

SHOROC

State of the Environment Report

2007/2008



SHOROC – Shore Regional Organisation of Councils

Supplementary State of the Environment Report 2007/2008

Prepared by Manly, Mosman, Pittwater and Warringah Councils

November 2008

Due to the differences in the methodology in reporting by councils and stakeholders, the figures reported throughout this document may vary slightly. Any comparisons that have been drawn have been performed using the best available data and provide the most current state of an indicator. SHOROC apologises for any errors or exclusions and welcomes comments for future State of the Environment Reports undertaken.

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www.manly.nsw.gov.au

www.mosman.nsw.gov.au

www.pittwater.nsw.gov.au

www.warringah.nsw.gov.au

www.shoroc.nsw.gov.au

Abbreviations

AHO	Aboriginal Heritage Office
CBD	Central business district
CCP™	Cities for Climate Protection
CEC	Coastal Environment Centre
CMA	Catchment Management Authority
CMP	Coastline Management Plan
CO ₂ e	Carbon dioxide equivalent
DCP	Development Control Plan
DECC	NSW Department of Environment and Climate Change
DIY	Do it yourself
DTM	Digital terrain model
EPC	Energy performance contract
E-waste	Electronic waste
GHG	Greenhouse gas
GPT	Gross pollutant trap
HVAC	Heating, ventilation and air conditioning
ICLEI	International Council for Local Environmental Initiatives
ICOMOS	International Council on Monuments and Sites
IPART	Independent Pricing and Regulatory Tribunal of NSW
Kg	Kilograms
KWh	Kilowatt hour
LEP	Local Environment Plan
LGA	Local government area
LPG	Liquified petroleum gas
MEC	Manly Environment Centre
RAP	Remediation Action Plan
RTA	NSW Roads and Traffic Authority
SCCG	Sydney Coastal Councils Group
SHOROC	Shore Regional Organisation of Councils
SoE Report	State of the Environment Report
UDIA	Urban Development Institute of Australia
UFAAG	Urban Feral Animal Action Group
UV	Ultraviolet
WSAP	Water Savings Action Plan

Table of Contents

1	INTRODUCTION	1
1.1	What is SHOROC?	1
1.2	What is a State of the Environment (SoE) Report?	1
1.3	Why a Regional SoE?	2
1.4	Environmental Indicators	2
1.5	Consulting with our Communities	2
1.6	SHOROC at a Glance	3
2	LAND AND COASTLINE	5
2.1	Condition of our Land and Coastline	5
2.2	Pressures on our Land and Coastline	7
2.3	Responding to Land and Coastline Issues	7
3	ATMOSPHERE	13
3.1	Condition of our Atmosphere	13
3.2	Pressures on Atmosphere	15
3.3	Responding to Atmospheric Issues	16
4	WATER	21
4.1	Condition of our Water	21
4.2	Pressures on our Water	25
4.3	Responding to Water Issues	25
5	BIODIVERSITY	30
5.1	Condition of our Biodiversity	30
5.2	Pressures on Biodiversity	32
5.3	Responding to Biodiversity Issues	32
6	HUMAN SETTLEMENT	38
6.1	Condition of our Human Settlement	38
6.2	Pressures on Human Settlement	40
6.3	Responding to Human Settlement Issues	41
7	ABORIGINAL AND NON-ABORIGINAL HERITAGE	46
7.1	Condition of our Heritage	46
7.2	Pressures on our Heritage	48
7.3	Responding to our Heritage Issues	48
8	TOWARDS SUSTAINABILITY	52
8.1	Responding to Sustainability Issues	52
9	FUTURE DIRECTIONS	58
10	REFERENCES	59

1 Introduction

1.1 What is SHOROC?

A Regional Organisation of Councils or ROC is a partnership of local government entities that agree to collaborate on matters of common interest. The SHOROC region comprises the local government areas of Manly, Mosman, Pittwater and Warringah.

SHOROC was launched in August 1994 and became formally incorporated in September 2006 thereby increasing its effectiveness to advocate on behalf of the region. Its mission is to value the individuality of member councils while co-operating to achieve a better deal for the community through networking, resource sharing, shared projects, and lobbying. Progress on projects managed by the various SHOROC Steering Committees is reported to the Board which meets on a regular basis.

SHOROC continues to maintain and improve co-operation and resource sharing between member councils to advocate effectively on social, economic, cultural and environmental issues and to manage sustainable growth so as to protect the environment and lifestyle of our local communities. SHOROC continues to consider environmental and sustainability matters when undertaking cooperative activities. For example the SHOROC Procurement Group has set up a working group to consider best practice and to develop policies and procedures to ensure that environmental and sustainability factors are addressed in all tender assessments.

In March 2008, the SHOROC Board resolved to prepare a long term strategy for the SHOROC region. The process for development will ensure that a wide range of issues such as transport, employment, environment and social development are considered together within a broader regional context and within an overall sustainability framework.

For more information about SHOROC and to view annual reports, visit www.shoroc.nsw.gov.au

1.2 What is a State of the Environment (SoE) Report?

A State of the Environment (SoE) Report is an important management tool for councils to determine the effect of management actions on environmental conditions in the local area. It provides a snapshot of the:

- State (or condition) of the environment. i.e. the environmental quality and quantity of natural resources
- Pressures impacting upon the condition of the environment, and
- Response by councils and the community to address the pressures on the environment.

In accordance with the requirements of the *Local Government Act 1993* councils are required to produce a comprehensive SoE Report on all major environmental impacts, related activities and management plans. The first SoE report of a council for the year ending after each election of councillors must be a comprehensive SoE. As such a comprehensive SoE is required once every four years. A supplementary report is developed in the intervening years to identify any new environmental impacts since the last SoE Report and update environmental trends. This SoE is a supplementary document that supports the comprehensive 2003/04 SoE reports from Manly, Mosman, Pittwater and Warringah Councils. This report will also make up a component of each council's individual Annual Report pursuant to S.428 of the *Local Government Act 1993*.



Mona Vale Beach. Source Pittwater Council



1.3 Why a Regional SoE?

This is the second SoE report for the SHOROC region. A regional approach to reporting has been adopted to enable the community and SHOROC to gain a better understanding of the state of the environment, in a regional context. Working together as a region enables the sharing of ideas and knowledge on sustainability reporting, environmental practices and innovation, the success of collaborative programs and the strengthening of regional links.

This report is designed to provide an accessible environmental reporting tool for the communities of the SHOROC region, to assist councils and councillors to identify and monitor key environmental issues and to meet the legislative reporting requirements of the *Local Government Act 1993*. Each chapter of the report has been structured to reflect the accepted standard for SoE reporting known as the 'State-Pressure-Response' model which is utilised at a state and national level.

As this is a regional SoE, the report focuses on common regional projects and details some of the local projects undertaken by each of the four member councils during the 2007/08 financial year. The limited number of initiatives presented in this report for each member council does not reflect all of the initiatives undertaken by each council during the reporting period.

1.4 Environmental Indicators

Indicators are important management tools used in environmental reporting. They summarise and communicate information about the condition of key aspects of complex environments so that our decision making can be better informed.

New indicators, for which all the member councils could provide meaningful data, were selected for the first regional SoE Report prepared last year. As the indicators are relatively new, data from years prior to 2006/07 is not available to provide a comparison. However, a regional analysis of environmental trends over time can commence this year given that comparative data is now available.

1.5 Consulting with our Communities

Councils often involve the community, including environmental groups, in the preparation of the SoE Report. Councils carry out this community consultation in a variety of ways such as requesting public submissions, undertaking surveys or including community consultation in the review of council strategies or policies.

This year a notice was placed in the Manly Daily and Mosman Daily to encourage the SHOROC community to provide input into the report by identifying environmental issues, activities or achievements specific to the SHOROC region by providing a written submission.

Warringah Council held over 200 face-to-face interviews with residents at council's 2008 Australia Day celebrations. The Survey enabled the community to identify environmental issues of primary concern, respond to a set of indicators that link directly to the SoE Report, and gauge awareness of the SoE Report.



Hill to Harbour Walk. Source: Manly Council

1.6 SHOROC at a Glance

SHOROC Regional Profile

The four SHOROC member Councils represent almost 266,000 people. The region, shown in Figure 1, covers an area of 267.26km² and is bounded on three sides by water. Warringah has the highest population in the area, with 140,917 people, followed by Pittwater with 56,920, Manly with 39,677 and Mosman with 28,152 people (as at 30 June 2007).

Figure 1: The SHOROC Region



Source: SHOROC website, 15 October 2007

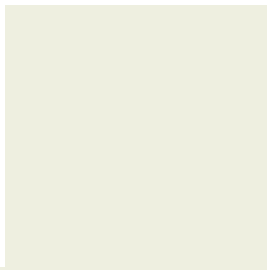
Manly Council

Manly has an area of 15.14km² (1,514ha), incorporating a mix of residential, recreational, bushland, commercial and industrial areas. Approximately 75% of Manly's perimeter is coastline, and its coastal views, bushland areas, beaches and attractions, such as the Manly Scenic Walkway and Cabbage Tree Bay Aquatic Reserve, make it a scenic place for residents and visitors alike. Manly provides habitat for both terrestrial and aquatic species, some of which are listed as protected, endangered or vulnerable.

For more information about Manly Council, its environment and initiatives, visit www.manly.nsw.gov.au.



The Rotunda. Source: Mosman Council



Mosman Council

Mosman has a land area of 8.52km², and is bound by the waters of Port Jackson and Middle Harbour, and shares a common boundary with North Sydney Council. There are 13 prominent headlands in Mosman which form defined ridgelines. The steep topography and irregular shorelines are characteristic of Mosman, whilst the harbour views and remnant bushland contribute to Mosman's desirability as a residential area.

Visit www.mosman.nsw.gov.au for further information on Mosman Council and its surrounding environment and programs.

Pittwater Council

Pittwater extends from Narrabeen to Palm Beach, with the major centre at Mona Vale, approximately 25km north of Sydney CBD. The Pittwater Council area is approximately 90.6km² and is located on a peninsula bounded by the waters of Cowan Creek, Hawkesbury River, Broken Bay, the Tasman Sea and Narrabeen Lagoon. Pittwater's terrain is spectacular, with nine ocean beaches, rugged headlands and sandstone sea cliffs, tranquil waterways and native bushland including two National Parks containing pockets of rainforest. There are extensive wetlands providing sanctuary to many bird species and rock platforms providing habitat for a wide range of marine life.



Coastal Heath Pittwater. Source: Pittwater Council

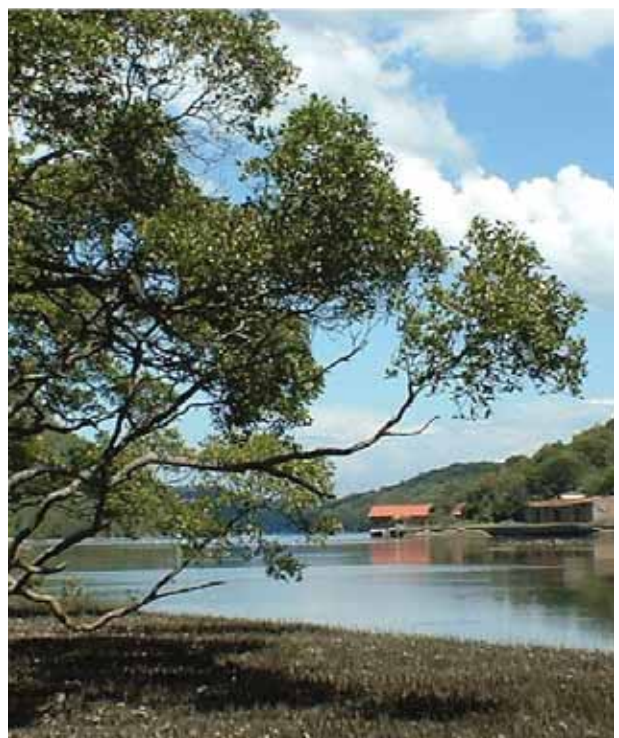
Further information can be accessed on Pittwater's environment and programs at www.pittwater.nsw.gov.au.

Warringah Council

Warringah, the largest of the four areas, is bounded by Cowan Creek in the north, Narrabeen Lagoon and the Pittwater Council area in the north-east, the Tasman Sea in the east, the Manly Council area and Middle Harbour in the south and the Ku-ring-gai Council area in the west. Warringah covers an area of 153km² and has a unique and spectacular environment that contributes to a distinctive sense of place and quality of life.

Warringah's 14km coastline contains nine beaches and more than 6,000 hectares of natural bushland and open space. Warringah is home to many threatened plants, animals and vegetation communities.

www.warringah.nsw.gov.au provides further information on Warringah Council's environment and programs.



Middle Harbour Bantry Bay Munitions. Source: Warringah Council

2 Land and Coastline



Rocky Point Island. Source: Mosman Council

This chapter focuses on the condition of our land and coastal foreshores in the SHOROC region. Land is a primary resource that underpins the environment, the economy and society. SHOROC's land and coastline is diverse in character including residential, business, industrial and natural landscapes.

Coastline areas including beaches, rocky intertidal platforms, estuaries and lagoons provide great aesthetic and recreational opportunities for the region's residents and tourists.

Land indicators have been selected to measure and monitor issues of development, land clearing and re-vegetation, which affect the condition of the land.

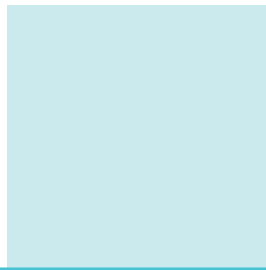
2.1 Condition of our Land and Coastline

Land within the SHOROC region comprises urban areas, interspersed with areas of native bushland and watercourses such as lagoons, estuaries and creeks. This landscape represents a highly modified environment altered from its natural state by human occupation, particularly urban and industrial development, which has occurred since European settlement. Such development has resulted in the replacement of native bushland with the built environment and in some cases the exposure of soils to erosion and contamination.

The data in Tables 1 to 3 shows the condition of the region's land by identifying additional development that has occurred in the region over the past year, which may impact on the condition of the land through land clearing, disturbance of soils and expansion of the built environment. These tables also record the number of native plants distributed by SHOROC member Councils to assist in repairing the condition of the land by stabilising and improving the overall quality of soils.



Dee Why Coastal Dune Swamp. Source: Warringah Council



Regional Snapshot

Table 1: Regional Land Condition

Indicator	SHOROC Region	
	06/07	07/08
Total number of development applications received	3, 505	3,818
Total number of development applications approved	2,844*	3,732
Total trees approved for removal on private land	1,915	1,927
Total number of native plants distributed by all councils (including grasses, shrubs and trees)	102,624	66,642

*Does not include Mosman Council.

Council Snapshots

Table 2: Development Applications

Indicator	Manly		Mosman		Pittwater		Warringah	
	06/07	07/08	06/07	07/08	06/07	07/08	06/07	07/08
Number of development applications received	711	515	486	505	732	747	1,576 [#]	2,051 [#]
Number of development applications approved	745	674 [^]	384 [*]	405	678	715	1,421 [#]	1,938 [#]

*This figure for Mosman Council represents determinations rather than approvals. The term determination refers to development applications that have been approved or refused. This figure was not added to the regional total in Table 1.

[#] Includes DAs for tree removal.

[^] Where more DAs have been approved than received in a reporting year, this is due to approval of DAs lodged in the previous year.

Table 3: Land Clearing and Re-vegetation

Indicator	Manly		Mosman		Pittwater		Warringah	
	06/07	07/08	06/07	07/08	06/07	07/08	06/07	07/08
Approvals to remove trees (private land)	159	193	370	397	196	221	1,190	1,275
Total number of local native plants supplied to volunteers, contractors and residents	10,679	13,237	22,800	7,600	33,300	6,715	35,845	39,090

Tables 1 to 3 demonstrate that within each Local Government Area (LGA) and across the SHOROC region, significantly more native plants were distributed for planting on both public and private lands, than trees (exotic and native) were approved for removal on private land. As native plants distributed include grasses, shrubs and trees, and applications for removal relates only to trees, these two data sets are not easily comparable. However, the data shows that more native plants

are being planted compared to the number of trees being removed, indicating a positive move towards revegetation of our region, which will improve soil quality, reduce erosion and increase habitat areas.

Tables 1 to 3 show a significant decrease in the number of native plants distributed between 2006/07 and 2007/08. This is largely due to the fact that Mosman Council supplied an enormous number of plants the majority of which were used

to revegetate and restore Mosman's bushland areas in 2006/07. A large number of plants were also provided to residents during community events and giveaways. Given that Mosman has only small remnant bushland areas, the number of plants required for planting in 2007/08 was greatly reduced. In 2006/07, Pittwater undertook a major revegetation effort in creekline corridors as well as undertaking extensive planting in degraded areas. A database is currently undergoing development to better track numbers of native plants used in revegetation across the Pittwater LGA.

SHOROC member Councils strive to maintain and improve the integrity and condition of land resources and bushland areas through supporting Bushcare volunteers, bush regeneration and restoration contracts, educating residents, fire management, stormwater management and development controls. However, pressures such as the need to accommodate more people and more jobs adds to the challenge.

2.2 Pressures on our Land and Coastline

Key pressures on the condition of the land in the region include urban development, human use of coastal and estuarine foreshores, pollution, soil contamination, land degradation, vegetation clearing, coastal hazards such as storm damage, altered habitats, invasive species and bushfire.

There are also a number of environmentally sensitive landscapes in the SHOROC region that constrain land-use and may increase the impact of existing pressures. The region, for example, has areas with high landslip potential, cliff instability, relatively unstable and highly erodible soils, potential acid sulphate soils, and lands subject to flooding or coastal erosion.

