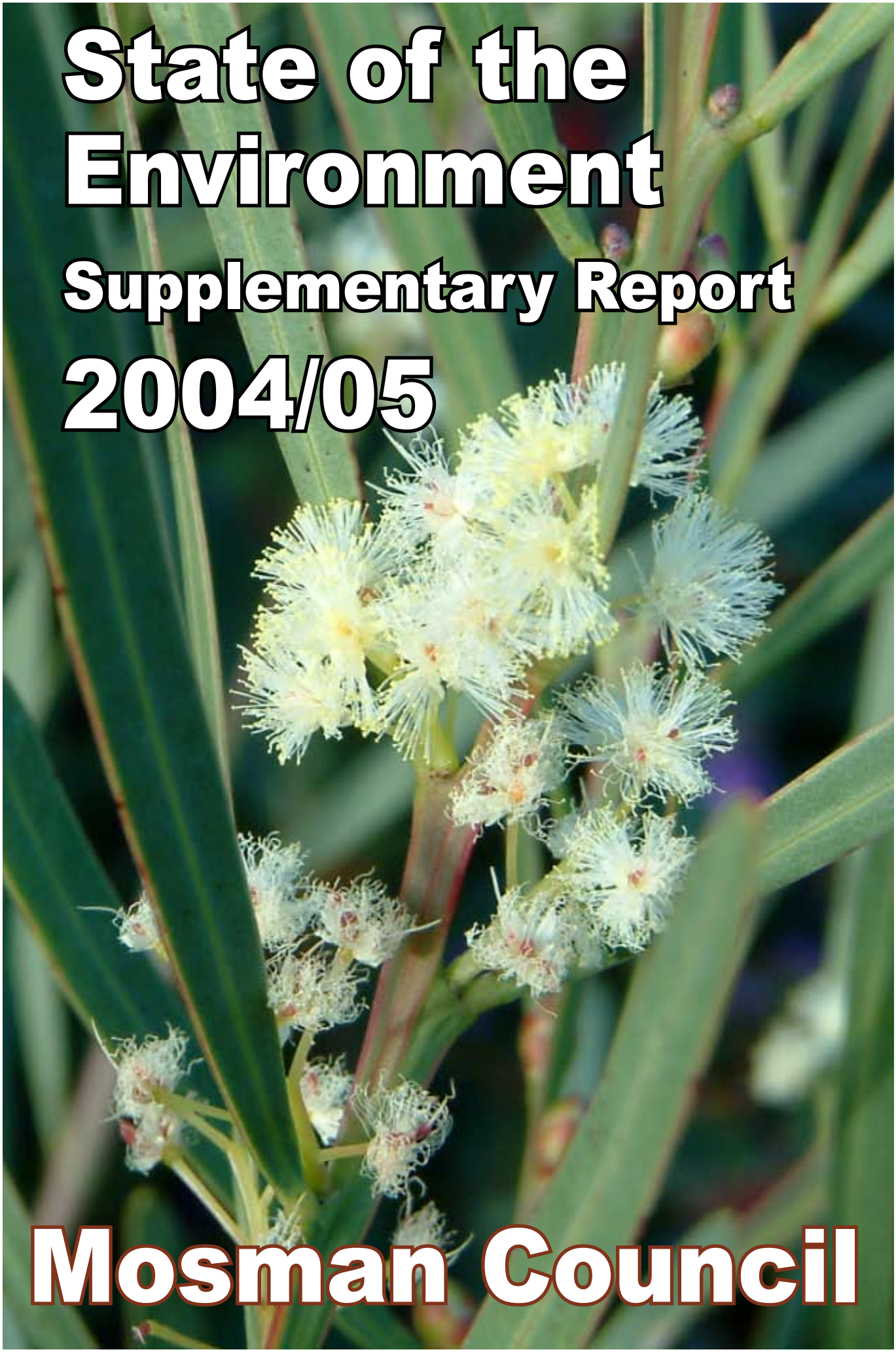
State of the Environment

Supplementary Report

2004/05



Mosman Council

Mosman Municipal Council

Supplementary State of the Environment Report 2004/05

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Mosman IS Environment

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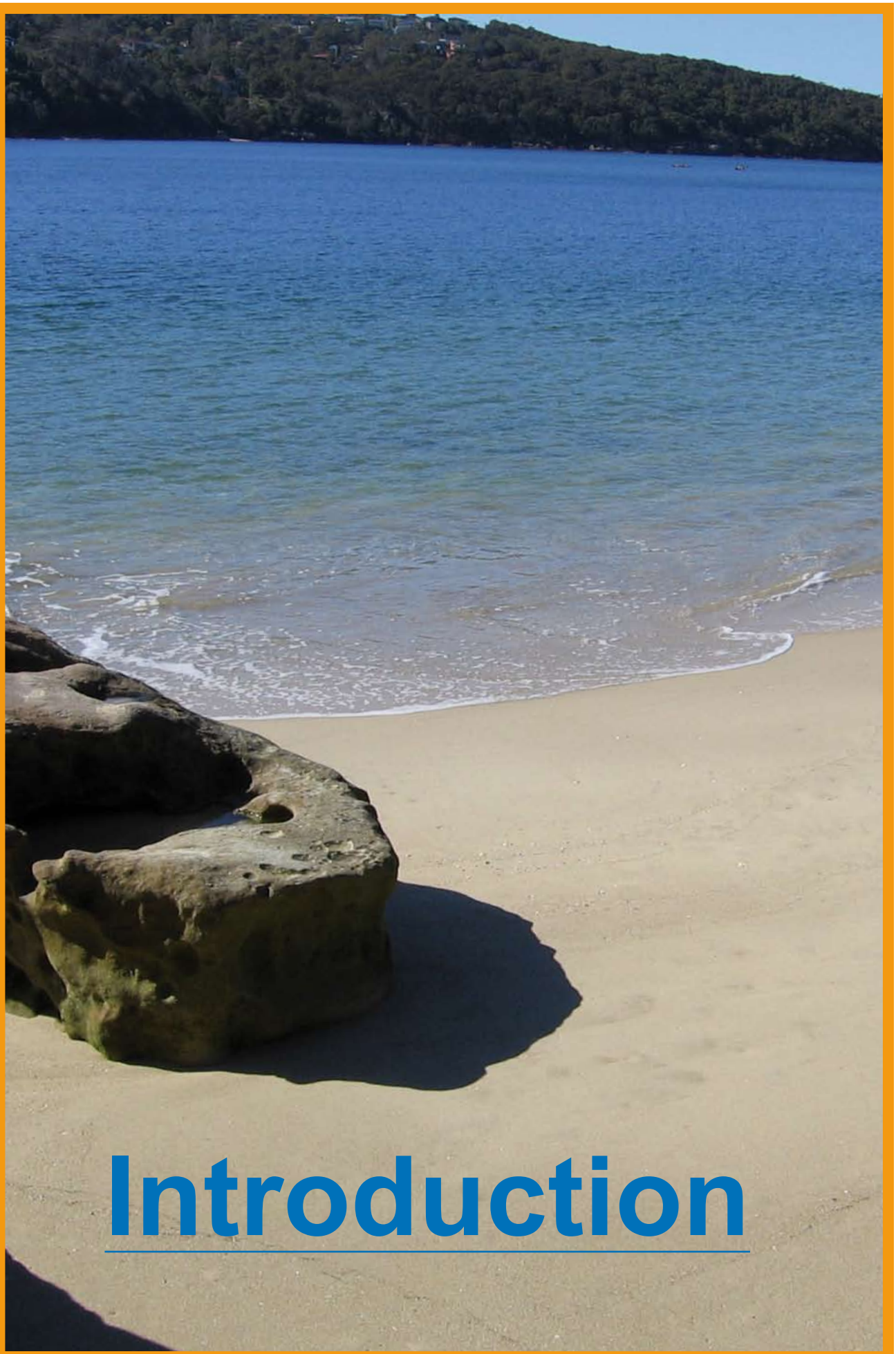


Introduction

Introduction to this Report

This is a supplementary State of the Environment (SoE) report for Mosman Municipal Council for 2004-05.

