workshops, events and other initiatives which engaged over 8,000 residents across the three municipalities.
- Partnering local businesses to provide residents with special offers on sustainable products
- 150 'Super Challenge' households participated over the three municipalities, committing to sustainability goals and providing showcases of sustainable living to the community.

Other components of the grant included the Kiama Black beach stormwater harvesting and re-use system and the development of the Sustainability Roadmap for Kiama Council which sets out ways for Council to integrate sustainability into its operations.

As a legacy of the program the 'Kiamasphere' website was developed and launched as part of 2010 World Environment Day celebrations in the Kiama Municipality.



*Participants in a guided bushwalk run through the Sustainable Illawarra Project, learn about the biodiversity of the Barren Grounds Nature Reserve*

### 9.2.2 SUSTAINABLE KIAMA COMMUNITIES PROJECT

During 2009/10 reporting period the Sustainable Kiama Communities Project implemented the following programs and initiatives:

- Residential energy monitoring trial where 40 households had energy monitoring meters installed in their meter boxes with the aim of measuring the effectiveness of these meters in helping people reduce their energy consumption
- A solar hot water information night was held on 25<sup>th</sup> September 2009, at the Kiama Showground Pavilion with 8 suppliers providing stalls and information for the public and local action group Jamberoo Future Care providing an information session. Over 100 people attended, with follow up evaluation indicating approximately 45% of people surveyed installed solar hot water systems as a result of attending the night
- A talk was provided to Gerroa Probus on photovoltaic energy generation and solar hot water
- Automated data loggers were installed across 6 of Councils highest water using facilities in partnership with Sydney Water. These data loggers provide real time information on water consumption which enables facility managers to see whether or not there are base flows (leaks) at their facilities
- A draft Sustainability Policy was developed during the reporting period, and will be put to the Council for adoption during the first part of the 2010/11 financial year



*The 'Kiamasphere' website developed as part of the Sustainable Illawarra Project*

- The Sustainable Kiama Communities project has developed a sustainability emailing and mail out list and produces a bi monthly newsletter which it sends to subscribers. There are currently
- Green Vehicle Guidelines were drafted to be implemented under the Sustainability Policy once adopted by Council
- A trial public place recycling program was developed and implemented during the reporting period. Eight key public places and reserves were identified to conduct the trial. Food shops were approached to help communicate the program to the general public during the trial period.

### 9.2.3 BUSINESS TREADING LIGHTLY

The Business Treading Lightly (BTL) project is a grant funded project operating across the Southern Councils Group area, funded by the NSW Environmental Trust. The project has been very successful in engaging and supporting businesses in the area to adopt sustainability actions to reduce energy, water and waste from their operations.

During the reporting period BTL played a lead role in supporting all 5 Kiama Coast Council Holiday Parks in achieving Silver Gumnut Accreditation through the Camping and Caravan Industry Association (CCIA).

### 9.2.4 ILLAWARRA BIODIVERSITY AND LOCAL FOOD STRATEGY FOR CLIMATE CHANGE

The Illawarra Biodiversity and Local Food Strategy for Climate Change is a regional project between Kiama, Wollongong and Shellharbour Councils, funded through the NSW Environmental Trust. The project is concentrating on the two key areas of biodiversity and local food production and security. The following was achieved during the 2009/10 reporting period:

#### Local Food Strategy

The Illawarra Biodiversity and Local Food Strategy for Climate Change is a partnership between Kiama, Shellharbour and Wollongong councils supported by the NSW Environmental Trust. The project aims for a collaborative regional response to protect and conserve biodiversity and local food security into the future through strategic and on-ground initiatives.

The Food component of the Illawarra Biodiversity and Local Food Strategy for Climate Change continues to support sustainable food activities across the region. Kiama Public School are implementing the first Living Classroom school kitchen garden in the area, with a new school soon to be selected in Shellharbour and Wollongong to integrate

permaculture and sustainability principles into the curriculum. The Community Gardens Policy for Wollongong has been finalised, and a process now exists whereby groups can be licenced to establish community gardens on community land.

The project has supported the Stir it Up volunteer community food education project, and will soon re-publish the popular 'Low Cost and Free Meals Directory'. The Kiama Community Garden is well underway, with a motivated group of residents working together to create the region's first site.