Climate change is anticipated to become a further significant pressure on the state of the region's land resources, with particular implications for the coastline. Already, the effects of extended drought, increased storm activity, and more frequent and intense bushfires are evidenced through the region's parched soils, loss of grass in open space areas, erosion, loss of trees from storm events and increased bushfire hazards.

Climate change is also expected to impact on the region's coastal foreshores with predicted sea level rise and a wide range of potential coastal impacts including beach erosion, long-term shoreline recession and coastal inundation into the future. Increased storm intensity and frequency will also affect drainage systems and receiving environments through increased potential for flooding and pollution.

2.3 Responding to Land and Coastline Issues

Membership of the Sydney Coastal Councils Group

The Sydney Coastal Councils Group (SCCG) represents 15 councils adjacent to Sydney marine and estuarine environments and associated waterways. Manly, Mosman, Pittwater and Warringah Councils are members of the SCCG.

Recent and current projects that SHOROC member Councils have been involved in, include the Systems Approach to Regional Climate Change Adaptation Strategies in Metropolises Project and the Summer Activities Program (described in more detail below), valuation of Sydney Beaches, the Walking Coastal Sydney Project, Groundwater Education Capacity Building Project and Assessing Vulnerability of Buildings to Catastrophic (Tsunami) Marine Flooding. Further information on these projects is available on the SCCG website www.sydneycoastalcouncils.com.au



Rocky Point Island. Source: Mosman Council



Systems Approach to Regional Climate Change Adaptation Strategies in Metropolises

All four SHOROC member Councils participated in the SCCG Mapping Climate Change Vulnerability in the Sydney Coastal Councils project, part of the SCCG's Systems Approach to Regional Climate Change Adaptation Strategies in Metropolises project. The SCCG have partnered with CSIRO's Climate Adaptation Flagship and working in collaboration with the University of the Sunshine Coast to undertake grant funded research on regional approaches to managing climate vulnerability in the Sydney region.

The project will benefit stakeholders in the Sydney region through:

- Generating information about the likely impacts of climate change (eg. flooding, coastal erosion and temperature) and feasible adaptation strategies (eg. capital works, education, and planning) in the Sydney region
- Deepening the understanding of the likely impacts of climate change and resulting adaptation options in the Sydney region through integration of existing models, vulnerability mapping, and an analysis of adaptive capacity
- Building the capacity of stakeholders in the Sydney region to implement, and monitor the success of, adaptation strategies (eg. for infrastructure, health, and biodiversity)
- Working with stakeholders (eg. SCCG member councils and other stakeholders) to build adaptation strategies into institutional structures and processes (eg. asset management plans, coastal management plans, estuary management plans, floodplain management plans, local environment plans, and regional environmental plans)

The final phase of the project is due for completion in October 2008. At that stage, the completed case study investigations, including Mosman, will provide a regional review of the institutional issues associated with adaptation and the constraints, barriers and opportunities to effective adaptation.

Recommendations will also be made to where key interventions can be made by Councils to improve their adaptation processes.

Summer Activities Program

SHOROC member Councils held various activities as part of the SCCG Summer Activities Program. Mosman Council held a Critters and Litters Workshop at Clifton Gardens in January 2008 that provided information on the importance of the marine environment, marine life found in Chowder Bay, impacts upon the marine life, and ways that the community could reduce these impacts. Pittwater Council delivered four events, attended by over 80 people. These included twilight walks in Warriewood Wetlands and on the Narrabeen Lagoon shores, a rockpool ramble on Narrabeen Headland and a Science of the Surf Presentation. Mosman and Warringah Councils also hosted Science of the Surf workshops. These presentations on surf safety, rips, tides and how they work were popular with the community.



Manly Ocean Beach. Source: Manly Council

Sea Level Rise Seminar

Pittwater Council initiated and hosted a seminar attended by over 180 people, entitled Sea Level Rise - Building Adaptive Capacity to Cope with Sea Level Rise in May 2008. The seminar was supported by Manly, Mosman and Warringah Councils and addressed the sea level rise aspects of climate change. The seminar provided an opportunity for councils to share their knowledge of the likely scope, severity and consequences of climate change for local government. One outcome was a priority request to the state government to develop a standard for sea level rise that can be extended to all coastal areas and guide future planning decisions. Another was the establishment of an expert panel to review the issues and assist the state government to provide local government with the guidance and direction needed to address sea level rise.

New Coastal Walking Maps

Several new maps completing the Sydney's Coastal Walkways series were launched in 2008. The series of brochures combine to provide a mapped and walkable route from Pittwater in the north to Sutherland in the south. To walk the whole route would take 7 days, but the walk can be broken into various distances. Four different brochures cover the SHOROC area. They can be downloaded from www.walkingcoastalsydney.com.au or hard copies can be obtained from Councils.



Coastal walk Whale Beach. Source: Pittwater Council

Delivering Local Responses

Manly Council

Coastal Zone Management

Since 2000 Manly Council has been developing Coastline Management Plans (CMPs) to encourage current best practice for the management of coastal and estuary foreshores.

Council has established the community based Manly Coastline Management and Manly Harbour Foreshores Management Committees to oversee the preparation and implementation of the various Coastal and Estuary Management Plans and associated Coastline Hazard Definition Studies.

During 2007/08 Manly Council adopted the Manly Ocean Beach CMP and Emergency Action Plan for Coastal Erosion in addition to the Clontarf/Bantry Bay Estuary Management Plan. Council continued to prepare Manly Cove and North Harbour CMPs also during the year. Council and the NSW Department of Environment and Climate Change (DECC) have been working together during 2007/08 to prepare the Cabbage Tree Bay Aquatic Reserve Management Plan, the first for an aquatic reserve in NSW.

Coastline hazard remediation works were also undertaken at Delwood Beach and Fairlight Pool during this reporting year.

Bricks & Water

The Bricks & Water program manages erosion and sediment control issues on building sites in the Manly LGA through education. In 2007/08, 240 visits to building sites were undertaken to instruct builders and tradespeople on how to implement on-site silt control in order to prevent stormwater pollution. In-house awareness training for Council compliance staff and a hardware store educational barbeque for builders were also held to further strengthen awareness of erosion and sediment issues. The Bricks & Water program includes a comprehensive education kit which is distributed via businesses in Manly.



Remediation Works

Manly Council is currently project managing the remediation of a Declared Contaminated Site at the former landfill at Addiscombe Road, Manly Vale. Council has engaged Contaminated Lands Consultants and a Site Auditor to prepare and approve, in accordance with the *Contaminated Land Management Act 1997*, a Remediation Action Plan (RAP) to undertake appropriate remediation of the site. These detailed documents are nearing completion to enable an application to be submitted to the Planning Minister for approval.



Manly Coastline Hazards Remediation Works at Fairlight Pool.
Source: Manly Council

Mosman Council

Contaminated Lands Management

The Balmoral Oval contaminated lands site investigation continued during 2007/08. A Human Health Risk Assessment was completed for the site and the draft Remediation Action Plan was developed. Council will be required to remediate the site as per the Remediation Action Plan and Site Environmental Management Plan, to be developed, during 2008/09.

Integrated Project

Council put out to tender the design for integrated works to be undertaken at Pearl Bay/Spit. The design will incorporate seawall restoration works, the introduction of saltmarsh habitat, public foreshore access, installation of a bicycle path and seating using recycled materials.

Community Mulch

Council continued to implement its free community mulch program during 2007/08. Branches and organic matter pruned from street trees and trees on Council land are mulched and taken to Council's mulch storage facility at Whiting Beach Road. This facility is open to the public every Sunday.

Bushfire Hazard Reduction

As per the adopted Manly Mosman District Bushfire Management Committee Program, during 2007/08 Mosman Council undertook a pile burn at Wyargine Reserve, Parriwi Lighthouse and Joels Reserve. Broadacre burns were completed at Lawry Plunkett Reserve and Parrawi Park. The hazard reduction program has reduced the fire hazard in these selected areas and has had a positive impact on the bushland in terms of regrowth.



Bushfires. Source: Mosman Council

Pittwater Council

Warriewood Valley Land Release wins Planning Award

Pittwater Council won a state-wide Excellence Award for its 110 hectare land release in the Warriewood Valley during the year. The Urban Development Institute of Australia (UDIA) awarded Council first place in its 'Public Sector Leadership for Urban Development' category. Council was recognised for providing development which aimed to be 'environmentally and economically sustainable in the short, medium and long-term'. A range of measures were taken to protect and enhance the natural environment, including extensive creekline remediation and planting with local native species to create a wildlife corridor linking the Warriewood Escarpment with the Wetlands.

New Bushfire Management Plan for Bilgola and Newport

During the year, Council prepared a Bushfire Management Plan for the Bilgola and Newport suburbs. The Management Plan sets out a series of measures aimed at managing bushfire risk in the Bilgola and Newport escarpment. Bilgola and Newport both have areas of bushfire prone land and the Bushfire Management Plan takes a holistic approach to preventing the risk to life and property from bushfire in the future.

Dune Restoration Projects

Dunes are an essential natural barrier to sea spray and wave inundation for beachside properties, as well as helping to prevent beach erosion in the face of large seas, and during the year Council continued a range of projects aimed at protecting, enhancing and restoring coastal dunes in the Pittwater area. Council teamed up with the Department of Lands and the Hawkesbury Nepean Catchment Management Authority to hold a dune planting day at the southern end of Mona Vale Beach for the public, to help promote the Dunecare message.

The Friends of Avalon Dunes took out the NSW State Landcare Award for their restoration of the Avalon Beach foreshore. The award recognised the group for 17 years of consistent effort, outstanding natural resource outcomes, development and modelling of best practice conservation techniques and sustainable government and community partnerships. The Avalon Dunes are now stable, with native plants and shrubs providing habitat for a variety of small native birds.



Planting Mona Vale Dunes. Source: Pittwater Council

Canopy Enrichment Program

The Canopy Enrichment Program is aimed at providing replacement of local endemic canopy species trees with the funding principally coming from tree/removal application fees. This funding is used by the Pittwater Council Bush Care Officer to purchase trees for planting days and to provide trees to the public and volunteers. The trees are all planted on public and private lands in the Pittwater LGA.

Warringah Council

Dee Why Wetlands Restoration Project

Warringah Council received a \$57,000 grant from the Sydney Metropolitan Catchment Management Authority (CMA) to commence restoration works at Dee Why Wetlands. Equal funding will be provided through Council's Environment and Stormwater Special Rate. The restoration works will help to rehabilitate remnant wetland known as the Coastal Dune Swamp.



Digital Terrain Model

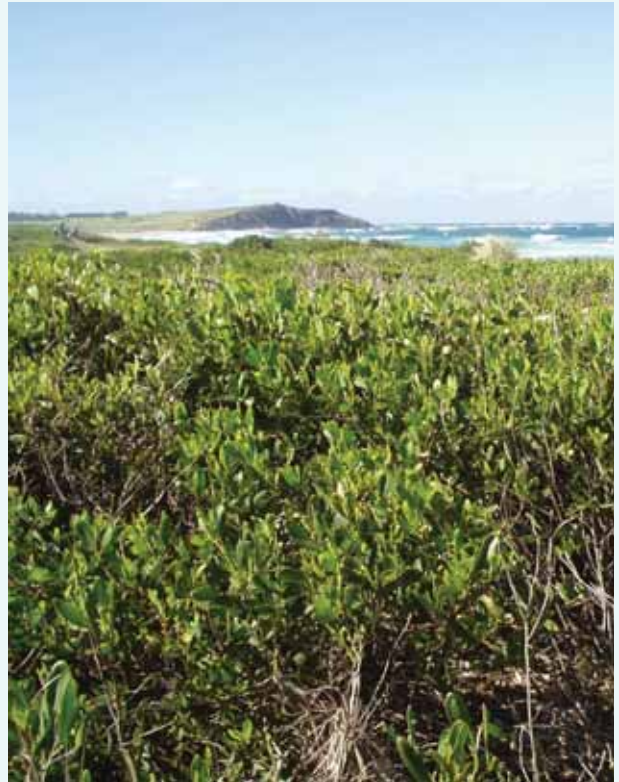
Warringah Council completed an \$85,000 project to develop a digital terrain model (DTM) for the entire Warringah LGA. The DTM was created using an airborne laser that sends out thousands of laser strikes per minute to survey the land surface. The survey information was then used to generate a 3D model of the Warringah LGA. The DTM is the first stage in Council's investigations of all flood affected land in Warringah and will be crucial in assessing the potential impacts of climate change.

South Creek Flood Risk Management

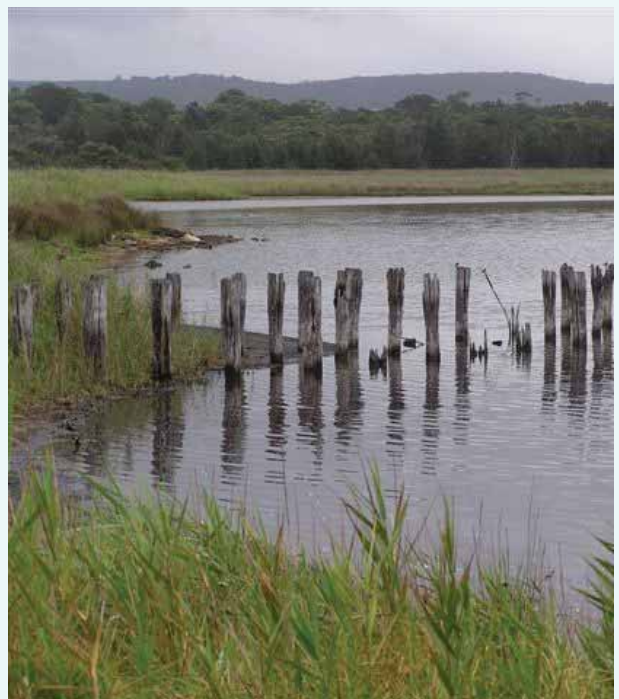
The South Creek floodplain is particularly prone to flash flooding in the upper catchment, and flooding from Narrabeen Lagoon in the lower catchment. During the 2007/08 reporting period, Warringah Council completed a comprehensive Flood Study, Floodplain Risk Management Study and Floodplain Risk Management Plan for the South Creek catchment. These reports were adopted by Council and outline options for managing flood affected land in this catchment. In addition, the reports investigated the stability of the creeks in terms of bank erosion. Sedimentation of the creek and Narrabeen Lagoon has been identified as a major issue in the management of both systems. These projects were jointly funded with the DECC and the Federal Government's Natural Disaster Mitigation Program.

Lagoon Entrance Management

Warringah Council has responsibility for managing the entrances of Dee Why and Curl Curl Lagoons, and shares responsibility for management of the Manly Lagoon entrance with Manly Council, and the Narrabeen Lagoon entrance with Pittwater Council. During 2007/08, Warringah Council implemented improved alarm systems on Dee Why Lagoon and Curl Curl Lagoon to assist staff in managing flood risks and ensuring timely entrance openings. Warringah Council is currently undertaking a review of the management of these entrances to ensure practices are in keeping with best practice flood and environmental management.



*Coastal Dune Swamp Dee Why Lagoon.
Source: Warringah Council*



Dee Why Lagoon. Source: Warringah Council

3 Atmosphere



Palm Beach. Source: Pittwater Council

The atmosphere surrounding the earth consists of a complex balance of gases that support life by providing air for us to breathe and maintaining a suitable temperature. However there are substances in the air which may impair the health of humans, plants and animals, reduce visibility or upset the temperature balance. While these substances, including greenhouse gases (GHGs) and some pollutants such as dust occur naturally, human based activity (such as burning fossil fuels) has rapidly increased the amount of these substances in our atmosphere, which has resulted in impacts to urban air quality and changes to our earth's climate system.

SHOROC has identified urban air quality and greenhouse gas emissions as the two dominant air issues in the region. Indicators have been selected to measure and monitor these issues and activities that contribute to them.

3.1 Condition of our Atmosphere

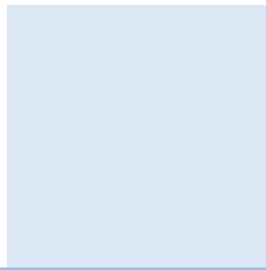
Atmospheric quality of the SHOROC region is largely typical of Sydney, however being a coastal region, the air quality of the region benefits from the ocean breezes, which clear pollutants from the area by dispersing them out to sea or further inland.

Air quality in the SHOROC region varies considerably depending on natural events such as windy days, bushfires and also human activities such as the use of vehicles, wood heaters and the burning of other fossil fuels. Poor local air quality is generally associated with highly urbanised or industrialised areas where vehicle use, heating and production is high, whereas better air quality is generally associated with open space and bushland areas. Air quality also varies locally, depending on adjoining land uses, and even varies within the home or workplace. Air quality can also impact on human health, and as such a high value is placed on being surrounded by clean, fresh air.

The data presented in Tables 4 to 6 can be useful for identifying the condition of the region's air quality through recording air pollution complaints from the community and tracking community and council vehicles and emissions.