SoE reporting is an important tool for governments. SoE reports can illustrate what condition the natural (and cultural environment) is in, what human and natural pressures have an impact on the environment, and how effective management responses to environmental problems are.

This report has used the Condition – Pressure – Response (CPR) model to illustrate particular environmental issues that are relevant to Mosman. In other words, each environmental issue is discussed in terms of the condition of the environmental issue, the pressures that are causing or exacerbating the situation, and the response that Council or others are making.

This structured response has been chosen so that readers can easily see the steps that Council and other managers have been making to address environmental issues of concern. The structured approach may also facilitate evaluation of the success of various management actions over different reporting years.

Environmental Indicators

Environmental Indicators have also been used throughout the report. An environmental indicator is a figure that reflects the condition of the natural environment, or the success of management programs, that can be monitored to provide evidence of change. Where changes to condition, pressure or response.

Impetus for This Report

Mosman Council produces state of the environment reports for several different reasons.

Section 428 of the Local Government Act (1993) requires Council to produce an annual report. Among other things, it must report on:
"the state of the environment in the area, and in particular in relation to the following environmental sectors:
(i) land,
(ii) air,
(iii) water,
(iv) biodiversity,
(v) waste,
(vi) noise,
(vii) Aboriginal heritage,
(viii) non-Aboriginal heritage,

with particular reference, with regard to each such environmental sector, to:

(ix) management plans relating to the environment,
(x) special council projects relating to the environment,
(xi) the environmental impact of council activities.

A comprehensive report is required after each electoral year, and one was produced for the 2003-04 year. Consequently, this report has been produced as a supplementary report. Indicators that can be measured annually have been included in this report, as has information about new projects, or where new information about the local environment has become known during the reporting period.

For more detailed background about the local environment, and for a more indepth analysis of the conditon and pressures on the local environment, and long term responses, readers should refer to the 2003-04 comprehensive report. It is available on Council's website and hard copies are available in Council's library.

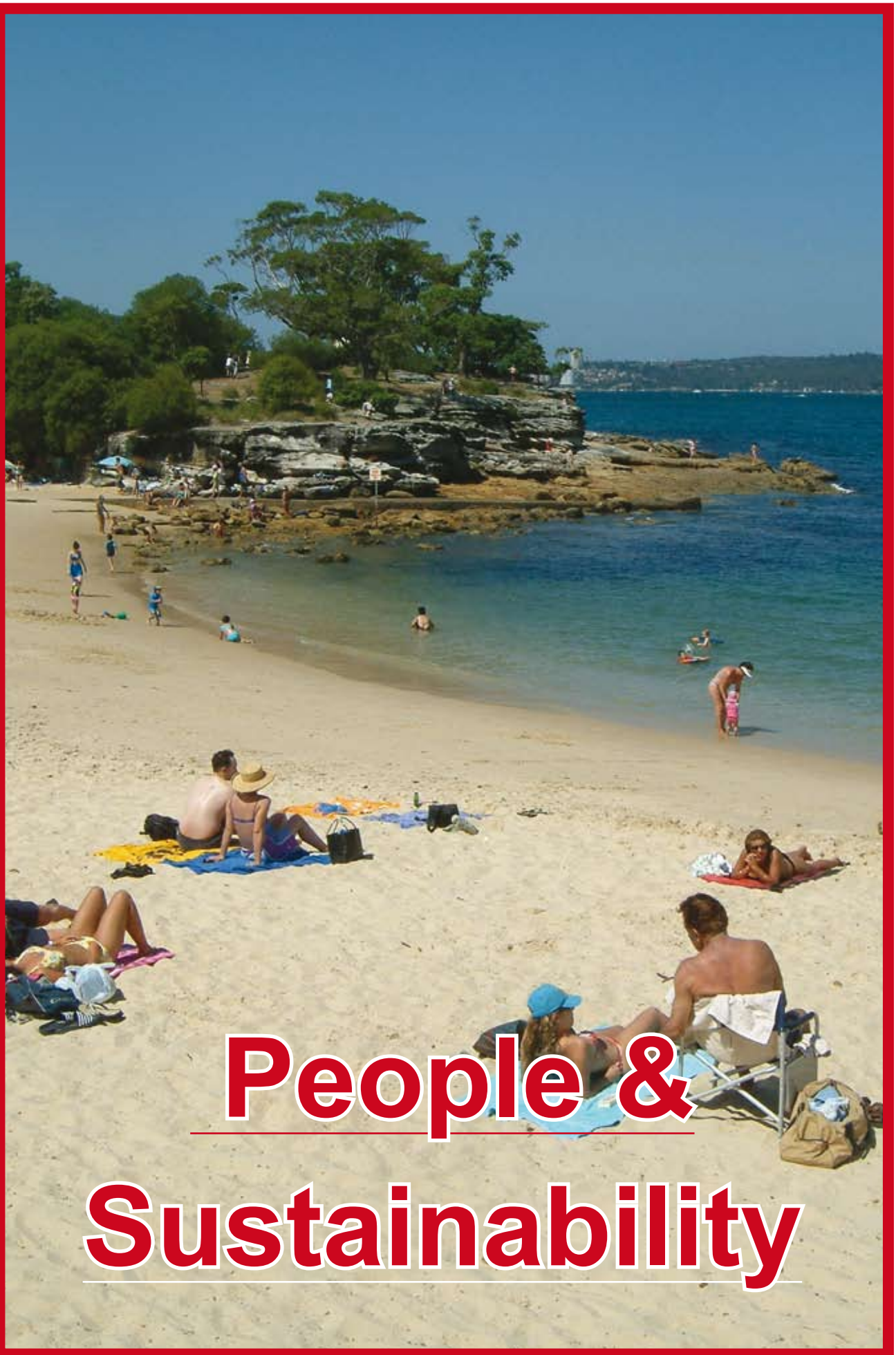
Environmental Management Plan

During the reporting year, Council completed its Environmental Management Plan (EMP). The EMP is designed to identify outstanding environmental issues in Mosman and the most effective policy responses to them. The draft EMP was completed in March 2005, and after community input, and formal public exhibition the action plan was adopted by Council on 6 June.

Other issues presented in this report may be beyond the immediate jurisdiction of Council's management, and therefore responses of other agencies will have to be considered.

References

Local Government Act, 1993, [Online] Available: http://www.austlii.edu.au/au/legis/nsw/consol_act/lga1993182/ [Accessed 1 September 2004]



People & Sustainability

Social Environment

Mosman is a small metropolitan Council located about nine kilometres from the Sydney CBD, on the north side of Sydney Harbour.