The final year of the project will see education activities for residents, the development of a food strategy for the region, and further action to support regional food networks.

#### Biodiversity Strategy

- A number of workshops were held with key stakeholders to develop a regional biodiversity strategy and action plan. The strategy will be displayed for public comment in August 2010
- Tenders were developed and assessed for the on-ground works to be undertaken at priority biodiversity sites as part of the project. On-ground work was started at Jerrara Dam.

### 9.2.5 CLIMATE CHANGE ADAPTATION STRATEGY AND ACTION PLAN FOR KIAMA MUNICIPAL COUNCIL

The Climate Change Risk Assessment and Adaptation Strategy and Action Plan (CCSAP) for Kiama Municipal Council was adopted by Kiama Council at its June 2010 meeting.

The purpose of the CCASAP is to provide guidance to Council on how to respond and adapt to climate change risks which have been identified as part of this project. The adaptation action plan focuses on addressing extreme and high level risks resulting from climate change identified through a risk identification process which informed an earlier stage of the project. Other risks identified as being tolerable or low level risks are not addressed as part of this Strategy. This document is available on Council's website.

### 9.2.6 SUSTAINABLE LIVING GRANTS PROGRAM 2009/10

The 2009/10 sustainable living grants program funded the following projects:

- The Green Box regional food co-operative design of logo and branding

- The Kiama Netball Association training resources for coaches and players
- Ss Peter and Pauls Catholic Primary School development of vegetable and herb garden
- Kiama Public School development of their soil building garden beds as part of the Living Classrooms program

\*Total households in Kiama 8,763 Source Australian Bureau of Statistics, 2006 Census of Population housing

### 9.2.6 KIAMA PUBLIC HEALTH PLAN REVIEW

The review of the Kiama Public Health Plan was started in the reporting period. There were 7 public workshops undertaken in the week of the 19<sup>th</sup> April 2010, around the subjects of:

- Healthy Lifestyle
- Food
- The Built Environment
- The Rural and Natural Environment
- Waste
- Economy
- Partnerships

Following the workshops, the community priorities will be collated and incorporated into the Public Health Plan (2010) where strategies for achieving the communities' priorities will be set out in actions and initiatives. These actions and initiatives will then be incorporated into the 10 year Community Strategic Plan which is being implemented at Kiama Council in the 2011-2012 year.

## 9.3 COMMUNITY UPTAKE OF SUSTAINABILITY NSW GOVERNMENT REBATES AND PROGRAMS

Both the NSW State Government and the Australian Government have offered rebates and incentives to residents to promote the uptake of sustainable living initiatives and technologies. The breakdown of rebates by local government area has only been done for the NSW Government rebates, and the following are statistics for the Kiama LGA to 31<sup>st</sup> March 2010:

Rebate type	Number	*As % of households in Kiama LGA
Rainwater tank	212	2.4%
Hot water system	936	10.7%
Ceiling insulation	103	1.2%
Washing machine	234	2.7%

NSW Home Saver Website 2010



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## APPENDIX 1 STREAMWATCH DATA FOR KIAMA MUNICIPALITY 2009/10

	Testing site	Water quality parameter						
		pH	Turb	EC	AP	Faecal coliforms		
						Drinking (0 CFU/ 100ml)	Primary (150 CFU/ 100ml)	Secondary (1000 CFU/ 100ml)
<b>Gerringong Gerroa Streamwatch Group</b>	Blue Angle Creek @ Seven Mile Beach Caravan Park			N/A				
	Crooked River under Gerroa Rd. Off footpath near caravan park			N/A				
	Union Creek at Parkes Street							
	Ooaree Creek @ Fern Street			N/A				
	Rose Valley Creek, Rose Valley Road							
	Werri Lagoon, Birrebungi Reserve			N/A				
<b>Kendalls Beach Streamwatch Group</b>	Rocklow Creek, Princes Highway			N/A				
	Rocklow Creek, upstream of Minnamurra River junction			N/A	Not tested	Not tested	Not tested	Not tested
	Bonaira Creek Lagoon, south Kendalls Beach			N/A	Not tested			
	Minnamurra River tributary (unnamed creek), Thornett Way wetlands			N/A				

0-24% red (very poor), 25-49% yellow (poor), 50-74% green (fair), 75-100% blue (good-excellent).  
(Source: Sydney Water Streamwatch, 2008)