Council vehicles. Source: Mosman Council



Regional Snapshot

Table 4: Regional Atmospheric Condition

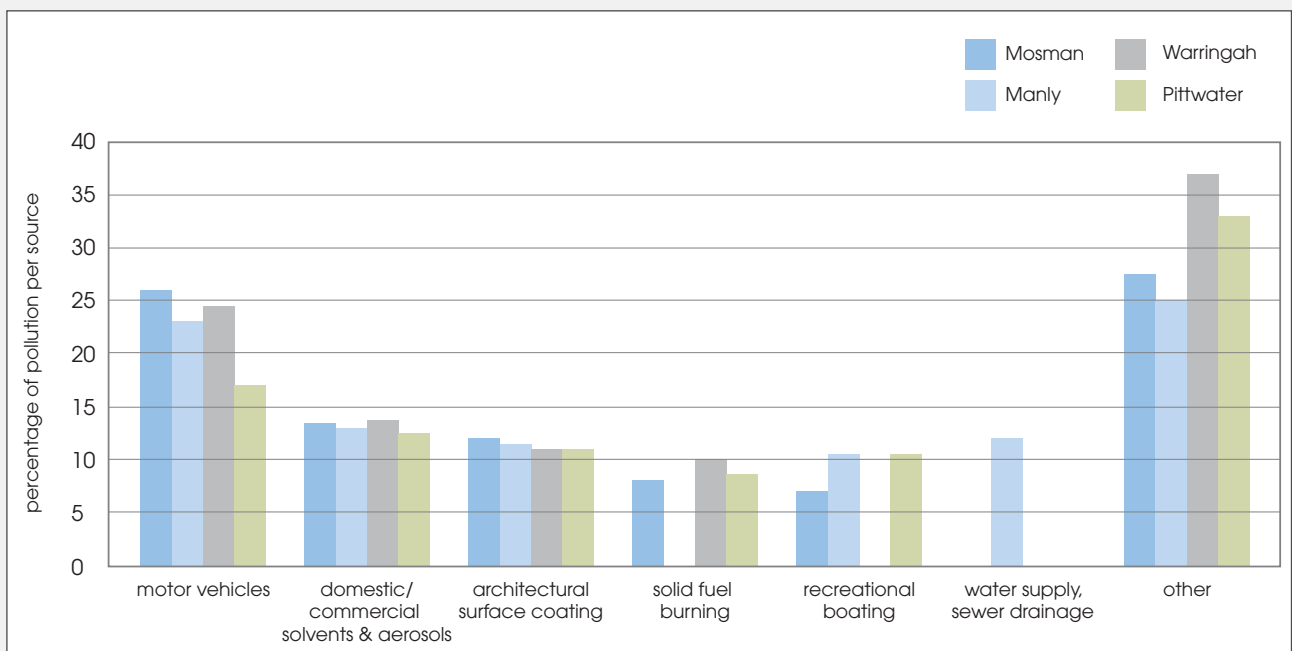
Indicator	SHOROC Region	
	06/07	07/08
Number of registered vehicles (community)	184,929	188,940
Air pollution complaints	142	156
GHG emissions from all council fleet vehicles (tonnes CO ₂ e)	4,131	3,848
Electricity use – council operations (kilowatt hours)	19,350,334	19,170,073
GHG emissions from council electricity use (tonnes CO ₂ e)	19,462	18,947

Council Snapshots

Table 5: Air Quality

Indicator	Manly		Mosman		Pittwater		Warringah	
	06/07	07/08	06/07	07/08	06/07	07/08	06/07	07/08
Air pollution complaints received by council	20	8	2	3	49	65	71	80

Figure 2: National Pollutant Inventory Data for the SHOROC Councils (2006/07)



Source: National Pollutant Inventory, Department of Environment and Water Resources, (www.npi.gov.au)

Table 6: Greenhouse Gas Emissions

Indicator	Manly		Mosman		Pittwater		Warringah	
	06/07	07/08	06/07	07/08	06/07	07/08	06/07	07/08
Registered vehicles in council LGA*	23,113	23,727	16,733	17,305	44,968	45,676	100,115	102,232
Number of council fleet vehicles^	170	162	40	35	146	144	224	211
GHG emissions from all council fleet vehicles (tonnes CO ₂ e)^	1,335	1,367	220	202	1,071	1,112	1,505	1,167
Electricity use – council's operations (kilowatt hrs)	5,697,935	5,441,382	2,808,530	2,853,297	4,924,714	4,585,869	5,919,155	6,289,525
GHG Emissions from kilowatt hrs (tonnes CO ₂ e)	5,485	5,775	2,915	2,962	4,741	4,081	6,321	6,129

*Figures provided by NSW RTA.

^Includes passenger fleet, light, commercial, heavy truck and plant vehicles (if present in councils fleet).

Air quality in the SHOROC region is generally good, with sea breezes keeping pollution to a minimum and minimal heavy industry in the area. Table 5 shows that air pollution complaints have remained relatively stable. Figure 2 demonstrates roughly 25% of pollution comes from motor vehicle use across the SHOROC region. This is the most recent information available from the National Pollution Inventory.

The number of registered vehicles in the community has increased across the SHOROC region as shown in Tables 4 and 6, and this increase is approximately double the population increase over the past year. It is likely that the increased number of vehicles in the region would result in an increase in GHG emissions.

Manly, Mosman, Pittwater and Warringah Councils are moving towards reducing the size of their fleets, both by reducing the number of vehicles and by replacing 6 cylinder vehicles with more fuel efficient models. This has resulted in an overall decrease of greenhouse gas emissions from Council fleets, which is shown in Tables 5 and 6.

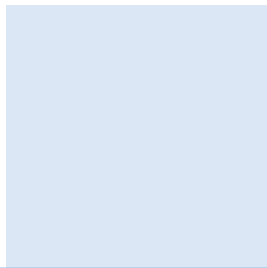
While Manly Council's fleet size has decreased, emissions have increased. This is likely due to the increased operation of the free Hop-Skip-and-Jump community bus. Whilst the community bus has increased Council's emissions, it positively

impacts on GHG emissions of the whole community by reducing private vehicle use. As shown in Table 4, overall the SHOROC member Councils have reduced their electricity consumption by over 180,000 kilowatt hours through implementation of a wide range of measures. This, plus an increased purchase of GreenPower, has resulted in a reduction of 515 tonnes of greenhouse gas emissions from last year.

While Warringah Council's energy consumption has increased, its greenhouse gas emissions have reduced due to a significant increase in the amount of GreenPower purchased.

3.2 Pressures on Atmosphere

Pressures on the atmospheric environment in the SHOROC region include pollutants from motor vehicles, particularly with increasing traffic congestion. Motor vehicle emissions contribute to the production of pollutants and greenhouse gas emissions through the burning of fossil fuels. While the region's public transport systems may contribute to greenhouse emissions, the use of public transport can reduce private car use and therefore reduce the pressure on air quality. However, the SHOROC area is generally characterised by inadequate public transport away from major trunk routes.



Emissions from bushfires, hazard reduction burning of bushland and industrial processes place further pressure on air quality in the region.

3.3 Responding to Atmospheric Issues

Cities for Climate Protection

The Cities for Climate Protection (CCP) Program is an international program assisting local governments and their communities to reduce greenhouse gas emissions. Between 1997/98 and 2006/07, Australian councils reduced CO₂e emissions by over 13.3 million tonnes.

The CCP Australia program builds local government capacity to address climate change through a strategic milestone framework. This framework empowers councils to establish an inventory of their greenhouse gas emissions, set reduction goals, plan and implement actions, and monitor and review their progress. Manly, Mosman, Pittwater and Warringah Councils are all members of the CCP Australia program. Manly and Mosman Councils have achieved the highest milestone 'CCP Plus' while Pittwater and Warringah Councils have achieved Milestone 5. During 2007/08 each Council continued to implement its CCP programs.

Earth Hour

Earth Hour, an initiative of WWF-Australia, was supported by the SHOROC member Councils through promotion of the event in the local media, directly to residents and through hosting of events. The Earth Hour campaign, which first took place in Sydney in 2007, expanded in 2008 to include more than 35 countries across seven continents and more than 50 million participants.

WWF's Earth Hour campaign took out top honours in the 2008 Banksia environmental awards.

Warringah and Mosman Councils wrote to schools and businesses in their areas encouraging them to participate in Earth Hour and contribute to a reduction in greenhouse gas emissions by switching off their lights and appliances for one hour on 29 March. Warringah, Manly and Mosman Councils participated in Earth Hour by switching off their own lights in the main Council buildings.

Additionally Mosman Council supported local community group the Mosman Climate Challenge Group, in promoting their candlelight picnic event held at Balmoral Rotunda, Balmoral Beach. Warringah launched a new climate change campaign at Warringah Mall and hosted a competition with Warringah businesses. The Pittwater community, with the support of Council, ran a solar powered concert on Avalon Beach attended by an estimated 2,500 people. Manly Council celebrated with a free drumming and fire twirling performance on the Beach at Manly Cove attended by an estimated 500 people.



*Energy efficient lighting at Cromer administration building.
Source: Warringah Council*

Delivering Local Responses

Manly Council



Manly Ocean Beach. Source: Manly Council

Climate Change Working Group

During 2007/08 Council continued to service the Climate Change Working Group (CCWG) as a council community committee. The CCWG meets to identify likely impacts of climate change and to provide input on prevention and mitigation strategies.

Climate Change Risk Assessment & Adaptation Project

Manly Council was successful in obtaining grant funding from the Department of Climate Change's Local Adaptation Pathways Project, to undertake a Climate Change risk assessment and develop a Climate Change Adaptation Action Plan. Funding was obtained in 2007/08 and the project will be commenced in 2008/09.

Climate Change Levy

This year Manly Council has explored the possibility of imposing a Climate Change Levy to assist Council fund the implementation of climate change mitigation and adaptation projects. Council commissioned Cardno Lawson and Treloar to undertake preliminary analysis of the likely impacts on the Manly LGA and identify key projects that would require funding to demonstrate the type of projects a Climate Change Levy could assist in funding.

The Manly community will vote on whether Council should apply a Climate Change Levy on the community at the September 2008 local government elections.

Carbon Neutral Project

Manly Council joined forces with Hornsby Council in 2007/08 to identify a Carbon Neutral Framework for purchasing. The project is funded through the Accelerated Action Grant program run by the Australian Greenhouse Office and will be completed in 2008/09.

Hop, Skip and Jump – Manly's Free Community Bus

This initiative was ongoing during 2007/08. Residents are encouraged to hop on the Freebie community bus and skip their car. Benefits of the community bus include reducing the amount of cars on the road resulting in less traffic and greenhouse gas emissions. As at the end of 2007/08 the program had been running for 27 months and had transported approximately 655,000 passengers. The service, which runs on part biodiesel, has been expanded and Council now operates the service to Manly, Fairy Bower, Little Manly, Fairlight, Balgowlah, Balgowlah Heights, Clontarf, Seaforth and Warringah Mall.

Council Fleet

Manly Council has reduced the number of 6 cylinder leaseback vehicles within its fleet during 2007/08 so that of the 52 Council leaseback vehicles, 75% of these are now 4 cylinder.

The use of biodiesel on Council's heavy fleet was also expanded during 2007/08.

Climate Change Education Strategy

Manly Council has developed a comprehensive Climate Change Education Strategy to direct Council's climate change education initiatives over the coming years. Education programs will target the whole Manly community: schools, businesses, residents, visitors and council staff. The Strategy seeks to increase local community awareness and understanding of climate change and motivate behavioural change. Primary objectives include providing the community with current information on the cause and potential impacts of climate change specific to Manly, and to equip the community with actions to reduce the generation of greenhouse gases.



Mosman Council

Milestone 5 Sustainable Transport Project

Council began implementation of its Sustainable Transport Action Plan in July 2007. The Action Plan prioritised sustainable transport initiatives and has assisted council in reducing corporate and community greenhouse gas emissions. During 2007/08, 26 of the 38 identified actions were achieved.



Bike Parking in Mosman Square. Source: Mosman Council

The Action Plan was reviewed and a revised Plan developed in June 2008. Council was the first of the CCP Plus Council's to achieve implementation of its Plan and reach the stage of review. Council's achievement of Milestone 5 of the Sustainable Transport Project and Council's continued commitment to reducing greenhouse gas emissions has been recognised by ICLEI Oceania.

Actions implemented include:

- A staff education and awareness program
- Sustainable transport tag placed on the back of Council's Business Cards
- Sustainable transport considerations included in Council's review of Local Environmental Plans (LEPs) / Development Control Plans (DCPs)
- Sustainable transport included in council events
- Developed a Schools newsletter, and supported Walk to Work / School day
- Implementation of Council's Bike Plan
- A fleet management review which resulted in the majority of Council's 6 cylinder vehicles being replaced by 4 cylinder vehicles. Mosman Council's fleet decreased from 40 to 35 vehicles during the 2007/08, resulting in a decrease of greenhouse gas emissions by 18 tonnes.

Milestone 5 Sustainable Purchasing Project

During 2007/08, Council continued its implementation of its Greenhouse and Sustainable Purchasing Action Plan, developed as a component of the Sustainable Purchasing Project, run by ICLEI Oceania through the CCP Plus Program.

Twenty-four actions from the Action Plan have since been achieved by Council. A review of the Plan was completed and a revised Action Plan developed in June 2008. Through this process Council has received recognition from ICLEI Oceania for achieving Milestone 5 of the Sustainable Purchasing Project.

Actions implemented include:

- Purchase of 100% recycled paper for office use
- Implementation of a staff education program
- Replacement of Library air-conditioning system to a more efficient model
- Low power modes on office equipment
- Purchase of recycled organic material for topdressing the ovals
- Ceramic mugs have replaced the purchase of disposable cups for use in the Civic Centre
- Special Events Policy reviewed to include waste minimisation guidelines.



Sustainable purchasing products. Source: Mosman Council

Greenhouse Gas Emissions Re-inventory

In 2007, Council was successful in receiving a grant from the Australian Greenhouse Office, to employ a short-term staff member to undertake an inventory of corporate and community greenhouse gas emissions for the 2006/07 financial year.

The re-inventory enabled Council to meet its obligations under the planning and review stage of the CCP Plus Program. The re-inventory enabled Council to determine the current greenhouse gas emissions across various sectors for Council and the Community, compare emission levels with past inventories undertaken for 1995 and 2002, and determine the feasibility of Council meeting set reduction targets. The information obtained from the re-inventory has been used to inform the Draft Greenhouse Gas Reduction Plan.

Greening Our Streets Program

In 2008, Mosman Council planned a new environmental initiative called 'Mosman Is... Greening Our Streets'. Homeowners have been given the opportunity to provide a voluntary contribution of \$6.00 per year towards the purchase of 100% GreenPower for Street lighting. Through this initiative Mosman will be one of the first local government areas in Australia to light its streets with GreenPower.

This initiative will provide Mosman homeowners with the opportunity to contribute to improving the health of the environment, demonstrate their support and commitment to reducing Mosman's greenhouse gas emissions, and shows that together Council and Mosman homeowners are implementing changes to combat climate change and work towards a sustainable future.

Pittwater Council

Environmental Pollution Audit

During 2007 Council received concerns regarding the storage of ethylene oxide at a manufacturing facility in Mona Vale. The premises (occupied by Unomedical Pty Ltd) was inspected and action was taken to ensure that air emissions did not cause harm to the environment or public health. Unomedical have since undertaken works to improve air emissions. Council continues to undertake environmental audits of commercial and industrial businesses and approximately 70 businesses in the area have been inspected to ensure they are preventing pollution and complying with Council regulations. The businesses targeted were those with processes that involve emissions or use of chemicals, and ranged from engineering and manufacturing through to boat builders and

surfboard makers. The Mona Vale audits will continue on a regular basis.

Reducing Emissions from the Fleet

Pittwater continues on its strategy of encouraging the use of more fuel efficient vehicles via strategy and revisions to the Motor Vehicle Guidelines. All light commercials are now purchased with either 4 cylinder turbo diesel power or dedicated LPG reducing both fuel consumption and CO₂e in the diesel and CO₂e in the LPG powered utilities. The selection of a 4 cylinder vehicle has been made more attractive and is now mandatory for new participants to the scheme. The number of diesel powered and four cylinder vehicles has doubled since this time last year and will continue to increase. While the number of kilometres travelled has increased we are using considerably less fuel to travel those kilometres.

Solar Panels on the Coastal Environment Centre

The Coastal Environment Centre (CEC) is aiming to become Pittwater's first zero net emissions facility. A major step was taken during the year with the installation of seven solar panels, with a capacity of 1,435 watts, generating about 30% of the Centre's electricity needs. The Solar Powered CEC Project will become the focal point for widespread community action and engagement towards reducing carbon pollution.



*Mayor David James with CEC Solar Panel Installer.
Source: Pittwater Council*

Revolving Energy Fund

Council has established a Revolving Energy Fund, which finances energy saving actions. The fund has been used to install a range of measures, including computer controlled Building Management Systems at Council's offices and at the Mona Vale Customer Service Centre that are leading to significant savings on lighting costs and avoidance of carbon

pollution. Pittwater Council has reduced electricity consumption by almost 339,000 kilowatt hours, resulting in avoidance of 302 tonnes of greenhouse gas emissions. Pittwater now purchases 10% GreenPower for main council buildings and 6% for smaller sites.

Warringah Council

Cities for Climate Protection

The achievement of Milestone 5 during the reporting period involved a re-inventory of Warringah's greenhouse gas emissions using 1995 as the baseline. Between 1995 and 2006 Council's emissions increased 17% largely due to increases from the building sector. This rise was partially offset by reduction of emissions from Council's vehicle fleet. This emissions rise is expected to stabilise over the next few years, particularly from the installation of energy efficiency measures and the purchasing of GreenPower for five of Council's main facilities.

Warringah Fleet Driving a Reduction in Greenhouse Gas Emissions

In July 2006 Warringah Council implemented a new Fleet Strategy with the key objectives to reduce fleet size, fuel consumption and GHG emissions for both passenger and commercial vehicles. During 2007/08 Warringah reduced its trucks and major plant by one quarter, and reduced its number of six cylinder vehicles by over one half. Despite the number of light fleet vehicles increasing slightly, Council has reduced its fleet emissions overall by over 200 tonnes. The dollar savings in fuel was re-invested into purchasing Green Power across major Council sites, resulting in Council being the largest consumer of Green Power on the northern beaches.

Warringah's Energy Savings Action Plan

Following review of Council's draft Energy Savings Action Plan by the DECC, the Plan was submitted to the DECC for approval in May 2008. As of June 30 Council had received informal advice of the approval of the Plan. Written confirmation was expected in July 2008. The Plan is intended to reduce Council's energy consumption by nearly 4 million kWh over the next four years.