The last accurate measure of population and social environment in Mosman was taken in the 2001 census. As recorded in the census, Mosman had a population of 25,889 on census night 2001. Making allowances for the possible high mobility of Mosman's population, the real population of the suburb may be up to 27,000.

Mosman's population density of 2,976 per km^2, is significantly greater than many other parts of Sydney.

ABS projections show Mosman's population in 2004 as 28,272 increasing to 29,856 by 2020. Based on these projections, and current housing occupancy rates, approximately 905 additional dwellings would be required, or 57 per year.

These would all be attached dwellings as there is no real potential for subdivision and additional house construction.

There are few development sites left in Mosman, so an increase in attached dwellings may have an associated decrease in detached dwellings (houses) and/or increased emphasis on larger scale mixed development around business centres and along the transport spine.

This would have both opportunities and barriers for dwelling choice in Mosman, the population mix in the future, and the mixture of commercial and residential areas in Mosman.

Sustainability

Sustainability has been included in this chapter, because it is a concept that is closely linked to both human needs, and the scale of human impact on the environment.

Broadly speaking, sustainability can be defined as the ability to meet the needs and aspirations of the present, without compromising the ability to meet them in the future. It is known that human societies have impacts on the environment in many ways. Because economic growth and population growth increase the rate at which human societies use resources from the environment and dispose of waste into the environment, the rate and scale of impact on the environment is accelerating.

This will compromise the ability of the environment to support future generations, with resources including clean air and water, biologically productive soils, wild species harvested for food, and non-renewable resources, including fossil fuels. The impact of climate change - which is being caused by increased emissions of greenhouse gases from human activities into the atmosphere - will also affect our ability to house human populations in low lying areas in safety, and will change patterns of climate that may make more people vulnerable to extreme weather events, and will affect the viability of current agricultural production in many areas.

Sustainability recognises the need to meet human needs with fewer material inputs, and the need to share resources more equitably.

The consumption of natural resources by the local community will also influence environmental quality in the local area, and in the region. For example, use of petrol and diesel to fuel transport in the local area will have direct impacts on local air quality, as can be seen in the Atmosphere chapter. Likewise, patterns of land use, energy use, housing, transport and the consumption of manufactured goods and food also have a major effect on other sectors of the local environment, as discussed in the other chapters of this report.

The Local Government Act (1993) encompasses the principles of sustainability, and the purposes of the Act include the requirement of "councils, councillors and council employees to have regard to the principles of ecologically sustainable development in carrying out their responsibilities."

Living Within the Means of Nature - Eco Living in Mosman

To try and raise awareness of sustainability in Mosman, and promote ways of living that reduce use of environmental resources without compromising quality of life, Council conducted a community sustainability project. Living Within the Means of Nature - Eco Living in Mosman was partly funded by the Department of Environment and Conservation (NSW) through "It's a Living Thing" project.

The project used the ecological footprint as a tool to measure the scale of resources used at both a household and a municipal level. The ecological footprint was also used as a way to measure the improvements made as a result of the project, and to demonstrate how sustainability can be influenced by everyday life in Mosman.

The ecological footprint is a way to measure the area of land required for the all the resources we need to support our lifestyle. This includes the area required by housing, transport, crops, pasture, and food production as well as land area needed to collect and store water, house the wastes that we generate, absorb our greenhouse gas emissions, and to extract and produce all the resources and energy that make up the products we use daily.

The Ecological Footprint has become a popular tool for educating for sustainability, because it allows for some quantification of the impacts different aspects of lifestyle (such as energy use or purchases), it is a tangible measure of our overall impact upon the earth, and measurement can be an interactive and fun experience.

If the Earth's resources are divided equally, and taking into account the need to conserve some areas and allow biological processes to regenerate, each person on earth has a share of 2.3 hectares of productive land area available to them.

Mosman's Ecological Footprint project had three components:

• Calculation of the overall ecological footprint of the average Mosman resident using a recognised footprint calculator;

• Direct household action with selected household champions. This included measurement of each households footprint; implementation of household sustainability measures, and a re-measurement of the footprint; and

• A social marketing campaign, to publicise the results of Mosman's footprint measurement, the concept of the ecological footprint, and the successes of the champion households that could be emulated by others in Mosman.

The project was conducted between the end of July 2004 and June 2005. The project has been the first large scale project undertaken by Council that had purely educational objectives, and was not tied to structural remediation works.

Household Action

The household action was the core of the project. Measurement of the ecological footprint of each selected household indicated the area that most contributed to the impact of each household (such as energy use, transport or purchases of goods and services).

After a series of workshops, each household developed and implemented a specific action plan. Actions undertaken by householders included establishment of vegetable gardens and compost bins and worm farms, purchase of renewable electricity, water efficiency retrofits to showers and taps, installing insulation to ceilings and hot water systems, and house renovation designs to include rainwater tanks, solar cells and passive solar design.

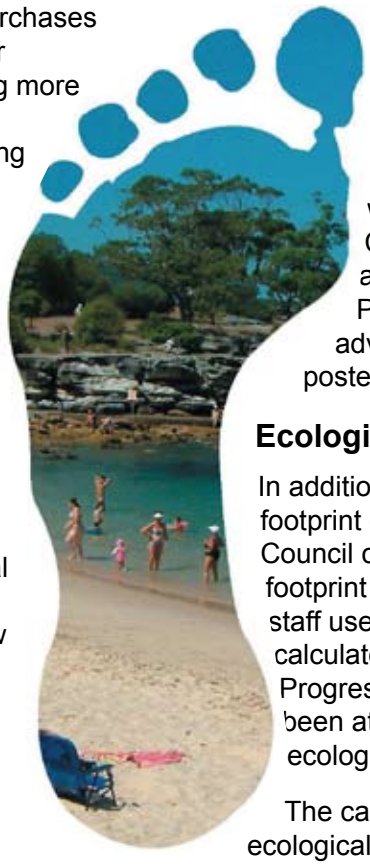
Others purchased efficient appliances to replace water and energy intensive units, or reviewed their travel habits, and started walking more and catching the bus and/or joined Greenfleet, to make sure they could offset the emissions from car trips they still had to make. Many of the

Above: Many of the Ecological Footprint households started home vegetable gardens.

householders also reviewed their purchases of goods, and changed some of their consumption habits or started buying more environmentally preferred products (such as non toxic household cleaning products, or organic fruit and vegetables.)

As a result of the project, the householders average reduction in ecological footprint after seven months was nearly 15 percent.

The participating households have shared their project experiences with their own networks of family, friends and colleagues. As the participating households were typical of normal Mosman households, the project was able to demonstrate how sustainability actions were relevant to many others in Mosman.



Social Marketing Campaign

The participating project households also enabled Council to engage the wider community, and were central to the success of the social marketing campaign.

The social marketing campaign included a well attended "Eco Living Expo" held on a Sunday in March 2005. This featured stalls, displays, competition, giveaways, and entertainment and presentations. Approximately 200 people attended.

Council also developed a booklet, detailing the project, the successes of the participation households, and simple tips to assist readers to reduce their own ecological footprint. This was delivered to every household in Mosman.

The project also received wide media coverage, throughout Mosman and the metropolitan area. This assisted Council to communicate environmental information to a wider audience.

Information on the project was also published on Council's website, in regular emails to Council's environmental email list, and in other Council publications. Presentations were given to advisory group meetings, and posters and displays developed.

Above: Stalls at the Eco Living Expo.