In February 2008 Council commenced an Energy Performance Contract (EPC) with Total Energy Solutions for the installation of energy efficient lighting and improved heating, ventilation and air conditioning (HVAC) controls at seven facilities. In addition, the installation of a heat reclaims system and solar hot water system at the Warringah Aquatic Centre as part of the EPC will result in substantial energy and financial savings. Overall, these measures are expected to recover the cost of the EPC (\$558,000) in just over six years as well as reducing Council's greenhouse gas emissions by 941 tonnes per year.

Warringah's Sustainability Working Group

A Sustainability Working Group, comprising Council staff was established to drive organisational improvement in relation to environmental performance. The Group oversees major projects to reduce Council's energy use, including the application of the EPC worth over \$500,000.

Internal Climate Change Workshops

Council's Executive Management Team along with a number of other key internal staff meet regularly to ensure Council's approach to climate change mitigation and adaptation is tracking with best practice across Australia. In 2008/09 Council will be conducting a climate risk assessment involving an initial review using the recently released Federal Government guidelines for climate adaptation.



Warringah residents cycling to the World Environment Day Expo.
Source: Warringah Council

4 Water



Narrabeen Lagoon. Source: Warringah Council

This chapter reports on the quality of receiving waters and the consumption of potable water in the SHOROC region. Indicators have been selected to measure and gauge issues of water quality and water consumption.

In this section 'water' refers to the ocean environments, beaches, harbour, lagoons, aquatic habitats, creeks, wetlands, groundwater, dams, greywater, black water, stormwater, potable water and the catchment activities which may impact upon them.

The SHOROC region is characterised by an abundance of natural water assets, which are highly valued for their aesthetics and recreational purposes and are vital ecosystems for aquatic biodiversity.

The SHOROC region lies within the Sydney Water service area for water and waste water services.

4.1 Condition of our Water

For environmental, social and economic reasons, water is one of the SHOROC region's most important natural resources. As one of our life sources, good quality water is a daily necessity for our community. The region's considerable water resources are enjoyed and highly valued by locals and visitors alike. Good water quality is also essential for ecosystem health.

As shown in Tables 8 to 10, the condition of SHOROC's natural waterways is generally affected by pollutants such as sewer overflows and urban runoff carrying pollutants such as heavy metals, pesticides, fertilisers, sediments, rubbish and weeds. Water consumption across the region is shown in Table 11.



Evening rock platform walk. Source: Pittwater Council

Regional Snapshot

Table 8: Regional Water Condition

Indicator	SHOROC Region	
	2006/07	2007/08
Number of pollutant traps (council control)	174	175
Total gross pollutants removed from pollutant traps (tonnes)	1,603	1,447
Total residential potable water use (kilolitres per capita)*	75	71
Total council potable water use (kilolitres)	384,941	357,601

*Total regional residential potable water use divided by the regional population

Table 9: Beachwatch Water Quality Data

Beach	LGA	Summer 06/07		Summer 07/08		Winter 2006		Winter 2007	
		Faecal	Enterococci	Faecal	Enterococci	Faecal	Enterococci	Faecal	Enterococci
Ocean Beaches	Palm	97%	100%	100%	100%	100%	100%	100%	100%
	Whale	100%	100%	100%	100%	100%	100%	100%	100%
	Avalon	100%	100%	100%	100%	100%	100%	100%	100%
	Bigola	100%	100%	100%	100%	100%	100%	100%	100%
	Newport	100%	100%	100%	100%	100%	100%	100%	100%
	Bungan	100%	100%	100%	100%	100%	100%	100%	100%
	Mona Vale	100%	100%	100%	100%	100%	100%	100%	100%
	Warriewood	100%	100%	100%	100%	100%	100%	100%	100%
	Turimetta	100%	100%	100%	100%	100%	100%	100%	100%
	Birdwood Park	93%	66%	97%	71%	77%	14%	100%	77%
	North Narrabeen	100%	100%	100%	100%	100%	100%	100%	100%
	Collaroy	100%	100%	100%	84%	100%	100%	100%	100%
	Long Reef	100%	100%	100%	97%	100%	100%	100%	100%
	Dee Why	100%	100%	100%	100%	100%	100%	100%	100%
	North Curl Curl	100%	100%	100%	94%	91%	91%	100%	82%
	South Curl Curl	100%	100%	100%	100%	100%	100%	100%	100%
	Freshwater	100%	100%	100%	87%	100%	100%	100%	100%
Queenscliff	Manly	97%	100%	100%	81%	100%	77%	86%	86%
North Steyne	Manly	100%	100%	100%	90%	100%	100%	100%	100%
South Steyne	Manly	97%	79%	100%	90%	100%	100%	100%	100%
Shelly	Manly	86%	79%	97%	97%	100%	100%	100%	100%

Ocean Beaches



Beach	LGA	Summer 06/07		Summer 07/08		Winter 2006		Winter 2007	
		Faecal	Enterococci	Faecal	Enterococci	Faecal	Enterococci	Faecal	Enterococci
Harbour Beaches - Pittwater	Great Mackeral	Pittwater	100%	100%	100%	100%	100%	100%	100%
	Elvina Bay	Pittwater	96%	100%	100%	100%	100%	100%	100%
	The Basin	Pittwater	100%	100%	100%	100%	100%	100%	100%
	Bayview Baths	Pittwater	100%	100%	100%	100%	76%	100%	82%
	Winji Jimmi	Pittwater	100%	100%	100%	100%	90%	91%	82%
	North Scotland Is.	Pittwater	100%	100%	100%	100%	100%	100%	100%
	South Scotland Is.	Pittwater	100%	100%	100%	100%	100%	100%	100%
	Salipan Cove	Pittwater	93%	93%	100%	100%	76%	91%	64%
	Clareville	Pittwater	100%	100%	100%	100%	100%	100%	100%
	Paradise	Pittwater	100%	100%	100%	100%	100%	100%	91%
	Barrenjoey	Pittwater	100%	100%	100%	100%	100%	100%	100%
	Clifton Gardens	Mosman	100%	100%	100%	100%	100%	91%	82%
	Little Sirius Cove	Mosman	100%	94%	84%	61%	80%	100%	100%
	Balmoral	Mosman	100%	100%	100%	90%	100%	100%	100%
	Edwards	Mosman	100%	100%	100%	94%	100%	100%	100%
	Chinamans	Mosman	100%	100%	100%	94%	100%	82%	82%
Harbour Beaches - Sydney Harbour	Davidson Reserve	Warringah	100%	100%	74%	52%	100%	86%	77%
	Gurney Cresc Baths	Manly	100%	100%	84%	68%	100%	82%	82%
	Sangrado Baths	Manly	100%	100%	55%	42%	65%	77%	68%
	Clontarf Pool	Manly	100%	94%	71%	71%	100%	82%	77%
	Forty Baskets	Manly	100%	100%	94%	94%	100%	100%	100%
	Fairlight	Manly	100%	100%	100%	100%	100%	100%	100%
	Manly Cove	Manly	100%	100%	100%	94%	100%	100%	100%
	Little Manly Cove	Manly	100%	100%	94%	84%	100%	100%	100%



Beachwatch (including Harbourwatch) routinely monitors faecal coliform and enterococci bacterial levels in water at Sydney's 100 ocean and harbour swimming sites.

Poor water quality is generally linked to rain events, during and after which pollution from stormwater and sewer overflows can make the region's beaches unsuitable for recreation, particularly due to elevated levels of faecal coliforms and enterococci. Faecal coliforms and enterococci are bacteria found in the intestinal tracts of humans and most other mammals. They are used as an indicator of pollution (and potential pathogens) in water.

Many of the sites monitored under the Beachwatch Program did not perform as well as previous years due to the amount of heavy rainfall experienced during 2007/08. Both stormwater pollution and sewer overflows triggered by rainfall were major pollution sources at many sites, impacting water quality and reducing compliance with water quality guidelines.



Seagrasses at Palm Beach. Source: Pittwater Council

Table 10: Stormwater

Indicator	Manly		Mosman		Pittwater		Warringah	
	06/07	07/08	06/07	07/08	06/07	07/08	06/07	07/08
Number of gross pollutant traps (council control)	23	24*	30	30*	22	22	99	99
Total gross pollutants removed from GPTs (tonnes)	183	158	377	302	57	96	986	891

*Two Manly units and one Mosman unit were not performing to full operational capacity during 2007/08.

Table 11: Water Consumption

Indicator	Manly		Mosman		Pittwater		Warringah	
	06/07	07/08	06/07	07/08	06/07	07/08	06/07	07/08
Total LGA potable water use (kilolitres)	3,776,919	3,565,403	2,903,941	2,816,409	5,064,615	4,709,263	11,727,414	11,277,076
Total residential potable water use (kilolitres per capita)	80	76	88	83	75	72	71	67
Total council potable water use (kilolitres)	104,967	79,185	50,000	43,981	119,615	104,356	110,359	130,079

Source: Sydney Water.

Note: residential water consumption per capita is residential water use per person. LGA water consumption includes commercial, industrial, houses, units/flats and 'other' as classified by Sydney Water.

Table 11 shows that residential water consumption decreased for Manly, Mosman, Pittwater and Warringah Councils and water consumption per capita decreased across the SHOROC region. Note that Sydney Water has informed Councils that it has changed its reporting methodology, figures for 2006/07 have been amended for Mosman, Pittwater and Warringah councils.

Table 11 also shows that Council water consumption significantly decreased for Manly, Mosman and Pittwater, due to water savings initiatives such as installation of rainwater tanks and implementation of leakage detection systems. However water consumption increased for Warringah Council due to the upgrade of several parks and reserves, plus leaks in air-conditioning systems and toilets which have been acted upon. However, Warringah's biggest water user, the Warringah Aquatic Centre, achieved a 30% reduction in water use during the reporting period.

4.2 Pressures on our Water

Our local waterways provide habitat for a range of fauna including fish, frogs, reptiles and birds. Poor water quality can significantly impact on these aquatic habitats. Human activities impact on the condition of these waterways, including stormwater transport, effluent transport and disposal, boating, fishing, swimming and scuba diving.

Other pressures on water quality in the SHOROC region include:

- Increases in impervious surfaces, which reduce infiltration of water and increase the amount of urban stormwater runoff generated
- Sewer overflows resulting from aged infrastructure and illegal connections
- Sewer outfalls and licensed discharges
- Litter
- Nutrient run-off from gardens, industrial estates and animal waste, and
- Water pollution incidents.

These pressures on water quality generally increase during times of high rainfall and flooding. Increases in population and demand may also potentially lead to increases in water consumption and result in the generation of higher volumes of waste water and additional pressure on the region's waterways.

4.3 Responding to Water Issues

Narrabeen Lagoon – Creating a Sustainable Catchment

The NSW Environmental Trust awarded Pittwater and Warringah Councils a \$1.96 million grant to restore the Narrabeen Lagoon catchment area for a period of three years from 2008 to 2011. The money will be spent on a catchment-wide sustainable living education program, creek bank remediation works, bush regeneration and revised planning controls. The grant will also support existing restoration programs within Narrabeen Lagoon by focusing on Middle, Mullet and Nareen Creeks which urgently require resources and remediation works. These much needed funds will enable both councils and the community to help preserve the Narrabeen Lagoon catchment area and its unique environment.

The grant has funded a number of on-ground works to manage the natural resources in the catchment. To date, a weed survey, biodiversity assessment and creek management plan has been developed for Middle Creek.

An extensive education program including a booklet, community display board, wildlife survey, webpage and regular newsletters distributed to the 15,000 residents that live within the catchment boundaries. School excursions, guided walks, a Sustainability Champions program and an advertising campaign are also some of the achievements of the grant to date.

A community committee has been formed to provide a conduit to the greater community and to build ownership and empowerment amongst the members.



Testing the Waters – Catchment Snapshots and Youth Forum

In September 2007 Manly and Warringah Council's partnered to deliver the Testing the Waters – Catchment Snapshots and Youth Forum event in collaboration with Sydney Water's Streamwatch.

In 2007 the program was delivered to 180 students from eight high schools in the Manly and Warringah LGAs. Highlights of the Catchment Snapshots (water testing) days included macroinvertebrate sampling activities and a guided bushland tour around Manly Dam. At the Youth Forum, all students came together to present the results from water testing activities and discuss how to protect the health of our waterways, following which students participated in a variety of environmental education workshops.

In November 2007 Manly Council attended the 'River Cities Symposium' to present a case study of this event. This presentation was delivered among a host of other local and state Government practitioners to almost 1,000 students and teachers from schools around Sydney.

WaterFix Program

Interested residents in the SHOROC region have taken up Sydney Water's WaterFix program, which includes do it yourself (DIY) water saving kits (self installation of water saving devices), WaterFixing the home (for \$22 a certified plumber visits residents' homes, checks for minor water leaks and installs water saving devices), \$150 washing machine rebate, a \$1,500 rainwater tank rebate, and the Love Your Garden program. The community's interest in reducing their water consumption not only encourages using water wisely but also reduces their water bill and the consumption of water for the region.

The continued high level of participation in 2007/08 is a reflection of the growing awareness and concern towards saving water, as a result of water restrictions and water wise programs promoted by SHOROC member Councils, and other organisations such as Sydney Water.



Collaroy Beach. Source: Warringah Council

Table 12: Participation in Sydney Water's WaterFix Program

Water Saving Program	Manly		Mosman		Pittwater		Warringah	
Date	07/08	Total 99 to 08	07/08	Total 99 to 08	07/08	Total 99 to 08	07/08	Total 99 to 08
DIY Kits	322	1,238	219	733	217	1,409	932	4,724
WaterFix your home	389	3,840	300	2,167	369	5,130	1,244	14,465
Washing machine rebate	904	1,766	541	1,142	1,040	1,982	2,521	5,046
Rainwater tank rebate	96	293	72	257	269	1,062	421	1,511
Love Your Garden	95	183	80	149	143	235	322	570
Total Participation	1,806	7,320	1,212	4,448	2,038	9,818	5,440	26,316

Delivering Local Responses

Manly Council

Local Stormwater Harvesting

During 2007/08 Council implemented a local community partnership stormwater harvesting project at Bear Cottage Children's Hospice in Manly, funded by an Australian Government Community Water Grant. The project involved installation of 25,000L rainwater tank storage for offsetting potable water used at the facility for irrigation of gardens and laundry. This project will be completed in 2008/09.

In addition, during 2007/08 Manly Council applied for a \$2 million Urban Sustainability Grant from the DECC, in partnership with Warringah Council, to undertake stormwater harvesting at Balgowlah Golf Club and rehabilitation and education works throughout Burnt Bridge Creek. Response to the application is expected in late 2008.

Water Savings Action Plan

Manly Council completed a Water Savings Action Plan (WSAP) in April 2008, with approval by the Minister for Climate Change, Environment, and Water, granted in June 2008. This WSAP documented a 40% reduction in Council potable water usage between 2000/01-2006/07 in Council operations. During 2007/08 Council has implemented a significant number of WSAP actions, including installation of new rainwater tanks and ongoing retrofits of existing facility with water conservation devices. Updated 2007/08 figures from Sydney Water indicate Council has now achieved a total 55% reduction in potable water consumption between 2000/01-2007/08.



Queenscliff SLSC Water tanks. Source: Manly Council

Water Leak Audit

In 2007/08 Council continued a water leak audit and rectification program commenced in 2006/07 for Council facilities. The project involves monitoring and modelling actual (observed) and predicted water usage for a range of Council facilities and investigation of suspected unexplained high water usage facilities. This has included the use of manual reading and electronic data logging of water meters, sub-meter installation, and water use audits. As part of the process, key linkages have been formed with users of sporting facilities and public open spaces in the Manly LGA. This has resulted in substantial ongoing water conservation across Council.

Groundwater Study

Manly Council has allocated \$40,000 funding from Council's Environment Levy funds to undertake a scientific study of natural processes of groundwater flow and recharge in Manly. Council currently utilises local groundwater (bore water) for irrigation of parks and gardens as a key component to reduce Council's potable water consumption. This has assisted Manly Council to reduce potable water consumption by approximately 70 ML/year since 2000/01 (saving \$130,000/year ongoing based on \$1.83/KL – IPART March 2008 pricing determination). This study will guide the sustainable long-term management of this resource and will compliment the extensive scientific training technical staff have received in this field.

Mosman Council

Rainwater Tank Installation Project

Mosman Council was successful in receiving a community water grant to install rainwater tanks on three Council buildings, namely the Council Depot, Allan Border Oval Pavilion, and Middle Head Oval Pavilion. The tanks were installed on the three buildings in May 2008 and allow for a combined tank capacity of 25,000L. The rainwater tanks are being used to flush the toilets at each of the three sites, reducing the pressure on the mains water system by reducing mains water use.



Stormwater Reuse Projects

On-site works on the Cross Street Stormwater Reuse Project commenced during 2007/08. Large underground tanks have been installed to collect the stormwater for reuse in the toilet block and on the nearby oval. Sandstone blocks from the excavation works were set aside and will be recycled through use on other projects.

Council received a major grant through the Community Water Grants to implement the Botanic Road Stormwater Reuse Project. The planning stage of this project was completed during 2007/08. The project will involve the installation of a stormwater quality improvement device, the installation of a stormwater holding tank and UV treatment equipment. Stormwater collected will be treated and reused on Balmoral Oval, Botanic Road Reserve and the parks and gardens on the Esplanade along the Balmoral Foreshore.



Rainwater Tank at Allan Border Oval. Source: Mosman Council

Water Savings Action Plan

In March 2008, Mosman Council submitted the first annual report on the progress of Council's Water Savings Action Plan to the DECC. The annual report highlighted Council's water savings through actions such as the reduction in water use for irrigation at a number of sites, the installation of water efficient devices on taps and showers in Council facilities, and the installation of dual flush toilets.

Creek Monitoring

Mosman Council was successful in receiving an Estuary Management Grant from the DECC to implement a creek monitoring program. The project proposal was completed during 2007/08 and monitoring will commence mid 2008. The project involves the physical, chemical and biological

monitoring of up to six creeks within the Mosman LGA. The quality of both water and sediments will be monitored and macro-invertebrates will be identified at each site twice per year. This project will enable Council to determine the current condition of its creeks.

Pittwater Council

Water Savings Action Plan

Currently Council uses 109,000 kilolitres of potable water each year. The main contributors to this use are Sydney Lakeside Caravan Park, golf courses, Pittwater Rugby Park and foreshore amenities. Council's aim by 2020 is to reduce potable water consumption by 20%.

Through implementation of actions detailed in the Water Savings Action Plan such as installing water efficient devices and rainwater tanks at our depots, reserves and clubs, and participation in Sydney Water's Every Drop Counts Business Program, we are progressively reducing our water demand. Council's Water Savings Action Plan was approved by the DECC in October 2007 and adopted in February 2008.

Stormwater Harvesting

As part of the plan to maximise water recycling in the local community, Council has invested in a stormwater harvesting project worth \$240,000 at Porters Reserve, Newport. The project is intended to irrigate Porters Reserve year round without reliance on town water. It involves collecting stormwater during rain events and pumping it through a gross pollutant trap. The collected water will then be treated in a holding tank and channelled into a 180,000 litre storage tank to be used for irrigation.

Community Water Conservation Plan

Council adopted its Community Water Conservation Plan in June 2008. This Plan was produced to combat the fact that Pittwater residents have one of the highest water consumption rates in Sydney, which is expected to increase by 20% in the next 30 years if preventative action is not taken.

The Plan enables Council to take a lead in encouraging the community to reduce water consumption. It sets out a number of strategies to achieve this including:

- Water and energy audits for local households and business
- A project to recycle water for irrigation
- Stormwater and rain harvesting schemes
- Community education on conserving water.

Warringah Council

Water Quality Monitoring Program

In 2006/07, Warringah Council developed a new water quality monitoring program that covers freshwater monitoring and assessment, estuarine monitoring and assessment and event-based monitoring (stormwater). In 2007/08 two programs under the freshwater monitoring and assessment component were undertaken (water quality monitoring and biological assessment).

The objective of the program is to obtain information on the baseflow water quality in a selection of freshwater creeks in the LGA. The program will sample 24 events during baseflow conditions. Water quality monitoring was undertaken at 15 sites on three events and biological assessment of water quality was undertaken at 13 sites in spring and autumn.

The water quality monitoring program measures physico-chemical water quality including temperature, dissolved oxygen, pH, conductivity, nutrients, suspended solids, chlorophyll-a and faecal coliforms. At each site, replicate samples and measurements are taken.

The biological assessment program takes samples of small organisms, macroinvertebrates and diatoms, in conjunction with water quality measurements. The types and number of these organisms found at each site provide an indication of whether the site is polluted or un-polluted. There are 13 impacted sites and two reference sites sampled as a part of this program.

Water Savings Actions

Following review of its draft Water Savings Action Plan by the DECC, Council's revised plan was submitted to DECC in May 2008. As of June 30 Council had received informal advice of the approval of the Plan. Written confirmation was expected in July 2008. The Plan is intended to reduce Council's water consumption by over 20 million litres over the next four years.

An audit of seven Council facilities was completed in April 2008 and the recommendations from this audit are being integrated into Council's rolling three year works program. Sydney Water also carried out a diagnostic review of Council operations under the Every Drop Counts program in April 2008 and this resulted in Council reaching three stars under this program. Council has also committed funds from 2008/09 onwards for three years for energy and water savings in our facilities and this will result in better metering of Council's premises, installation of water saving appliances and reduced reliance on mains water supply for non-drinking water purposes.

Manly Dam Education Program

2007/08 saw the completion of Warringah Council's 'Keeping Our Dam Alive' education program focussing on Manly Dam. A specific and varied program was devised to educate local residents and visitors on why Manly Dam is such a special place, and how they can help look after the bushland and water quality of the Dam. The educational campaign included the distribution of the education kit for schools, a community wildlife survey, a fishing competition (Carp Classic) focussed on removing feral fish from the dam, a community day on 25 November 2007 and several school excursions, early-morning bird watching walks, and after-dark spotlight walks. The project also included a web-based advertising campaign encouraging footballers to remove their strapping tape from sportsgrounds as it results in localised water pollution problems.

Industry Audit and Education Program

During 2007/08 Council continued to take a pro-active approach to environmental management of local industries to prevent pollution. Council conducted environmental audits of industrial and commercial premises, concentrating on the auto-servicing sector. The major focus of these audits is preventing contamination of stormwater runoff. In addition, Council collaborated with the Green Plumbers program, providing information of legal requirements and best practise environmental management. Council also responded to pollution spills, the most common being oil and concrete.

5 Biodiversity



Kookaburra. Source: Mosman Council

Biological diversity (or biodiversity) is defined as the variety of life forms, the different plants, animals and micro-organisms, the genes they contain, and the ecosystems they form. Biodiversity includes genetic diversity, species diversity and ecosystem diversity (Commonwealth of Australia 1996). Biodiversity is essential in forming functioning ecosystems which maintain important processes on which all life depends. Biodiversity also has an intrinsic value and as such conservation of biodiversity is one of the primary principles of ecologically sustainable development.

Biodiversity indicators have been selected to measure and gauge local and regional issues of noxious weeds and pests, Bushcare activities and the condition of threatened species and ecological communities.

5.1 Condition of our Biodiversity

Biodiversity in the SHOROC region incorporates terrestrial (land), aquatic and marine (water) based plants, animals and micro-organisms. Most of this diversity of flora and fauna is contained in the region's bushland areas and waterways, however the region's urban and rural residential areas including reserves, private gardens and street trees also contain important biodiversity.

The condition of the region's biodiversity is affected by a number of natural and human induced factors such as bushfire, invasion by pests and weeds, land and river bank clearing, development, encroachment, fragmentation, water pollution and climate change. In some cases, these and other factors have resulted in the loss of biodiversity to the extent that the viability of a species or population is threatened.

Under the *NSW Threatened Species Conservation Act 1995*, the term *threatened* is used to describe both *endangered* and *vulnerable* species, populations and ecological communities. Endangered species are those that are likely to become extinct if threats continue to those species. Vulnerable species are those that are likely to become endangered should those threats continue.

Tables 13 and 14 show the number of threatened species, endangered populations and ecological communities in the SHOROC region. Over time this will allow the region to monitor the biodiversity that is under threat. Noxious weed notices and Bushcare volunteers are also reported to gauge on-the-ground responses to biodiversity issues.



Wellings Reserve, mini-wetland project. Source: Manly Council

Regional Snapshot

Table 13: Regional Biodiversity Condition

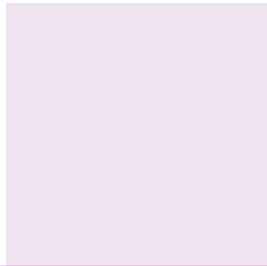
Indicator	SHOROC Region	
	06/07	07/08
Total noxious weed notices to residents	199	234
Total noxious weed assessments undertaken	354	389
Bushcare program volunteer hours	15,744	21,067
Total number of active registered Bushcare volunteers	937	907
Number of threatened species	167	167

Council Snapshots

Table 14: Council Biodiversity Condition

Indicator	Manly		Mosman		Pittwater		Warringah	
	06/07	07/08	06/07	07/08	06/07	07/08	06/07	07/08
Noxious weed notices*	48	83	0	0	90	56	61	95
Noxious weed assessments undertaken*	0	47	25	24	177	171	152	147
Number of registered active Bushcare volunteers	210	66	177	196	250	356	300	289
Bushcare program volunteer hours	583	528	2,754	5,292	6,207	9,283	6,200	5,964
Number of active Bushcare groups	16	11	17	34	26	28	51	51
Number of native plant species recorded in LGA	449	449	454	454	unknown	unknown	914	914
Number of threatened flora	10	10	3	3	14	14	20	20
Number of threatened fauna	20	20	4	4	42	42	54	54
Number of endangered ecological communities	2	2	3	3	9	9	16	16
Number of endangered fauna populations	2	2	0	0	2	2	0	0
Number of feral fauna species targeted through programs	2	2	2	1	3	2	6	4

*Under the *NSW Noxious Weeds Act 1993*, councils as the local control authority, may require owners or occupiers of land to control noxious weeds. Under the Act, private occupiers of land must control noxious weeds on their land. A Noxious Weed Assessment gives prior notice that a Weed Control Notice may be issued, and provides information about the weeds of concern to the landholder along with a timeframe for compliance. If the landholder fails to control weeds as required under the Act, a Weed Control Notice may be issued specifying the time (not being less than 14 days) within which action is to be taken. Failure to comply may result in prosecution.



The number of noxious weed assessments and notices issued across the SHOROC region increased from the 2006/07 reporting year to 2007/08. This is largely due to the engagement of an officer to undertake these assessments and notices within the Manly LGA. During the previous year, this position was largely vacant. This represents a positive trend for biodiversity and human health through the removal of noxious weeds that have the potential to spread and reduce biodiversity values.

The commitment of the SHOROC community towards Bushcare and the continued regeneration of SHOROC's bushland areas is highlighted through the increase in Bushcare groups and volunteer hours. The data indicates that the number of Bushcare volunteers in Manly has decreased significantly, however, the 2006/07 figure included both active and non-active volunteers while the 2007/08 figure includes active volunteers only.

Threatened species data remains unchanged between 2006/07 and 2007/08 as councils undertake periodic comprehensive flora and fauna monitoring, and no monitoring was undertaken this reporting year.

This data represents a positive trend across the SHOROC region for restoration of our bushland areas, removal of key weed species on public and private lands and management of our biodiversity.

5.2 Pressures on Biodiversity

The most significant pressures identified for the SHOROC region's biodiversity include:

Terrestrial Biodiversity

- Altered and inappropriate fire regimes
- Clearing and fragmentation of native bushland
- Simplification of ecosystems by a reduction in native diversity of species
- Illegal poisoning of trees
- Decline of street trees and trees on private properties due to age
- Illegal dumping of rubbish in bushland areas
- Spread of invasive weeds
- Predation of native animals by feral animals

- Plant diseases such as Phytophthora root rot caused by the soil fungus *Phytophthora cinnamomi*
- Encroachment of private gardens into native bushlands
- Stormwater flow through bushland causing erosion and carrying nutrients and weeds
- Companion animals disturbing and spreading disease to native fauna,
- Increasing frequency and intensity of storm events
- Climate change impacts.

Aquatic Biodiversity

- Illegal dumping of rubbish in aquatic areas
- Spread of invasive flora and fauna
- Stormwater discharges reducing water quality
- Anchoring and ballast water from boats spreading weeds and exotic species of fauna
- Increasing frequency and intensity of storm events
- Replacement of swimming nets
- Climate change impacts.

5.3 Responding to Biodiversity Issues

National Tree Day

Each of the SHOROC member Councils participated in Planet Ark's National Tree Day events during July 2007. Tree planting makes a positive contribution to our environment by enhancing the local habitat, providing shelter for our native animals and helping to absorb carbon emissions. For example in Warringah, over 1,000 plants were planted at Nolan's Reserve, Rhoker Reserve, Duffys Forest and Sloane Crescent, Manly Vale by students and local volunteers.

Bushland Management

The SHOROC member Councils continued to undertake bushland regeneration with the aims of restoring and maintaining bushland and parks, controlling the spread of noxious weeds, providing habitat and wildlife corridors for native fauna and to guarantee the long-term viability of our natural heritage.

Wallaby Proof Fence

Warringah Council and the RTA have built a new wallaby proof fence on the Wakehurst Parkway at Oxford Falls to help protect the local wildlife. Council has been working with community volunteers and the Roadkill Working Party (consisting of Pittwater and Warringah Councils, National Parks, WIRES, the RTA, NSW Police, Sydney Metropolitan Wildlife and community representatives) to look at ways to protect our native fauna.

A survey of the stretch of road along the Parkway between the two Middle Creek culverts showed this area to be a roadkill hotspot. Warringah Council and the RTA each contributed half of the \$60,000 costs for the fence which extends 530 metres on the eastern side and 320 metres on the western side where a cliff will provide a natural barrier. The fencing links two Middle Creek crossings to funnel the wallabies under the culverts. The effectiveness of the fence is assessed by community volunteers who will continue to monitor and report on the number of animal deaths. A recent biodiversity inventory carried out for the lower Middle Creek area indicates that the fence is already proving effective in reducing wallaby roadkill on this part of the Wakehurst Parkway.

Urban Feral Animal Programs

During 2007/08, representatives from the SHOROC member Councils attended quarterly meetings of the Urban Feral Animal Action Group (UFAAG) to discuss and exchange information on feral animal issues across the region and possible solutions/feral animal programs that could be implemented.

All SHOROC member Councils are committed to ensuring the protection of native flora and fauna through feral species removal programs. The Manly, Mosman, Pittwater and Warringah threat abatement programs continue to coordinate and implement ongoing feral animal monitoring and control programs. Priority species for the SHOROC region include European red foxes, rabbits, cats, Indian Mynas and seagulls. Methods implemented during 2006/07 to control feral animals included trapping and baiting.

Delivering Local Responses

Manly Council

Penguin Celebration

A Penguin Celebration was held in the Manly Corso on Sunday 28 of October involving Manly District Band, 'The Penguins' Orchestra, a Penguin Waddle relay, Penguin Pal Pledge and Penguin Bootscoot. The event was arranged by the Manly Environment Centre and Council in association with the DECC and Taronga Zoo. Manly's volunteer Penguin Wardens introduced their program and children from the Manly Village Primary School presented dramatic educational enactments of threats to the local penguin population. Warren Coleman (of 'Happy Feet' fame) also gave a speech on the theme.

Threatened Species

Threatened populations of Little Penguins (*Eudyptula minor*) and Long-nosed Bandicoot (*Paramelomys nasuta*) are present in Manly's LGA. Though extensive urban development has occurred within Manly, the presence of these populations indicates that Manly provides the habitat requirements for these species to survive.

During 2007/08 Council continued to implement the Little Penguin Recovery Plan and continued to input into the development of the Long-nosed Bandicoot Draft Recovery Plan, both in association with the DECC and other stakeholders. Council has assisted DECC with their Penguin Warden Program and has worked closely with the penguin volunteers by providing assistance and temporary management measures for the Manly Wharf and Federation Point nesting sites. Council also developed designs for more permanent measures for the protection of the Wharf and Federation Point sites and has undertaken significant consultation during the process. These will be implemented in 2008/09.

Bush Regeneration & Bushcare

Manly Council's Bush Regeneration program has seen extensive restoration work undertaken in 42 reserves by Council Bush Regenerators, Contractors and Volunteers during 2007/08.

A number of Bushcare training courses have been held during 07/08 to improve the knowledge of volunteers working in Manly's bushland.



Burnt Bridge Creek Restoration Works

Burnt Bridge Creek restoration works during 2007/08 included removal of Coral trees, weed control and revegetation.

A detention basin was also installed on Burnt Bridge Creek (Fromelles St section) to prevent stormwater discharge into bushland impacting on the quality of native vegetation.

Riparian Restoration

Manly Lagoon Riparian Restoration works were undertaken with assistance of Sydney Metro CMA grant funding. The grant program provided \$20,000 to undertake weed control, revegetation, timber edging installation, maintenance of the existing sculpture and replacement of school children artwork.

Wellings Wetland

A small wetland was created in Wellings Reserve to protect this significant bushland area from the impact of stormwater runoff.

Native Plant Giveaway

A Native Plant Giveaway was held in May 2008 to provide free native plants to Manly residents. 1,808 plants were given away during the weekend.



Fromelles Ave drainage works, final restoration.
Source: Manly Council

Mosman Council

Flora and Fauna Survey

Data from the Flora and Fauna Survey, received by Council in 2007/08, indicate that current bushland management activities are achieving the objective of Council's bushland restoration program. Weed percentage cover is reducing, particularly in areas previously assessed as high weed percentage cover. Native vegetation cover is increasing and sustainable long-term native habitats are being produced.

Currently 45% of bushland under the control of Mosman Council has > 90% native vegetation cover, this is a 30% increase since 2001. Bushland restoration works, especially through the use of fire, has increased the population density of the endangered plant *Acacia terminalis* spp *terminalis*. Other sites that have been exposed to fire have seen the natural reintroduction of local indigenous plant species.



Banksia integrifolia flower. Source: Mosman Council

Chinamans Beach Dune Restoration

Under the Sydney Metropolitan Catchment Management Authority Stage 2 Dune Restoration Project, five dune sites were selected for restoration works in October 2007. Chinamans Beach was one of the sites nominated for the project, being awarded \$15,000 to complete restoration works.

The work area covered 0.6ha, and works included the closure of a disused beach track, installation of fencing, maintenance and revegetation works, specifically:

- Cutting back vegetation where it was causing problems/obstructions to the fencing and access.
- Brushmatting bare areas and blocking man-made access tracks into the fenced areas.
- Planting of native coastal plants of local provenance into three key revegetation areas.
- Planting of Spinifex runners and Pigface cuttings along the fore dune area.
- Collection and casting of indigenous seed to further regenerate bare areas.

The Rapid Assessment Tool (RAT) results show a small improvement in biodiversity and native plant cover. Biodiversity values will continue to increase and threats decrease with maintenance of the newly planted areas.