Ecological Footprint Calculation

In addition to calculating the ecological footprint of each participating householder, Council calculated the overall ecological footprint for the entire municipality. Council staff used detailed ecological footprint calculators developed by Redefining Progress, an organisation which has been at the forefront of developing the ecological footprint concept.

The calculation showed that the average ecological footprint of each resident of Mosman is 14.7 global hectares.

This is approximately twice that of the average Australian footprint, and over six times the global earth share.

A breakdown of the ecological footprint result shows that the land required to supply fossil fuel resources and absorb the waste products from their combustion contributes to 55% of Mosman's ecological footprint.

The use of resources to provide food and goods account for 26 percent and 30 percent of the total footprint result respectively. Interestingly, the fossil fuel required for transportation services is less than that required for goods, services, and only marginally greater than that required for food. This shows the importance of the concept of "embedded energy" in other goods. Embedded energy takes into account the energy used to extract and refine resources, manufacture goods, and transport them to market.

The ecological footprint result can now be used as an overall environmental indicator for the local government area. It can also help Mosman measure progress towards reducing overall use of environmental resources and moving towards sustainability.

Ecological Footprint Distribution for Mosman							
CATEGORIES	FOSSIL ENERGY	CROP LAND	PASTURE	FOREST	BUILT-UP LAND	FISHERIES	TOTAL
FOOD	7%	10%	3%	0%	0%	7%	26%
HOUSING	8%	0%	0%	7%	0%	0%	15%
TRANSPORTATION	8%	0%	0%	0%	1%	0%	9%
GOODS	16%	6%	0%	7%	0%	0%	30%
SERVICES	10%	0%	0%	3%	0%	0%	13%
WASTE	4%	0%	0%	3%	0%	0%	7%
TOTAL	53%	15%	3%	20%	2%	7%	100%

Environmental Management Plan

As mentioned in the previous chapter, Council completed work on its environmental management plan during the reporting period.

The Plan is designed to allow Council to systematically address the priority environmental issues in the environment of Mosman, and that are imposed by the operations and services of Council. The actions identified by the Environmental Management Plan are being introduced into Council's management plan, Mosplan.

The Environmental Management Plan is available to view on Council's website at: www.mosman.nsw.gov.au/council/environ_plan_05.pdf

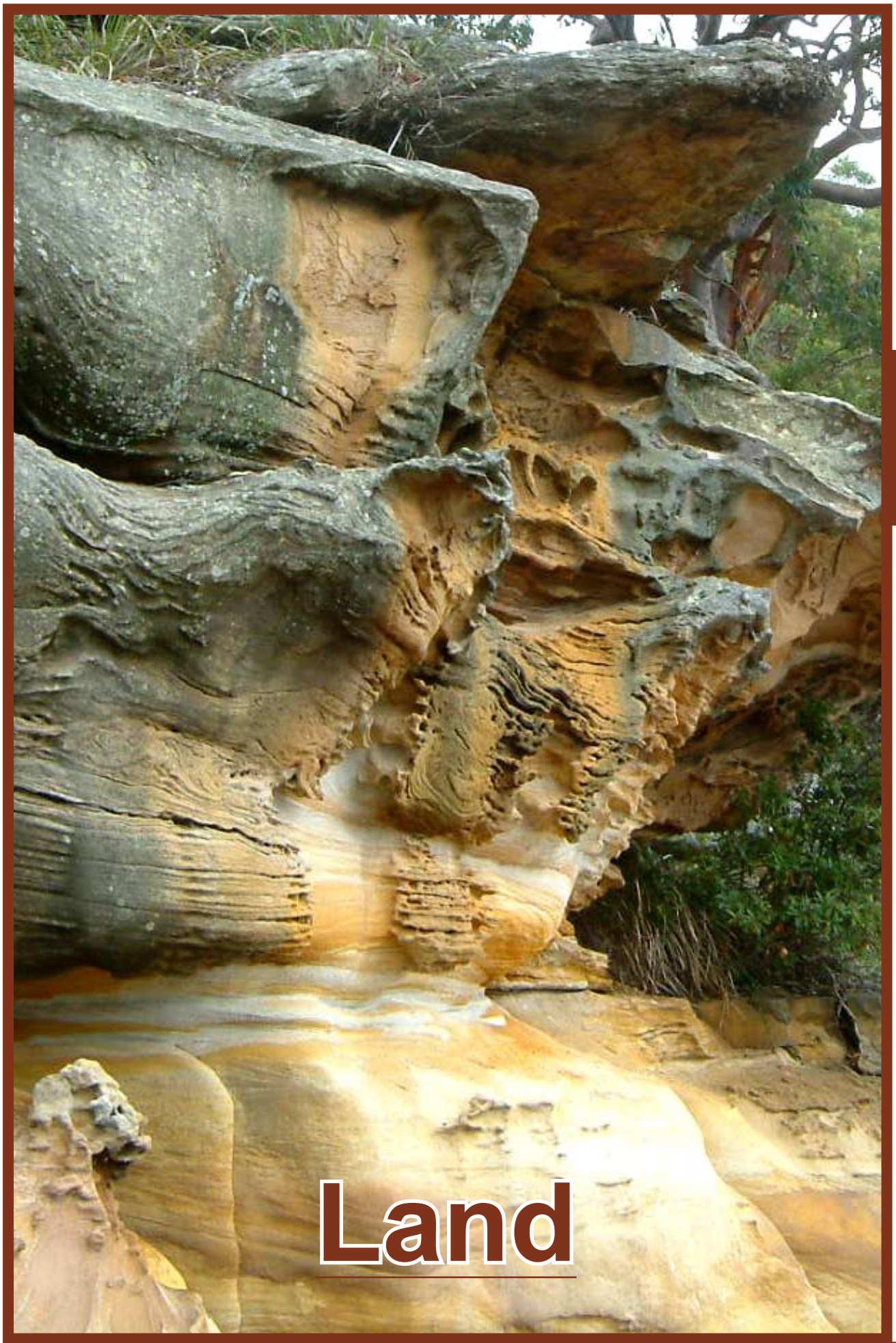
The actions identified by the Plan have also been listed in the appropriate "Response" section of each environmental issue identified by this report. In this way, the State of the Environment report can assist Council in monitoring the progress of implementing the Environmental Management Plan, and identifying the effectiveness of Environmental Management Plan actions by reporting on changes to environmental condition and pressure.

The Environmental Management Plan - Action Plan was adopted by Council in June 2005, and the entire document was adopted by Council in July 2005.

References

Australian Bureau of Statistics (ABS), 2001, ***Census of Population and Housing***, ABS, Canberra

Mosman Council, 2004, ***Future Mosman Staff Briefing Papers***, Mosman Council, Mosman.



Land

Land: Summary of Indicators

Pressure

Indicator	Result	Comments
Development Applications received 2004/05	505	18% more DAs received than previous year.
Construction Certificates issued	127	Includes Construction Certificates issued by Council. Approximately 200 issued by private certifiers.

Response

Indicator	Result	Comments
Development Applications determined 2004/05	539	Includes DAs approved as well as rejected.

Land Use & Development

Condition and Pressure

Land use pressure and condition are little changed from those described in the 2003/04 Comprehensive State of the Environment Report.

Response

Development Control

Council continued to assess development applications during the reporting period. In 2004-05 there were 505 development applications received, and 539 determined.