*Chinamans Beach dune restoration project.
Source: Mosman Council*

Balmoral Jetty Restoration Project

The Balmoral Jetty was identified as being in need of repair and restoration for user access and safety purposes. The works involved were the removal of old wooden piles and decking. The on-ground works began in June 2008.

Balmoral Jetty surrounds Balmoral Baths, a netted swimming area for the public. The net was identified as a habitat for numerous marine organisms including seahorse. Seagrass beds are also present in the baths and surrounding the Jetty. In order for Council to meet its obligations under legislation to protect biodiversity, and to ensure works were undertaken to minimise environmental impact upon marine life and water quality, several measures were implemented, these are as follows:

- Consultation with the Department of Primary Industries (NSW Fisheries), local scientists from Sydney Institute of Marine Science, and local diving groups
- Commissioned a Biodiversity Survey and Report by the Ecology Lab
- Development of an environmental impact statement
- Held discussions with the Contractors to ensure all environmental issues/concerns were taken into consideration and measures adopted on site
- Site visits during works to ensure all measures were being undertaken to minimize environmental impacts.



*Removing a pile at Balmoral Jetty.
Source: Mosman Council*

Pittwater Council

Supporting Bushcare Volunteers

Council supports 28 registered Bushcare Groups in key reserves across the LGA, as well as Corporate Groups and local Backyard Bushcare residents. Bushcare groups are the backbone of efforts to maintain the environmental sustainability of our bushland areas. Council provides tools, training and an experienced supervisor to assist the groups.

Representative of Pittwater's Bushcare volunteer community, the Algona Reserve Bushcare Group, formed in 2004 are successfully restoring one of the hidden bushland secrets in Pittwater. Algona Reserve is located on the western slopes from Bilgola Plateau to the Pittwater foreshores at Newport. A main creekline runs through the reserve with Cabbage Tree Palm Forest and Littoral or Coastal Rainforest communities. On the north 'western slopes, the Pittwater Spotted Gum Forest (an endangered ecological community) occurs, and on the upper reaches of the reserve, an Angophora / Bangalay Forest vegetation community is dominant.

Degraded by dense weed infestation, illegal dumping and storm water pollution, the volunteers have made an impressive start in restoring the reserve. Some Algona volunteers also keep a detailed record of the native fauna using the reserve, with results showing a surprising abundance of species including Powerful Owls (an endangered species) being regularly sighted in the reserve.

Tackling Noxious Weeds

For the past five years, annual inspections of the regionally significant aquatic noxious weed, *Ludwigia peruviana* have been undertaken along Cicada Glen Creek that runs through Ingleside catchment. Due to the potential for flow obstruction and a reduction in habitat value, it is imperative that current infestations are regularly inspected and strategically suppressed and destroyed. Over time, the majority of landholders have become more receptive and pro-active toward strategically eradicating infestations along their stretch of creek and/or around dam perimeters. This action has resulted in a significant reduction in the density and spread of water borne propagules along this creek catchment that ultimately flows through Ku-ring-gai National Park to McCarrs Creek.

Collecting baseline data – Fairy Wren Survey

During the year, Pittwater conducted the first ever survey of one of the northern beaches favourite small birds – the Fairy Wren, with the help of a qualified ornithologist and a team of volunteers. The survey recorded a total of 51 birds, and yielded some encouraging results. The two species of Fairy Wren found locally are present at locations ranging from the Warriewood Wetlands to McKay Reserve in



Birdwatching Warriewood Wetlands. Source: Pittwater Council

Palm Beach. In contrast to what most scientists have assumed, Variegated Fairy Wrens were only found in mixed vegetation, whereas Superb Fairy Wrens were found in more open, simple habitats.

Educating our Children – Threatened Species Roadshow

Pittwater Council's Coastal Environment Centre this year developed and delivered a new program - the Threatened Species Roadshow, during Biodiversity Month in September. The program is offered to local primary schools and showcases the native fauna of the Pittwater area, the threats impacting their survival and how schools and households can help to ensure the long term viability of our fauna by being good "Backyard Buddies".

Warringah Council

Support for Bush Regeneration Volunteers

Additional support was provided for Warringah volunteers undertaking bush regeneration and weed control works in Council-managed bushland reserves. An additional staff member was employed to allow for an expansion of the program and increased levels of service to existing volunteer bushland groups. The program supports 250 volunteers at approximately 40 sites. In addition to this support, a propagation nursery at Manly Dam was established to supply volunteers with native plants required for regeneration works.



Warringah Bushcare Volunteer Margaret Inglis. Source: Warringah Council

Bushland Policy

Warringah adopted a Bushland Policy in June 2008. The policy seeks to secure and promote long term conservation of biodiversity and associated environmental values on public and private lands in Warringah. It also seeks to ensure bushland conservation and management issues are appropriately addressed and integrated with all activities including strategic land use planning and decision making. The policy codifies many of the existing practices Council undertakes when managing bushland on both public and private lands. It gives clear and transparent effect to these practices ensuring that members of the community are able to understand Council's practice in relation to bushland management.

Bushland Plans of Management

Two Bushland Plans of Management were adopted in June 2008 covering ten separate reserves with endangered vegetation. The main focus of the plans is to manage threats to the bushland and undertake restoration works involving weed-control, bush-regeneration and track maintenance. The consultation on the plans has resulted in a good balance between recreational and conservation interests, this was particularly challenging at Kinka Reserve and Terrey Hills Oval as a result of the recreational pursuits at these locations (horse riding and BMX bike riding).

Threatened Ospreys Breed in Warringah

Warringah is now home to NSW most southerly breeding pair of osprey after a chick was successfully fledged at Narrabeen. One of Warringah's 54 threatened species of fauna, ospreys are particularly vulnerable to the ingestion of fishing lines and hooks. Anglers were urged to take care as discarded fishing tackle is a major threat. Until recently, the furthest southerly breeding record for osprey on the east coast of Australia was at Lake Macquarie.

Wildlife Protection for Long Reef Headland

The Wildlife Protection Area at Long Reef now covers the entire headland including Long Reef Golf Club in an effort to protect native flora and fauna species and to link in with the Dee Why Lagoon Wildlife Refuge. Council continues to support the local bush regeneration group, Reefcare, who in partnership with Conservation Volunteers Australia put in over 852 volunteer hours. Their hard work removing bitou bush recently paid off with the re-establishment of a species long thought extinct within Warringah - *Canavalia rosea* which is a member of the pea family with a sprawling habit and lovely pink/violet flowers.



Black Swans and cygnets feeding at Manly Dam.
Source: Warringah Council



Spot-tailed Quoll, Warringah. Source: Warringah Council

6 Human Settlement



Source: Manly Council

This chapter reports on human settlements including population, noise and waste.

Improving, maintaining and balancing the diverse social, economic and environmental characteristics of the region are crucial in attaining a good quality of life for the community as a whole.

Local councils are responsible for urban planning, infrastructure, environmental restoration and protection, conservation of resources, provision of community facilities, and community services. Ecologically sustainable development practices are essential in managing and improving services and facilities and should include attributes such as culture, community involvement, facility access, employment opportunities, human health and safety. Community involvement on projects, including the opportunity for volunteering, creates and improves the sense of community for the area.

Human habitat indicators have been selected to measure and gauge local and regional issues of population pressures, noise complaints, waste generation and recycling.

6.1 Condition of our Human Settlement

Human settlement in the SHOROC region is characterised by a variety of land uses incorporating residential, commercial, industrial and open space areas. These highly modified environments are interspersed with remnant bushland and natural waterways, which contribute to the desirable character of the area.

The region has grown recently through development in growth areas, such as Warriewood Valley and Manly Vale. Higher density living and greater community interactions have both positive and negative implications. Negative implications include an increase in waste and noise affecting health and wellbeing. Positive implications include a greater sense of community.



Dogs Big Day Out. Source: Warringah Council

Regional Snapshot

Table 15: Regional Human Settlement Condition

Indicator	SHOROC Region	
	06/07	07/08
Estimated population at 30 June	263,134	265,666
Total waste to landfill, including general cleanup (tonnes)	58,178	60,237
Total waste to recycling including metal and green waste (tonnes)	57,252	60,064
Noise Complaints including general and barking dogs	3,143	2,946

Council Snapshots

Table 16: Population

Indicator	Manly		Mosman		Pittwater		Warringah	
	06/07	07/08	06/07	07/08	06/07	07/08	06/07	07/08
Estimated population of each LGA – at 30 June [#]	39,103	39,677	27,936	28,152	56,619	56,920	139,476	140,917
Residential density (persons per hectare)*	25.82	26.21	32.79	33.04	6.25	6.28	9.33	9.42

[#] 2006/07 population figures by LGA have been adjusted by the ABS since last year's SoE report. These ABS Preliminary Revised Estimates based on the 2006 Census have been included to replace previously reported figures for 2006/07. The 2007/08 population figures represent the most current ABS estimates based on the 2006 census for 2007/08, it is expected that these figures will be further adjusted by the ABS in the future. This explains the variation in figures between reporting years.

*Population density represents the average number of people per hectare. Residential density figures can be misleading as land included in the calculation may not be used for habitation e.g.: shopping centres, national parks, large bodies of water, industrial estates etc. As a result areas with large amounts of residential housing will have higher densities than those where large amounts of land is used for industry or open space.

Table 17: Noise

Indicator	Manly		Mosman		Pittwater		Warringah	
	06/07	07/08	06/07	07/08	06/07	07/08	06/07	07/08
General noise complaints received by council	40	90	50	79	186	92	730	825*
Barking dog complaints received by council	7	67	45	41	260	127	1,825	1,625*

* These figures for Warringah LGA are sourced from two information systems as well as anecdotal information due to a system changeover mid year. These figures may not be 100% accurate due to the reporting and recording mechanisms of the two systems. Pittwater's numbers under-represent the total due to changes in data management systems. The methodology will be revised in 2008.



Table 18: Waste

Indicator	Manly		Mosman		Pittwater		Warringah	
	06/07	07/08	06/07	07/08	06/07	07/08	06/07	07/08
Total waste to landfill including general cleanup (tonnes)	7,922	7,858	6,791	6,891	12,029	12,692	31,256	32,796
Total waste to recycling including metal and green waste (tonnes)	7,479	7,576	5,637	5,609	11,304	11,636	32,832	35,243
Total waste to landfill including general cleanup per capita (kg)	204	198	243	244	212	223	224	233
Total waste to recycling including metal and green waste per capita (kg)	193	191	202	199	200	204	235	250
Green waste diverted from landfill per capita (kg)	41	44	39	54	36	41	102	109
General cleanup sent to landfill per capita (kg)	22	22	16	16	20	36	33	35

Available data in Table 17 shows that noise complaints have increased generally across the SHOROC region.

These figures show that overall both waste to landfill and recycling have increased during this reporting period. Manly however, saw a decrease in waste to landfill in total and per capita figures. These general trends indicate increasing consumption despite growing awareness of environmental sustainability issues.

In previous years, Mosman’s recycling figure has included recycling from Mosman businesses. This service has been discontinued therefore Mosman’s recycling figure now only includes residential recycling.

6.2 Pressures on Human Settlement

All councils within the region face various pressures on their surrounding environment and communities, such as the pressures of waste, noise and congestion. These pressures impact on the state of our human habitat.

Waste generation is a pressure that is increasing due to growing populations, increases in development, higher use of plastic bags, higher use of packaged foods, illegal and incorrect dumping of waste and littering. This pressure contributes to a higher amount of waste that is sent to landfill.

Busy and congested urban living can create unwanted offensive noise that intrudes on people’s daily activities causing stress, affecting people’s health and even causing them to relocate. Noise pressures include construction noise, traffic noise, noise from residential air conditioners, mechanical and commercial plant, and barking dogs.

6.3 Responding to Human Settlement Issues

SHOROC Regional Planning

As part of the Sydney's Metropolitan Strategy, the NSW Department of Planning has issued draft sub-regional strategies under which local councils have been set targets for additional jobs and additional dwellings by 2031. Targets are:



Middle Harbour. Source: Warringah Council

Council	Employment target (additional jobs)	Additional dwelling target
Manly	1,000	2,400
Mosman	1,300	600
Pittwater	6,000	4,600 (plus Ingleside approx 4,900)
Warringah	12,500	10,300
Total	20,800	17,900 plus 4,900 Ingleside

The challenge for the SHOROC member Councils is to achieve and manage the growth that will be necessary to achieve these targets sustainably.

During 2007/08 SHOROC coordinated two studies that will inform plans for the future development of the area:

- SHOROC Transport and Land Use Strategy - Phase 1 and Phase 2. The Phase 1 report considers transport data and existing information, including travel patterns and mode share. The Phase 2 report considers transport options and their environmental impact and establishes criteria against which future transport options should be assessed, including sustainability criteria.
- SHOROC Regional Employment study documents existing employment in the region, identifies economic, social and environmental trends that may influence future employment and makes recommendations to enable sustainable employment and business growth.

Rather than adopt the recommendations of the report, the SHOROC Board resolved to prepare a regional strategy. The strategy will provide a process by which the targets can be considered alongside broader social, economic and environmental sustainability objectives and strategies. Work has commenced on the strategy, which is expected to be finalised in 2010.

Social and Affordable Housing

The need for social and affordable housing has prompted SHOROC to set up a working group to explore the options. Social housing will allow people who have been using emergency or assisted housing options to transition into more permanent housing solutions, whilst still remaining in the area. The need for affordable housing is closely linked to meeting future employment and service needs locally and to reducing travel demand.

Noise Management

Councils use a range of measures to ensure noise is kept at an acceptable level. Noise pollution is regulated under the *Protection of the Environment Operations (POEO) Act 1997*. Noise impacts are carefully considered during the development approval process and consents are appropriately conditioned to regulate and control noise. Noise requirements are also considered and included within planning instruments such as development control plans to reduce and control noise. Councils enforce the legislative requirements through Environmental Health or Compliance Officers who respond to noise complaints as they are received.



Companion Animal Education

Manly, Pittwater and Warringah separately host Dog Days and Mosman hosted a Pets Day Out. These events provide residents and visitors with a forum for companion animal social interaction. The events also provide Councils with a valuable opportunity to communicate with dog owners and raise awareness of responsible dog ownership such as minimising dog barking.

Waste Management and Minimisation

SHOROC member Councils all strive to encourage waste reduction and avoidance, prevent littering and illegal dumping, recover resources, and prevent and avoid hazardous materials. The region's growing population places further pressure on correct methods of waste disposal. To provide effective waste management, each council runs waste initiatives for their residents such as:

- Providing recycling bins and green waste bins for residents
- Providing worm farms and compost bins
- Providing residents with domestic waste calendars outlining residential, garbage, recycling, general and metal clean-up collection dates, and
- Promoting sustainable living and working

These, and other, waste management practices implemented by the SHOROC member Councils during 2007/08 aim to significantly reduce the amount of waste sent to landfill, increase the use of secondary resources (such as recycled products), reduce the use of toxic materials and products and reduce litter and illegal dumping.

Each month Warringah, Pittwater, Manly and Kimbriki develop a collaborative advertisement for the Manly Daily that addresses recycling or tips to minimise household waste. Previous topics have included information on paint tins, waste free Christmas, vegetation and light bulbs.

Kimbriki Recycling and Waste Disposal Centre

Kimbriki is operated as an unincorporated joint venture by a Joint Services Committee consisting of Warringah, Manly, Mosman and Pittwater Councils. The Centre is licensed to receive non-putrescible waste such as recycled materials and other dry wastes.

Recycling and re-use processes developed at Kimbriki result in only 27% of the 201,300 tonnes of waste material received at the site being landfilled. In 2007/08 Kimbriki recycled 64,000 tonnes of vegetation, 82,000 tonnes of concrete/brick and 1,300 tonnes of metal products with 54,000 tonnes of waste going to landfill.

During 2007/08 the SHOROC member Councils worked closely to establish a company to operate Kimbriki in the future. At the time of publication this proposal was awaiting the Minister for Local Government's authorisation for Manly, Mosman and Pittwater Council's to buy shares in the proposed company. In this new structure, options for minimising the amount of valuable resources going to landfill will continue to be addressed.

No Junk Mail Stickers

It is estimated around 120kg of junk mail is distributed to each resident in Australia each year. During 2007/08, Manly and Mosman Councils tackled the issue of junk mail filling up mail boxes, littering the street, and impacting on the environment with respect to aesthetics, excess use of trees, and potential waste to landfill. A 'No Junk Mail' sticker was sent to every resident in the effort to minimise the amount of junk mail that is distributed in these areas.

Rubbish Free Lunch Challenge

The Rubbish Free Lunch Challenge was implemented during 2007/08. It is an education program for schools to promote lunch time practices to reduce waste and increase resource recovery. Mosman was the co-ordinating Council for this program across the Northern Sydney Region. 4,578 Students from 15 Schools across Northern Sydney participated in the Challenge with successful results.

Delivering Local Responses

Manly Council

Second Hand Saturday

Second Hand Saturday is a program aimed at promoting reuse and repair by encouraging residents to host a Garage Sale prior to their general clean up, this program also has social benefits by encouraging neighbours to get together to organise a garage sale or street sale. Council supports residents by advertising their garage sale in the Manly Daily and providing posters to assist with promotion. Over the past year 130 residents participated which means goods that would otherwise end up in landfill have been acquired by someone else.



Second Hand Saturday. Source: Manly Council

Food & Wine Festival

Manly Council's annual Food and Wine Festival attracts around 30,000 people. The festival is an opportunity to provide waste information and encourage home composting. Each year Council collects organic waste for composting from the festival including leftover food, plates made from palm and cutlery from bamboo. To implement this effectively and to minimise contamination, around 100 bin monitor volunteers provided assistance during the festival. Council and the volunteers diverted a total of 80% of the waste from landfill from this year's festival. The Food and Wine Festival and Manly's Sustainability Fair were held concurrently.