BASIX

The Building Sustainability Index (BASIX) is a tool that has been adopted by the state government to ensure that environmental standards of new dwellings are improved. BASIX requires that each new dwelling design results in a 40 percent reduction in water use, and a 25 percent reduction in greenhouse gas emissions compared with the average existing home. BASIX over-rides water and energy conservation requirements of existing Council planning instruments.

Council is still required to assess new development applications according to the other standards in its planning instruments, however Development Applications submitted to Council are required to have a BASIX certificate certifying that BASIX targets are satisfied.

Review of Planning Instruments

Council has determined to review its planning instruments. Council's current LEP was gazetted in 1998, after preparations started in 1995. This means that it has been more than 10 years since a comprehensive review of Council's planning instruments has been conducted.

The review of the LEP is anticipated to allow Council better flexibility in responding to the state government's yet-to-be-released Metropolitan Strategy. It will also allow Council's planning instruments to reflect changes to State Environmental Planning Policies made during the last 10 years, state government changes to developer contribution guidelines, government changes to projects considered to be state significant development, and state government moves to achieve greater consistency in local government planning instruments. It is also anticipated that the new planning instruments will allow Council to implement some of the principles identified during the development of Council's Environmental Management Plan.

Environmental Management Plan Actions

The EMP includes the following actions relevant to land use and development:

• Ensure reviews of Council's LEP and DCPs as identified in Program 2 of MOSPLAN 2005 - 2008 result in planning instruments founded on the principles of ESD.
To be Completed by December 2007

• Incorporate sustainable design principles into any redevelopment plans for Spit Junction/Civic Centre and Mosman Junction.
Annual Review June

• Enforce the requirements of BASIX for all relevant Development Applications
Ongoing - June

Contaminated Lands

Condition

It is known that several sites owned by Council have been contaminated by past activities, including landfilling of various substances.

Sites where investigations have revealed some contaminating substances at levels higher than relevant guideline investigation levels include Balmoral Oval, and Reid Park. Substances have also been detected in land in Julian St, which Council is negotiating to purchase from Sydney Water.

It is also known that some privately owned sites in Mosman have been contaminated by past activities, such as service station operations.

No sites in Mosman are on the DEC register of sites considered to pose significant risk of harm to human health or the environment.

Pressure

Redevelopment of land for more sensitive purposes may both increase the likelihood that historic contamination is disturbed, and require remediation so that more intense human occupation is still safe. Such development may occur when sites that were used for purposes such as service stations are redeveloped into residential apartments.

Ongoing maintenance activities in Council owned open space, which is known to have a history of polluting activities, may also have the potential to disturb historic contamination. For example, digging for construction works may disturb contamination which has been formerly covered by clean top soils.

Response

Balmoral Oval

Balmoral oval is a former municipal tip site. Although originally planned to be only a temporary tipping site, household waste was disposed of at the site between 1908 and 1936. Contemporary records indicate that the site was occasionally inundated by seawater, and that at other times spontaneous combustion of the rubbish resulted in fires that smouldered for weeks. When tipping at Balmoral was finished, the site was filled with clean sand and capped. It is not known if other fill or capping was added at this time.

Historic images indicate that the site was being used for playing fields by the 1940s.

Previous investigations prior to works at Balmoral Oval have shown contaminants in excess of health based investigation levels for lead, Polycyclic aromatic hydrocarbons (PAH) and Benzo(a)pyrenes, in the fill material below the clean capping material of the oval surface. It also appears that zinc may have been above ecological investigation limits at one site.

Management of construction sites, based upon the evidence revealed in pre-construction investigation has minimised the chance of contaminants affecting the environment.

In May, Council approved a development application for the construction of a BMX track by Council at Balmoral Oval.

Initial investigations for this work commenced during the reporting year. An acid sulfate soil investigation found no signs of potential acid sulfate soils. An assessment of site contamination was also commissioned during the reporting year, but not completed until July 2005.

Contamination issues raised by the initial investigation have been managed by staff according to relevant guidelines.

Lots 13 – 15 Julian St

During the reporting period, Mosman Council continued negotiations with Sydney Water regarding the purchase of land at lots 13 – 15 Julian St. These negotiations had not been finalised as at the end of the reporting year.

As a result of historic dumping on the site, the land is known to be contaminated. A remediation action plan for the site has been developed, and this will be enacted as Council installs a Stormwater Quality Improvement Device (SQID) on the land.

A site environmental management plan will also be developed for the site when the SQID has been installed, to ensure that ongoing management of the site prevents residual contamination from harming human health or the environment.

SEPP 55 Notification 500 Military Rd

In March 2005, Council received notification under SEPP 55, which is the state planning instrument dealing with land remediation, that remediation of a former service station site on

Military Rd was taking place by the landowner. The nature of the remediation was such that no development consent from Council was required.

Environmental Management Plan Actions

Council's EMP contains the following actions to ensure ongoing management of contaminated lands in Mosman:

• Develop a contaminated lands policy to improve identification and assessment of potentially contaminated sites.
To be completed by December 2005

• Update and maintain Council's GIS to include all matters prescribed under the Contaminated Land Management Act for inclusion on planning certificates under s149(2) of the Environmental Planning and Assessment Act.
Ongoing – September 2005

• Develop site environmental management plans for Council sites known to be contaminated by past activities.
To be completed by March 2006

• Ensure compliance with the Site Environmental Management Plan for Lots 13 - 15 Julian Street.
Quarterly Review - September

Acid Sulphate Soils

Condition & Pressure

Some areas in Mosman have been identified as potential acid sulphate areas, Potential acid sulphate soils pose little risk until they are disturbed and exposed to oxygen.

Detailed investigations prior to a SQID installation showed potential acid sulphate soils in one area in Little Sirius Cove. Marginal risk of potential acid sulphate soils has been identified at the Spit West.

Recent tests at the site of the Balmoral BMX showed low risk of acid sulfate soils.

Response

Council tests for the presence of acid sulphate soils in risk areas prior to any excavations taking place in accordance with the Acid Sulfate Soils Assessment Guidelines developed by the former department of Urban Affairs and Planning (now the Department of Planning). If potential acid sulphate soils are detected, projects or processes are altered accordingly, or management plans developed.

Council also manages the likelihood of impact from private development through the application of acid sulphate soils clauses in the Mosman Local Environmental Plan.

Harbour Sediments

All information in this section has been taken from “The Contaminant Status of Sydney Harbour Sediment: A Handbook for the Public and Professionals” by Gavin Birch and Stuart Taylor.

Sydney Harbour is the most degraded NSW estuary because it has been more intensely urbanised and industrialised than any other catchment in NSW, and has been developed for the longest period.

High concentrations of contaminants occur in embayments that are close to sources of contamination, are mantled in muddy sediments which have an affinity for pollutants, and are poorly flushed by tides and currents.

While the lower part of Sydney Harbour near the heads is generally less contaminated than upper harbour areas, Mosman Bay and Long Bay in the lower harbour do share these characteristics and do show high levels of contaminants in their sediments.

Birch and Taylor tested numerous sites in Sydney Harbour for a range of contaminants, including heavy metals and man made organic chemicals.

There are significantly elevated levels of copper, lead, zinc and PAHs (polycyclic aromatic hydrocarbons) in the sediments in Mosman Bay. This is consistent with the sheltered nature of the elongated embayment at Mosman Bay, the large catchment area draining into Mosman Bay which includes most of Mosman’s commercial areas, and the long period of industrialisation and settlement in Mosman Bay. There is also the possibility that atmospheric deposition of copper occurred in the past when a copper smelter at Neutral Bay operated.

The deposition of PAH in the waters of Sydney Harbour may have occurred from the burning of fuel for harbour craft. There may have also been a source of local deposition in Mosman Bay, associated with the combustion of fuel. Very small natural levels of PAH can be deposited from events such as bushfires, however, would be nowhere near the levels now seen in bays such as Mosman Bay.

It is believed that background (pre-anthropogenic) levels of copper, lead and zinc in Sydney Harbour may have been 10, 33 and 47 micrograms, respectively. Current measured levels in Mosman Bay are 250, 470 and 670 micrograms.

It is known that land has been reclaimed around Mosman Bay. Industrial premises at Mosman Bay have included a whaling station, which was established in 1872, a tannery, and a candle factory. The catchment area of Mosman Bay was one of the earliest settled parts of Mosman.

The contaminant levels of sediments is an important environmental indicator, because contaminants affect the quality of the water column, and sediments provide habitat for many species that are near the base of the marine food chain.

Sediments may also provide a stable indication of pollutant levels over time. Birch and Taylor argue that sediment quality may be as important an issue as water quality, which is regularly monitored by a variety of agencies.

Birch and Taylor argue that high concentrations of heavy metals and contaminants in the sediments that occur adjacent to streams and canals entering Port Jackson indicate the importance of stormwater runoff as a source of pollutants to the estuary. Initial studies by Birch and Taylor indicate that low or base flow stormwater may contribute most to the deposition of contaminated sediments onto the harbour floor.

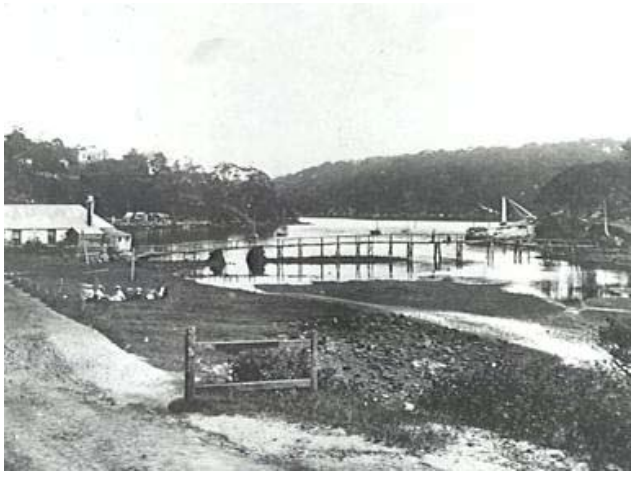
Sources of toxic contamination carried in stormwater may include contamination from road surfaces and leachates from contaminated and reclaimed land. Airborne contaminants are also likely to be significant, especially for metals such as lead, which was formerly used in petrol.

Poorly regulated land reclamation activities, including those in areas such as Mosman Bay, may have resulted in contaminated wastes being dumped behind seawalls. Freshwater and saltwater infiltration may percolate heavy metals contained in contaminated fill into harbour waters.

Birch and Taylor argue that sewer overflows and licensed discharges are a less significant source of toxic materials to the harbour, and the construction of the Northside Storage Tunnel has decreased this source significantly. The operation of the Northside Storage Tunnel is discussed in Chapter 5. Sewage may still be a significant source of faecal and bacterial contamination.

It is not known what effect the elevated concentrations of pollutants in sediments at

Mosman Bay is having on benthic species, or how they are being introduced into the food chain. It is possible that at the concentrations recorded in Mosman Bay, there is some negative effect on biota.



Top: Rocky shoreline in Mosman Bay c.1870
Middle: Mudflats at the head of Mosman Bay, c. 1880
Bottom: View towards part of the Mosman Bay whaling station in 1860, showing land reclamation had already begun.

Land Use, Accessibility and Transport

Condition & Pressure

The issue of land use accessibility and transport has been included in this report because patterns of land use and the provision of transport infrastructure influences how people use land and how they travel around. This has important implications for energy use and local environmental condition. Responses and actions that may influence land use and transport are described below.

Response

Travel Demand Management

Council has a series of recommendations from a Travel Demand Management study completed in 2004. The report has not yet been officially adopted, however MOSPLAN requires the investigation of the report's recommendations in 2005/06 for feasibility of implementation.

Council began a program of offering interest free loans to staff to purchase periodical travel passes. This slightly offsets the costs of public transport travel to work, and has been taken up by a limited number of staff. Council will continue offering the program.

Bicycle Plan

The Mosman Bicycle plan was adopted during the reporting year, and some funds allocated for its implementation in the 2005-06 budget. The Taronga Zoo wharf to Balmoral cycleway is being undertaken, and the project will increase opportunities for safe and convenient cycling in Mosman

Transport DCP

The Draft Transport DCP was adopted by Council. It has replaced Council's existing carparking Off-street Parking Code, reflecting Council's desire to moderate the unsustainable growth of car usage and encourage the adoption of more sustainable transport modes. The plan includes requirements for bicycle parking for some developments, and reductions in car parking space required for some developments near public transport.

Environmental Management Plan Actions

Council's EMP contains the following actions relevant to land use, transport and accessibility.

• Ensure reviews of Council's LEP and DCPs as identified in Program 2 of MOSPLAN 2005 - 2008 result in planning instruments founded on the principles of ESD. To be Completed by - December 2007

• Incorporate sustainable design principles into any redevelopment plans for Spit Junction/Civic Centre and Mosman Junction. Annual Review - June

• Install bicycle parking at Taronga Zoo and Balmoral. To be Completed by - June 2006

• Complete the Taronga Zoo to Balmoral cycle path. To be completed by - June 2006

• Implement Mosman Bicycle Strategy, Travel Demand Management, and other sustainable transport initiatives as identified in Program 11 of MOSPLAN 2005-2008. Quarterly Review - June

References

Birch, G and Taylor, S, 2004, ***The Contaminant Status of Sydney Harbour Sediments A Handbook for the Public and Professionals,*** Environmental Engineering and Hydrogeology Specialist Group, Geological Society of Australia

Department of Urban Affairs and Planning and Environment Protection Authority, 1998, ***Managing Land Contamination – Planning Guidelines SEPP 55,*** DUAP and EPA

Atmosphere

Atmosphere: Summary of Indicators

Condition & Pressure

Indicator	Result	Comments
National Pollutant Inventory: sources 2004/05	Motor vehicles 25% of emissions.	Slight increase from previous year: largest identified source of emissions.
National Pollutant Inventory: emissions 2004/05	2.2 million kg of carbon monoxide. 300,000 kg oxides of nitrogen. 420,000 kg volatile organic compounds in 2004/03.	10% increase in carbon monoxide from 2003/04. Other substances little changed from previous year
Energy Use: Mosman Council (2004)	16,425 gigajoules	14% reduction in gigajoule use this reporting period.
Greenhouse Gas emissions: Mosman Council 2004	4685 tonnes of $C0_2$ equivalent.	Majority of increase attributable to inclusion of waste disposal from street sweeping, beach and reserve cleaning and SQID capture. Calculated greenhouse gas emissions per unit of energy use also increased.

Response

Indicator	Result	Comments
Greenhouse Gas Emissions abatement	4685 tonnes of $C0_2$ equivalent.	No abatement in this reporting period. Majority of increase attributable to inclusion of waste disposal from street sweeping, beach and reserve cleaning and SQID capture.