Mosman Council

Mobile Recycling Bins & Bin Size Review

Council's mobile recycling bin rollout commenced on 1 October 2007. The existing recycling crates, collected manually by the waste contractor, were replaced with two 140L recycling bins (one for paper and one for comingled recyclables) collected by an automated system.

A review was undertaken in early 2008 of existing waste bin sizes used by residents. A new user pays system was introduced and is to come into effect as of 1 July 2008. The objective of the new system is to promote waste minimisation by encouraging residents to adopt a smaller bin size. Residents can nominate to reduce their bin size from a 240L bin to either a 120L bin or an 80L bin (which is the minimum size and Council's preferred option).



Mosman Mobile recycling bins. Source: Mosman Council

Public Place Recycling Trial

During 2007/08, the review on the feasibility of introducing a Public Place Recycling Program was completed. In accordance with recommendations from the review a Public Place Recycling Station trial was endorsed and the first public place recycling bins have been installed at Balmoral.



Public place recycling. Source: Mosman Council



Waste Education

Council developed a draft Waste Education Strategy to set out waste education principles, objectives and education actions to be undertaken to best achieve waste minimisation outcomes. The Strategy will be finalised in 2008.

During the Mosman Festival held in October and November 2007, Council introduced waste wise principles, making the Festival a waste wise event for the first time. During the Festival the community were also encouraged to visit the Waste to Art Tent which involved fun activities for children of all ages. Activities included environmental stencilling, stamping calico bags, making lid men from bottle top lids and making hats from recycled materials. The Waste to Art Tent was extremely popular with families and will be run again in 2008.

Pittwater Council

New Housing Option for Pittwater

Pittwater has made an amendment to the LEP to allow 'secondary dwellings' as a housing option for the local area. Secondary dwellings are small self-contained homes that are located on the site of a larger existing property. This move will help to address the increasing need for affordable housing choice for residents in Pittwater.

The main changes to the LEP include:

- That a secondary dwelling would be self-contained but not separately titled
- That a secondary dwelling could be located within, attached to or separate from the main dwelling, and
- That a secondary dwelling would have a maximum total floor space of 60 square metres or up to 20% of the total floor area, whichever was greater.

Newport Community Centre

Pittwater has started the development of a multi-purpose recreation centre at Newport. This development incorporates a number of ecologically sustainable development principles including:

- The re-use of some of the existing primary structure reducing demolition waste and the requirement for new building materials

- Passive solar design providing maximum use of natural light and cross ventilation
- Control of sunlight into the building through eaves and adjustable shades
- Installation of water tanks for rainwater storage and re-use
- Installation of waterless urinals and sensor taps, and
- Installation of solar panels on the roof.

Information and Resources for Schools

Council continued to strengthen its partnerships and alliances with local schools and support their efforts to integrate environmental sustainability practices through the school curriculum and teaching programs. Staff from across Council assisted the Peninsula Community of Schools with their 'Inspiration Day', Bilgola Plateau Public School with their Sustainable Schools Audits in energy, water and waste, Newport Public School with their 'Go Green Day' and Narrabeen North Public School with their waste audit and 'Go Green Day'.



Kooroowall Saltmarsh Jan 2008. Source Pittwater Council

E-Waste Collection

At the beginning of 2008, Council organised an E-waste collection for old equipment such as personal computers and monitors, printers, faxes, cables. In total 2 tonnes of E-waste and 58 kg of cables were recycled, as well as some old equipment being upgraded and donated to schools and charities.

Warringah Council

Waste Education

Food waste constitutes 40% of waste going to landfill, so a major campaign to avoid and reduce food waste was implemented in Warringah. Residents received leaflets with tips on how to save on food costs, avoid food waste and recycle food waste at home with the opportunities to win one of 22 worm farms or compost bins. Educational workshops and displays were held throughout Warringah and worm farms installed as a community project in four childcare centres.



Waste education workshop at Warringah Council's World Environment Day Expo. Source: Warringah Council

Chemical Collections

The Chemical CleanOut collections continue to be popular, with residents keen to rid their homes of dangerous and unwanted chemicals in a responsible manner. The collection held in September 2007 yielded 49,156.6 kg, with 1,675 people attending. Paint continues to constitute the main type of material collected at 61% with batteries and oils each representing 11%.

Taking Sustainability to the Streets

Warringah Council launched its new EcoVan in early 2008. The EcoVan is a Mercedes Vito capable of running on bio diesel and has been specially fitted out as a display vehicle to be used to undertake environmental education in Warringah. Its exterior is designed with colourful artwork to encourage people to think about sustainable living. The EcoVan is used at shopping centres, schools and events as part of Council's environmental promotions.



Warringah's new EcoVan will be run on biodiesel. Source: Warringah Council

Reaching Out to Non-English Speakers

Six interactive sessions were held with over 120 students studying English at Northern Beaches TAFE. The focus was on the how and why of avoiding and separating. Fun bin relays were the most popular action learning technique. Students also went on a trip to the Chullora Waste and Recycling Centre, to see what happens to items sent for recycling and participated in a reuse workshop making gift cards.

Travelling the Roads

Two bus-back advertising campaigns were held to amplify waste messages. The "Dumping is Dumb" campaign was run in conjunction with other councils and "Your recycling makes stuff" was run during national Recycling Week in November 2007.

Collaborative Ads the Tip of the Fortnight



Waste Tip Ad. Source: Warringah Council

Regular evaluations demonstrated that the 26 fortnightly quarter page ads, produced by Warringah, Manly and Pittwater Councils and Kimbriki, continue to be a popular information format. Each ad features local residents with their waste tip on avoiding waste and recycling.

7 Aboriginal and Non-Aboriginal Heritage



Learning Aboriginal dance at Warringah's World Environment Day Expo. Source: Warringah Council

Heritage is defined as places, objects, customs and cultures that have aesthetic, natural, historic or social significance or other special values for present and future generations (Australia ICOMOS, 1999).

Remnants of Aboriginal heritage sites including occupational, ceremonial and midden sites can be found on public and private land where disturbances and development has been limited. Non-Aboriginal heritage refers to use of the land since European settlement. Heritage sites include oldest commercial/industrial and iconic architecture still present and military heritage in the SHOROC region.

Heritage indicators have been selected to measure and gauge both Aboriginal and Non-Aboriginal heritage in the SHOROC region and within individual council areas.

7.1 Condition of our Heritage

At the time of European settlement, the vast area of land stretching between what is now known as Newcastle through to the southern-most part of modern Sydney was home to the Guringai people. Evidence of Aboriginal occupation includes rock engravings, rock paintings, shell middens, axe grinding grooves, sites of religious significance and various occupation sites. Aboriginal items and culture have been lost or damaged since European settlement, however today some items and sites of cultural and heritage significance to Aboriginal and Torres Strait Islander people still remain.

Non-Aboriginal settlement has also left a rich heritage in the area including historic sites, modified and built environments with community values, such as townscapes, buildings, roads, and aspects of our current multicultural society involving ethnic traditions, cultural events, national, state, and local symbols, artworks, craft, and literature.



Source: Manly Council



Thulli Dreaming at Warringah's World Environment Day Expo. Source: Warringah Council

Regional Snapshot

Table 19: Regional Aboriginal and Non-Aboriginal Heritage Condition

Indicator	SHOROC Region	
	06/07	07/08
Total number of Aboriginal Heritage Sites (including National Parks)	1,002	1,018
Total number of Non-Aboriginal Heritage Items	1,027	1,033
Heritage conservation areas	20	20

Council Snapshots

Table 20: Aboriginal Heritage

Indicator	Manly		Mosman		Pittwater		Warringah	
	06/07	07/08	06/07	07/08	06/07	07/08	06/07	07/08
Number of Aboriginal Heritage Sites	110*	112*	107	107	322	334	463	465

*Does not include sites within National Parks.

Table 21: Non-Aboriginal Heritage

Indicator	Manly		Mosman		Pittwater		Warringah	
	06/07	07/08	06/07	07/08	06/07	07/08	06/07	07/08
Total Number of Non-Aboriginal Heritage items	306	312	478	478	101	101	142	142
Breakdown: Number of built items	194	199	437*	437*	69	69	102	102
Number of landscape items	78	79	34*	34*	20	20	36	36
Number of archaeological items	34	34	16	16	7	7	2	2
Heritage conservation areas	2	2	11	11	5	5	2	2

* Some items are classified as both built and landscape items, therefore the breakdown figures add up to a number greater than the total number of items.

Over the SHOROC region there has been an increase in known Aboriginal Heritage sites with the discovery of new sites in Manly, Pittwater and Warringah. This represents a positive trend for the protection of Aboriginal heritage in the area.

The Aboriginal Heritage Office has reported 16 newly identified sites in the SHOROC region including one shelter/art site and one midden site

in Warringah LGA, two midden sites in Manly LGA and 12 new sites in Pittwater.

The number of non-Aboriginal heritage items has also slightly increased since last year, due to an increase in non-Aboriginal heritage items identified in the Manly LGA. This represents a positive trend for the maintenance and protection of non-Aboriginal heritage in the SHOROC region.



7.2 Pressures on Our Heritage

Pressures on Aboriginal heritage include low awareness of Aboriginal heritage and the importance of place to the Northern Beaches Aboriginal community, natural processes such as wind, water, erosion and fire, and human related processes including urban development, recreation and vandalism.

Pressures on non-Aboriginal heritage include low awareness of built and natural heritage, destruction, deterioration and unsympathetic restoration of built heritage and the impacts of natural processes and urbanisation degrading landscape heritage items.

Overuse of sites by tourists and lack of funding to maintain heritage items place additional pressure on the SHOROC region's heritage.

7.3 Responding to our Heritage Issues

Guringai Festival

The Guringai Festival is a cultural celebration of local Aboriginal heritage. It was initiated in 2001 to raise awareness of the unique needs of Aboriginal and Torres Strait Islander people living in the Northern Sydney region and to give the wider community opportunities to engage with Aboriginal culture. The festival committee included ten Councils working in partnership with local reconciliation groups and includes the four SHOROC member Councils.

The Guringai Festival received a Highly Commended project award in the 2007 Local Government and Shires Association Cultural Awards.

The 2008 Guringai Festival's theme was "2008: Year of the Apology" and it included nearly 40 events between 26 May and 13 July. As part of the festival, Warringah Council ran an Indigenous Art Workshop with local artist Jessica Birk for year 6 students at the new Gawura Centre. Warringah Council also hosted a community evening with the Indigenous artist Malcolm Jagamarra. Manly Council held a launch which included Welcome to Country, a smoking ceremony, community choir and musical performances by indigenous artists as well as children's art activities.

Aboriginal Heritage Office

The Aboriginal Heritage Office (AHO) is a joint initiative of Manly, Pittwater, Warringah, North Sydney, Lane Cove, Willoughby and Ku-ring-gai Councils and is supported by the Heritage Branch of the NSW Department of Planning and the DECC.

The responsibility of the AHO is to monitor Aboriginal sites, develop long term management reports to ensure their protection, involve both Aboriginal and Non-Aboriginal people in discussions concerning heritage issues, communicate with schools and other groups to educate the community in understanding and appreciating the unique culture of Aboriginal people.

The AHO gives heritage advice on development applications to ensure Aboriginal cultural sites are adequately protected and continues to coordinate training for council staff, primarily those involved in the development of assessment processes.

A grant funded series, by the Heritage Branch of the Department of Planning continued in 2007/08 with 16 events taking place in addition to regular visits to teach Indigenous games to students at Stewart House School. The AHO received Federal Government funding through the Indigenous Heritage Program for a project to review the promotion and user pressures of Aboriginal heritage along the foreshores of Northern Sydney. The AHO also developed two brochures for the Manly area, 'Gayamagal Country', funded by the Heritage Office.

The new Aboriginal Heritage Office Education Centre and Keeping Place was officially opened in Northbridge in March 2008.

Aboriginal Site Management and Monitoring

Pittwater's Aboriginal Site Management Plan was completed during 2007/08 and work commenced on the Aboriginal heritage potential areas mapping.

As part of regular monitoring and in response to reports from Council staff and the public 16 new sites were identified in the area during 2007/08 (see above).

The AHO produced a report in 2007/08 prioritising sites for site conservation works. Site conservation works have been instigated for a number of sites across the region, including:

- Manly: boardwalk, midden protection at two sites, bush regeneration strategies for three sites
- Pittwater: midden protection at one site, bush regeneration and track works strategies at four sites, and
- Warringah: midden protection at two sites, engraving protection at one site, track works at two sites.

Volunteer Monitors

The AHO also received Federal Government funding in 2007/08, through the Indigenous Heritage Program, for a project to establish an Aboriginal 'Site Care' volunteer monitoring program. Volunteers were trained in Aboriginal heritage site management and a network of Site Care groups was established throughout the region to provide regular monitoring and care of specific Aboriginal sites. The first phase of this project has been completed successfully, with over 50 volunteers trained and actively monitoring sites in the local area.

Resources

An important part of the role of the Aboriginal Heritage office is to enhance appreciation of Aboriginal culture in the wider community. Numerous resources are available for free download from the AHO website www.aboriginalheritage.org



Aboriginal rock carvings Kuring-gal National Park.
Source: Warringah Council

Delivering Local Responses

Manly Council

Aboriginal Midden Protection

Manly Council has constructed a walkway to protect an important Aboriginal midden on the Sandy Bay section of the Manly Scenic Walkway.

Manly's Sustainable Heritage Conservation Plan

In 2007 council commenced a comprehensive review of its heritage listings, strategies and policies. The aim of the Sustainable Heritage Review is to assess the values of Manly that should be protected so that both present and future generations will also be able to enjoy Manly as we do today. The review has been undertaken by a team of expert heritage specialists with significant input from Manly's community.



Heritage Architecture. Source Manly Council

One of the recommendations was for several new conservation areas in the local government area. Council put these areas on public exhibition for comment and received a large number of objections to the proposed conservation areas. In light of the issues raised by the community, Council is currently investigating alternatives to protecting the character of Manly.



Mosman Council

Partners in Preservation Project

American Express and the National Trust formed a partnership to implement the Partners in Preservation Project. The project identified nine historic sites in Sydney in need of funding for restoration works - three each from the Mosman, Waverley and City of Sydney Council areas, and set up a voting competition for individuals to vote for their favourite historic site. Mosman Council promoted the program and Clifton Gardens Pool as an important local heritage site. Clifton Gardens was voted as second runner up, and received a grant of \$40,000 to restore the wharf structure at Clifton Gardens Reserve.

Local Heritage Assistance Fund

In 2007/08, Council's Local Heritage Assistance Fund was offered to Mosman residents with heritage properties. Council called for applications, from owners of Mosman heritage properties during September 2007 and February 2008, detailing small conservation / restoration projects worthy of funding assistance. A number of worthwhile projects were assisted through the fund, and have recently been completed adding to the conservation value of Mosman's heritage.

Curlew Camp Artists Walk

An interpretation study for the Curlew Camp Artist walk at Little Sirius Cove was completed in mid-2008. This project has improved public access along the foreshore of Sydney Harbour and provides an interesting walk incorporating heritage interpretation signage which tells the fascinating story of the prominent Australian artists of the 1890s who lived in the artists' camp and developed a contemporary approach to painting outdoors.



Curlew Camp Artists Walk. Source: Mosman Council

Conservation Plan of Management

The final draft of the Conservation Management Plan for Boronia and its Surrounds was completed in mid-2008 following the community and staff consultation process. The Conservation Management Plan contains a number of conservation policies and objectives for the appropriate management of the historical Boronia House and heritage aspects of the surrounding grounds. The feasibility of establishing a community garden in the grounds behind Boronia House has been included in the Plan.

Pittwater Council

Pittwater Heritage Festival

The theme of this year's Heritage Festival in April was "Our Place". The focus of this festival was on local residents' insights into how life in Pittwater has changed over the years. The festival program included a number of activities such as an evening sharing local tales of life in Pittwater's offshore communities, a discussion on the colourful history of the Warriewood Valley community and a guided walk through the Warriewood Wetlands with a local historian, Sandra Blamey.

Aboriginal Family Picnic Day

As part of the ongoing commitment to providing increased links with the indigenous community a family picnic day was held at Flying Fox Park in Mona Vale. This event aimed to increase indigenous connection to culture and heritage. Over 80 indigenous people attended the day where they learnt cultural games and were trained and accredited to pass these games onto other people.

Aboriginal Heritage Bush Tucker Walks

To raise awareness of the Indigenous people of the Narrabeen Area, Council conducted three guided walks led by the AHO, including a Bush Tucker Walk attended by over 30 people on Narrabeen Headland. The Headland was a valuable source of food resources for indigenous people, providing an abundance of edible plants, bulbs, grasses and seeds as well as being an important penguin and shearwater rookery with a myriad of shellfish on the rock platform below.

Preserving the Heritage Values of Currawong

Council has been advocating for the heritage listing of Currawong, a site of State Heritage significance for many years. In November 2007, the NSW Heritage Office recommended that the Currawong site be listed on the State Heritage Register. The Minister has not yet gazetted this proposed listing. In late 2007 a development proposal was lodged with the State Government for development of Currawong which many in the Pittwater community feel would compromise its heritage significance. Council has been actively involved in making submissions to ensure that the heritage significance of this unique site is preserved.

Heritage Advisor Service

Council has continued with its Heritage Advisor Service, with the services of an expert heritage architect available to owners of heritage properties. His expertise was also used extensively by Council in the assessment of development applications which affected heritage properties.

Warringah Council

Reconciliation Action Plan

Warringah Council's first Reconciliation Strategy was adopted in 1998. To mark its tenth anniversary and the Apology to the Stolen Generations by the Prime Minister in February 2008 a new Reconciliation Action Plan has been written. The new Plan is in keeping with Reconciliation Australia's framework, and represents a first for Local Government in NSW. Only two other councils in Australia have so far developed such plans – Melbourne City and Moyness Shire Councils.