Urban Air Quality

Condition and Pressure

Regional Pollution Index Data

In the past, this report has included regional pollution index data, and data from the Sydney City air quality monitoring station operated by the state government. This station was closed during the reporting period, and there are no other stations near Mosman, or in geographically similar locations. Therefore, no specific regional air pollution data can be presented in this edition.

National Pollutant Inventory Data

Data from the National Pollutant Inventory shows the indicative causes of emissions into the atmosphere in Mosman.

Figures from the 2004/2005 financial year again show motor vehicles to be the largest single source of substance emissions in the Local Government Area. The “other category” includes burning/wildfire, solid fuel burning, service stations, architectural surface coating, dry cleaning, urban residential/commercial, bushland/parks, disturbed land). Additionally, as no backyard incineration is conducted in Mosman, this category represents combustion from hazard reduction and uncontrolled fire.

Figure 4.2 is also generated from NPI data. It shows carbon monoxide emissions to be the greatest issue for Mosman’s air quality in the 2004/2005 financial year. The second largest substance emissions were total volatile organic compounds, followed by oxides of nitrogen. The main source of all of these substance emissions is motor vehicles.

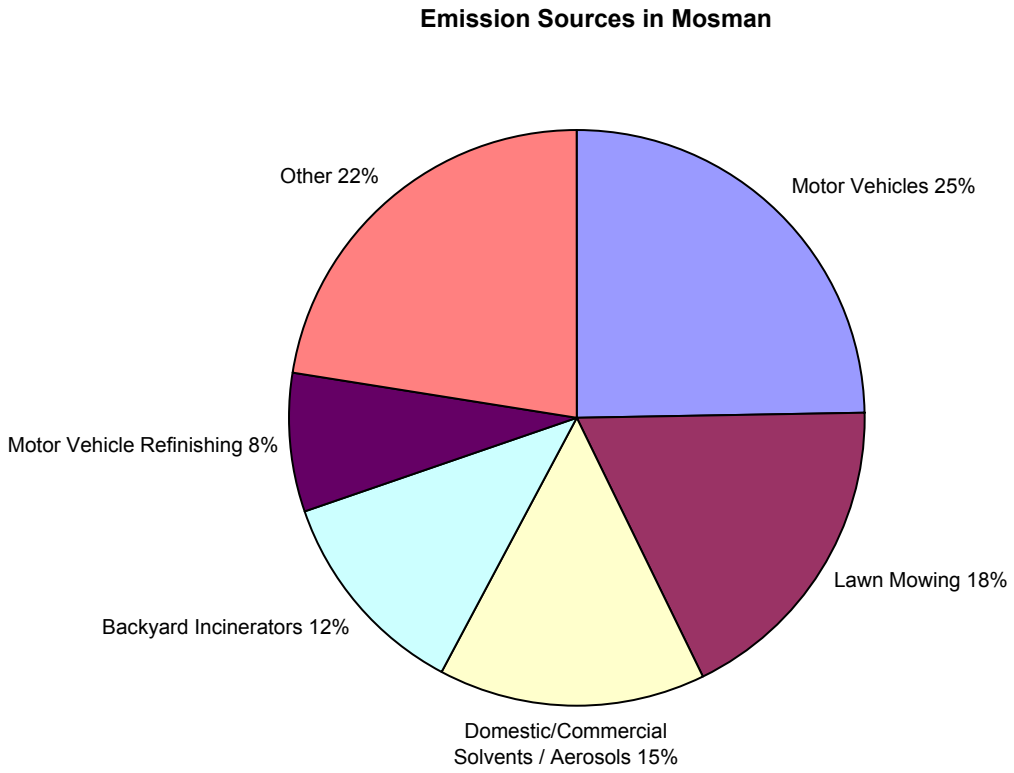


Figure 4.1: Emission sources in Mosman 2004/05

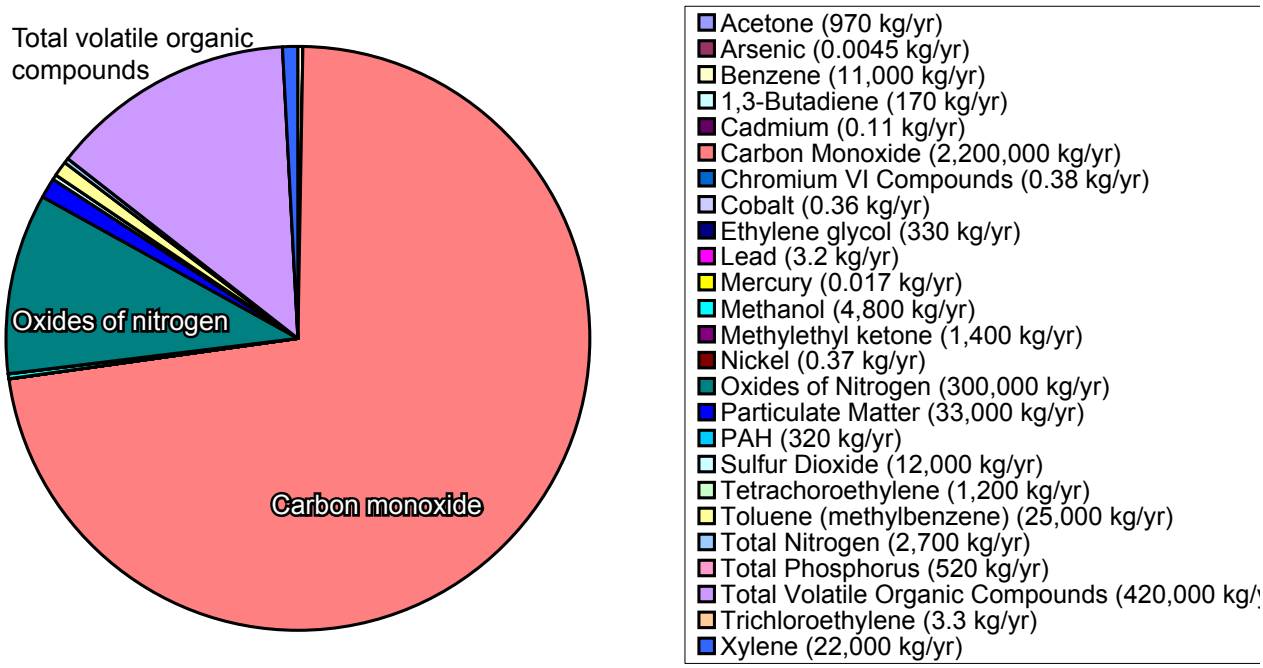


Figure 4.2: Indicative substance emissions to the atmosphere in Mosman during the 2004/05 year.

Motor Vehicle Transport

As indicated by the emission sources data, motor vehicles continue to be the greatest single source of emissions in Mosman. However, no new traffic count data has been released by the RTA to compare vehicle movements along the Military/Spit Rd corridor during the year.

Response

As detailed earlier, Council has implemented programs that are designed to improve local air quality by reducing reliance on private motor vehicles. These include:

Travel Demand Management

As detailed in the previous State of the Environment report, Council has produced a travel demand management report. It has not been adopted by Council, however some recommendations, such as the provision of interest free loans to staff to purchase periodical travel tickets, have been implemented.