Warringah's Plan was prepared in close collaboration with Aboriginal and Torres Strait Islander residents, Reconciliation Australia, and a number of Indigenous agencies. The Plan recommends a range of actions for further reconciliation in the local area and to enhance Council's services, ceremonial practices and employment practices to enable greater participation of local Aboriginal and Torres Strait Islander people in the life of Warringah and its Council. The Plan is expected to be endorsed by Reconciliation Australia for promotion as an example of good practice in local government.

Sister City Exchange Programs

Each year, Warringah Council participates in two Sister City exchange programs. One is with the remote NSW town of Brewarrina, and the other with Warringah's Sister City of Chichibu in Japan. The programs are pivotal in building close ties between the different regions and are an opportunity for local students to experience a lifestyle, culture and environment that is different to their own.

In January 2008, students from Brewarrina took a break from the high summer temperatures of the outback, to experience the ocean and discover the natural and man-made beauty of the northern beaches and its surrounds. They discovered what aspects are shared and what are different about the two diverse communities. In July 2007, a group of young people from Warringah made the annual trip to Brewarrina, which helped participants to gain a better understanding of life for young Indigenous Australians and an appreciation of rural Australian communities. Warringah Council won the 2008 National Sister Cities Award in the 'Best Publicity by Print Media' category for the Brewarrina Youth Exchange program.

In August 2007, students from the inland mountainous city of Chichibu in Japan visited Warringah for two weeks and stayed with local families. They participated in school classes and a range of activities including canoeing in Middle Harbour, viewing Aboriginal heritage sights in Kuring-gai Chase National Park, and a surf safety lesson at Freshwater Beach. The Chichibu students also performed in traditional dress at the Oxford Falls Peace Park Anniversary Celebrations.



Warringah's Chichibu Sister City Students.
Source: Warringah Council

8 Towards Sustainability

There are many definitions of the word 'sustainability' but it essentially means being able to meet the needs of the present without depleting resources or harming natural cycles for future generations. Planning for environmental sustainability provides a framework which links economic, social, environmental and governance matters with natural resource management. It is essential because a healthy environment underpins a productive economy and a healthy society.

The awareness and action of the community are vital in achieving sustainable outcomes. The SHOROC member Councils are increasingly providing a facilitation role in organising and involving their organisations as well as the community and businesses in environmental programs for sustainability. Under the *Local Government Act (1993)* Councils are required to consider the principles of sustainability in decision making processes. Each council has adopted a number of means to ensure council operations are moving towards sustainability. Each year, councils prepare a Management Plan that identifies what they will do over the next four years in terms of social, economic and environmental outcomes.

Councils also run a large number of programs for the community aimed at achieving environmental sustainability in a range of issues such as water conservation, bushland and biodiversity management, sustainable transport, energy reduction, waste avoidance and minimisation.

Each of the previous chapters contain information to highlight how the region is moving towards sustainability, and this chapter builds on that information by providing further detail on community and corporate action for sustainability.

8.1 Responding to Sustainability Issues

Eco-Schools Grants

Each year Manly, Pittwater and Warringah Councils provide funding to schools for environmental projects as part of the Eco Schools Grant Program. Schools can apply for funding of up to \$1,500 per school (Manly), \$1,000 (Pittwater) and \$2,500 (Warringah) for the development and implementation of a wide range of environmental projects including establishment of vegetable or native gardens, installation of rainwater tanks or environmental excursions. In 2007/08, Warringah Council provided over \$45,000 to 18 local schools, and Manly is engaging with many local schools to finalise their grants. Warringah's Environment and Stormwater Special Rate (ESSR) funds the program and over the past ten years Warringah Council has given local schools over \$350,000.

Ocean Care Day and Human Sign

Manly Council celebrated Ocean Care Day 2007 at North Steyne Beach, supported by Warringah, Mosman and Pittwater Councils. The theme was 'melting ice'. Council hosted the National Launch of the Life Saving Energy campaign in partnership with the award winning Clean Energy for Eternity group from Tathra and North Steyne Surf Club. A human sign of 6,000 people from churches, schools and the community formed the words 'Life Saving Energy' on North Steyne Beach. MC Wendy Harmer officiated and also launched the first of Manly's Solar Surf Clubs on the steps of North Steyne Surf Club.



Life Saving Energy Human Sign. Source Manly Council

Delivering Local Responses

Manly Council

Sustainability Strategy

Manly Council continued to implement the 2006 Manly Sustainability Strategy – For Today and Future Generations during 2007/08. The Strategy's principal objective is to integrate social, economic and environmental considerations of sustainability and direct council's initiatives to enable the people of Manly to live and work in harmony with their environment.



Manly Ocean Care Day. Source: Manly Council

Hill to Harbour Tours

Manly Council has run a series of free, expert-guided, environment and heritage tours around the Manly LGA under the popular Hill to Harbour Tours program since 2004. Tours include a free lunch or morning tea and a native plant giveaway. Due to community demand, the program was expanded in late 2007 to include more frequent tours (monthly) and five new tour routes. Highlights this year included a kayak tour from Manly Cove to Cannae Point and a Heart of Manly heritage tour. Two hundred and ninety nine people participated in the tour series in 2007/08.



Hill to Harbour Kayak Tour. Source: Manly Council

Fair Trade

Manly Council has been working towards becoming accredited as a Fair Trade Community since August 2005 by promoting local support of Fair Trade products. During 2007/08 Manly Council ran its second Fair Trade Christmas Markets and conducted a Fair Trade Information Session for schools and the community. The Information session resulted in the engagement of 10 volunteers to act as 'Fair Trade Consultants' to encourage local restaurants and cafes to use Fair Trade coffee and tea.

A Fair Trade Working Party was formed in June 2008, to recommend ideas for the promotion of Fair Trade in Manly, suggest goals for the program and to ensure continued commitment from Council to achieving Fair Trade Community status for Manly.

Manly Sustainable Business Awards

The Manly Sustainable Business Awards program was conducted for the first time in 2007. It is a new initiative that expands on the annual Green Business Awards program that has been run by Council for the past 11 years. Manly Sustainable Business Awards looks at business management across the triple bottom line: social, economic and environmental. The aim of the Awards program is to promote corporate responsibility within the local business sector and provide community acknowledgement for outstanding sustainable business management. In 2007 awards were offered under five categories: Water Use Management, Waste Management, Energy Efficiency, Contribution to Local Community and Excellence in Sustainable Business Management.

Manly Sustainability Fair 2008

In 2008 Manly Council held its second Sustainability Fair alongside the Manly Food and Wine Festival on Manly's Ocean Beach. 'Solar and Water' was chosen as the theme for the event.

The primary aim of the Manly Sustainability Fair event is to showcase technologies and practices, and local products and services that assist people to understand and implement sustainability into their everyday lives. Thousands of people attended the event in 2008.



Manly Environment Centre (MEC)

The Manly Environment Centre (MEC) shopfront started in 1991 as a unique combination of community, Council and local corporate sponsors. As the first national suburban environment centre it is well established as a pro-active organisation dedicated to the health of the local environment. An action and education based centre, it houses possibly the largest collection of environmental education materials accessible to the community in Australia.

Over the last year the MEC has organised numerous educational programs, events and projects to protect and enhance the environment and to inspire and lead the community towards sustainability. During 2007/08 these activities engaged hundreds of local residents, overseas visitors, local tourists, day trippers, students and children.

Mosman Council

Sustainability Workshops

Council has planned and organised a number of community sustainability workshops to raise community awareness of environmental issues and how members of the community can live a more sustainable lifestyle by making simple behaviour changes and implementing sustainability measures around the home. Workshops include the Sustainable Business Workshop aimed at Mosman Businesses.

Sustainable Living Expo

Council held its Sustainable Living Expo in August 2007. The Expo included stalls, information displays, product displays, demonstrations, talks and workshops on various sustainability topics including 'how to reduce your ecological footprint', 'ethical investment', 'sustainable seafood' and much more. The film 'Who Killed the Electric Car' was screened during the event, and environmental activities and entertainment were provided to ensure an informative and fun day for the community. The community were invited to attend the event using sustainable transport modes, and joined in the sustainable transport competition to win great prizes.

Green Christmas Stall

At the Mosman Christmas Markets in December 2007, the Environment Team set up a Green Christmas Stall, providing displays, free calico bags, free plants, competitions and giveaways, and information about ways to reduce waste, recycle Christmas trees, utilise sustainable products, and purchase environmentally friendly gifts over the Christmas period. In conjunction with the stall, all shops were given the opportunity to request a Santa cut-out to place above their shops on the main street in support of the Christmas festivities. In 2007, Santa went green with his sack coloured green to pass on the green Christmas message to shoppers.



Eco-Christmas Display Civic Centre. Source: Mosman Council

Mosman Climate Challenge

Mosman Council partnered with the Nature Conservation Council of NSW to implement the Mosman Climate Challenge from January to June 2008. Mosman was the first suburb in the Sydney Metropolitan area to take part in the Climate Challenge.

The Mosman Climate Challenge was a huge success. Over 400 Mosman residents registered to take part in the program, and actively changed their behaviour and implemented measures around the home and beyond their backyard, to reduce their greenhouse gas emissions and impacts upon the environment. Participants attending the final Awards Night in June 2008, successful in completing the Challenge, were awarded as Challenge Champions.

Heydon Street and Raglan Street were awarded Best Street for the number of active participants implementing the challenge in that street. Both streets were provided with a street sign to commemorate their achievement.



Climate Challenge - best street sign. Source: Mosman Council

Mosman Sustainability Advisory Group

Mosman's Sustainability Advisory Group had a successful year during 2007/08. The Group discussed issues relating to all aspects of sustainability. The Group set up sub-groups for waste, biodiversity, energy, transport, water, and community engagement/education, and set themselves tasks to complete within those sub-groups. Information and ideas from the sub-groups were reported back to the main group, and good realistic advice and recommendations were put forth by the group to Council, many of which have been taken on board and implemented or considered for inclusion in Mosplan for 2009.

Pittwater Council

Pittwater 2020 Strategic Plan Launched

Over a two year period the community and council collaborated to develop Pittwater's 2020 Strategic Plan – Our Sustainable Future, which was adopted in April 2008. The Strategic Plan seeks to embed sustainability within the organisation and the community at large through community developed key directions, goals, strategies and actions to implement them, along with measures to track progress. The Council's Management Plan is being restructured into alignment with the Strategic Plan to ensure that the outcomes are delivered.

Sustainable Purchasing

Currently Council spends over \$35 million each year, on everything required to service the local community and care for our environment. Our aim by 2020 is to encourage sustainable business practices throughout the organisation. Council will increasingly choose products and services with a demonstrated track record in environmental sustainability, as well as minimising waste and unnecessary expenditure. To achieve this, a range of projects are being implemented. During the year, Council:

- Developed and adopted a Sustainable Purchasing Policy
- Joined the Local Government & Shires Association's Sustainable Choice Program
- Entered a new contract which will include the use of 100% Australian produced recycled paper and stationery products. Vegetable based inks will also be used in all our printing.

Coastal Environment Centre

The Coastal Environment Centre is a regional community environmental learning centre, and a facility of Pittwater Council. The CEC commenced operations in 1990 with a mandate to deliver environmental education about sustainable management of the coastal environment to the people of New South Wales, using the natural ecosystems of the Narrabeen area – the lagoon, the beaches, the rocky shores, the wetlands and the bushland. In 2007/08, the CEC delivered environmental education, information and referral services to 17,082 people.



Local Climate Change Learning Community launch at the CEC. Source: Pittwater Council



Narrabeen Eco-Paddle Deep Creek. Source: Pittwater Council

Water Re-use and Harvesting at Sydney Lakeside Caravan Park

Council is undertaking a major three year project to install water savings fixtures such as shower heads and basin control devices at Sydney Lakeside Caravan Park. Roof water will also be collected from amenities blocks and buildings for use in flushing toilets and watering gardens. The project includes a stormwater harvesting component for use in irrigation. This project will result in a saving of 14 million litres of drinking water each year.

Warringah Council

Sustainable Design and Management of Council's Built Assets

In October 2007 Warringah Council adopted an operational management standard for the sustainable management and design of council's buildings. This guideline sets minimum energy and water standards for new buildings such as community centres and amenities blocks. It applies known industry rating systems for fixtures, appliances and buildings, such as Greenstar to achieve efficiencies.

Green Procurement Award

Warringah Council won a 2006/07 Excellence in the Environment Award for the "Warringah Council - Sustainable Procurement Strategy". The award recognised Council's outstanding environmental achievements in the area of procurement.

World Environment Day Community Expo - 25 May 2008

For the third year, Council World Environment Day celebrations encouraged skill development and action in the community toward sustainable living. An estimated 15,000 people attended the Expo to enjoy a series of workshops covering climate change, Aboriginal heritage, keeping chickens, rainwater harvesting, green cleaning and sustainable purchasing, solar energy, eco home renovation, ecological living and composting, growing native plants and building wildlife-friendly gardens. A women's fashion and clothing swap was held during the event and was very enthusiastically attended.

World Environment Day Youth Expo 2008

Held at James Meehan Reserve, Dee Why Beach, the Expo aimed to assist students, teachers and school communities to understand and participate in sustainable environmental practices in all aspects of their lives. Approximately 1,300 year 5 and year 6 school students and 60 teachers attended. Twenty-five different workshops were offered, covering topics such as catchment management, bushland management, sustainable transport, renewable energy, wildlife conservation, sustainable purchasing and native gardening.



Six of the 1300 students attending the World Environment Day Youth Expo. Source: Warringah Council

Sustainable Community Centres Program

Warringah's Brookvale Children's Centre underwent an eco-transformation in early 2008. Utilising the Council-developed Sustainable Community Centres – How to be an Eco-friendly Centre kit, the Centre made significant eco-improvements including auditing their waste, water, energy and chemical use. They developed their own Environmental Action Plan and made changes including installing a worm farm, building a food garden, retrofitting all toilets, eliminating chemical cleaning products from the Centre, switching to an email newsletter for parents, educating the staff and children, and switching to recycled paper products and environmentally friendly office products. Simply by retrofitting the Centre's six toilets, a saving of 18% of the daily water usage was made.



Brookvale Children's Centre food garden. Source: Warringah Council

Hilltop to Headland Lecture and Workshop Series

Over 800 residents enjoyed the twelfth year of the popular Hilltop to Headland Environmental Lecture Series. Once more, the free lectures were complemented by a hands-on workshops which enabled residents to put their learning into practice. This Hilltop series covered a wide variety of topics including bird watching, building frog ponds, sustainable fashion and rainwater tanks.

Council News Goes Green

Warringah launched a brand new electronic environmental newsletter called 'EcoNews' which replaces the previous paper versions of WEEN (Warringah's Environmental Education Newsletter) and Friends of the Bush. The email newsletter will enable Council to save thousands of dollars each year on printing and delivery, saves thousands of sheets of paper and carbon emissions from postage, and contributes to Council's goal of becoming more sustainable. People can subscribe to this quarterly newsletter at www.warringah.nsw.gov.au (click on the EcoNews link).

Kids Care Calendar

The 2008 Warringah Kids Care Calendar was the sixth annual environmental art competition for primary school students. Students were asked to design a poster and write a short narrative to highlight how we can all work together to protect the environment. In 2007, Council received nearly 1,000 entries and selected 15 posters and 12 narratives to form the calendar. The completed calendar was distributed to all Warringah families with students in years K-6.



Kids Care Calendar Winners 2008. Source: Warringah Council

9 Future Directions

The Department of Local Government has produced proposed changes to the ways in which councils plan and report their activities. It has produced and consulted widely on a discussion paper that advocates integrated planning.

Final details are not yet available however it is understood that there will be a hierarchy of plans that are to be prepared by each council:

- A Community Strategic Plan with a 10 year plus timeframe
- A deliverable plan with a four year timeframe that sets out interim measures to achieve the goals in the Community Strategic Plan, and
- An Operational Plan and annual budget will set the actions that councils intend to take during each year that will contribute to the achievement of the deliverable and community strategic plans.

Each plan is to be developed within a sustainability framework. Councils will be required to provide resource plans and set out how they will measure their achievements against the plans.

While the Exposure Draft and guidelines that provide the details of this new planning and reporting framework are not yet available, it is understood that the current requirements for reporting on the state of the environment and on council activities to address the environment, as a separate document, will be phased out. It is likely that the requirement for preparation of SoE reports will be phased out following the preparation of the 2008/09 report as each council prepares and adopts new plans in accordance with the new integrated planning and reporting framework.

While the new planning and reporting framework will be different, the obligation of councils to plan and report on environmental matters will remain. Plans at each level will be required to address environmental issues and the plans will operate within an overall sustainability framework.

In March 2008 the SHOROC Board resolved to prepare a strategic plan for the SHOROC region. This plan will be consistent in its approach with plans required by the *Local Government Act (1993)* and will include regional environmental matters. SHOROC is working closely with individual councils to ensure that the regional plan and local plans provide a consistent and comprehensive approach to all matters, including the environment.

Regional Recommendations

This report has shown that key issues across the SHOROC region include:

- Climate change adaptation and mitigation
- Public transport and traffic congestion
- Biodiversity corridor linkages
- Waste avoidance and reduction
- Reduction in water and energy use.

It is recommended that these issues be the priority focus areas for SHOROC member Councils in management planning in the immediate future.

A further recommendation is that SHOROC member Councils identify a key set of environmental sustainability indicators to enable both local and regional trends to continue to be reported on a meaningful basis. This recommendation is made in light of uncertainty over the structuring of environmental and sustainability reporting for local government in the future, presented by pending changes to each of the member Councils' community and strategic planning as described above.

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