Mosman Bike Plan

The Mosman Bike plan was completed, and endorsed by Council during the reporting year. It has formed the main part of the Mosman Bicycle Strategy 2005-2010. A Mosman Cycling Working Group has been formed, with Councillor and community representatives, to guide the implementation of the strategy. The adoption of the strategy should enable Council to be eligible for RTA funding for identified projects.

Taronga Zoo to Balmoral Cycleway

The Taronga Zoo to Balmoral cycleway was started during the reporting period. The project has received funding from the state government's Sharing Sydney Harbour Program.

The project will link two of the popular visitor areas in Mosman. Works are to include:

- Route Signage
- Bicycle Parking (Balmoral Beach and Taronga Zoo Wharf)
- Line Marking & Logos
- Rawson Park Shared Cycle Path
- Shared Use Footpath between Croquet Lane and Rawson Park

Detailed plans of the project went on public exhibition during the reporting period and cycle parking was installed at Taronga Zoo wharf in June. This was jointly funded by Council and the State Transit Authority.

Environmental Management Plan Actions

Mosman Council's Environmental Management Plan includes the following actions to address urban air pollution:

• Review Council's system of fleet management and report upon the feasibility of introducing environmentally preferred alternatives including a greater uptake of LPG vehicles or introducing hybrid electric and/or bio-diesel vehicles. To be Completed by March 2006

• Research and report upon potential approaches to discourage the community's use of energy intensive motor vehicles. To be completed by September 2006

• Install bicycle parking at Taronga Zoo and Balmoral. To be Completed by June 2006

• Complete the Taronga Zoo to Balmoral cycle path. To be completed by June 2006

• Implement Mosman Bicycle Strategy, Travel Demand Management, and other sustainable transport initiatives as identified in Program 11 of MOSPLAN 2005-2008. Quarterly Review June

Greenhouse Gas Emissions

Condition & Pressure

Background information on the enhanced greenhouse effect is contained in the previous Comprehensive State of the Environment report.

Community Stationary Electricity Demand

Demand for electricity, and other forms of 'stationary' energy is the chief cause of greenhouse gas emissions in Australia. This is also the case in Mosman, where the majority of consumers use electricity generated from coal fired power plants. Information on the overall community energy consumption in Mosman in the reporting period is not available.

Council Greenhouse Gas Emissions

It is difficult to accurately report on Council's greenhouse gas emissions on a financial year basis, as the greenhouse gas calculator used by Council is based on a calendar year. Therefore, 2004 figures have been presented in this report.

Using software supplied by the Cities for Climate Protection program (CCP), Council's greenhouse

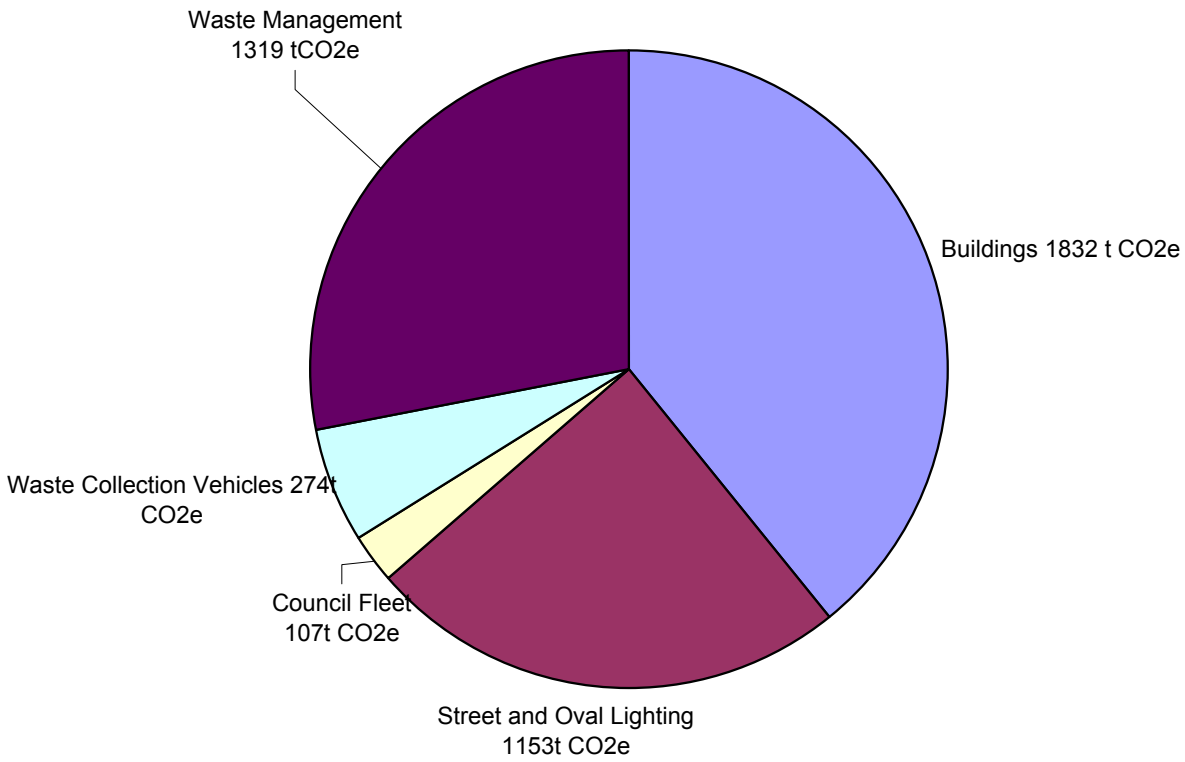


Figure 4.3: Greenhouse Gas Emissions from Council activities in 2004.

gas emissions for 2004 have been calculated at 4685 tonnes of $C0_2$ equivalent, with an energy use of 16,425 gigajoules. This compares with emissions of 2435t CO_2e in 1995, the first year that emissions were calculated.

It is important to note that the apparent large increase in greenhouse gas emissions is largely due to the inclusion of wastes collected by streetsweeping, beach and reserve cleaning and SQID capture which are disposed of to landfill. As explained in the waste chapter, organic wastes in landfill tend to produce greenhouse gases. Increases in other sectors can also be attributed to increased energy consumption in street and oval lighting, and a calculated increase in greenhouse gas emissions per unit of energy used.

Emission Sources

The largest contributor to Council's greenhouse gas emissions is the use of electricity for buildings and street and reserve cleaning. The disposal of significant amounts of organic wastes from public place cleaning has also contributed significantly to Council's emissions of greenhouse gases.

Response

Cities for Climate Protection

Mosman Council remains a member of the Cities for Climate Protection Program, which in Australia is run by the International Council for Local Environmental Initiatives (ICLEI) and the Australian Greenhouse Office (AGO). Mosman is at the CCP+ stage of the program.

Mosman Council took part in the pilot Sustainable Transport program run by CCP. Council also plans to use tools from CCP's greenhouse purchasing program to help implement its upcoming sustainable purchasing policy.

Household Energy Efficiency Programs

Through its membership of CCP, Council received grant funding from the Australian Greenhouse Office (AGO) to conduct an energy efficiency program for Mosman residents. Participating householders were given a free energy audit of their house, recommendations on how to reduce energy consumption, and a range of free energy efficiency products. The second stage of the project involved giving away energy efficient lightbulbs and showerheads to users of Council's Seniors Centre.

Council's Ecological Footprint project also resulted in participating households making significant reductions to their energy consumption.

Ongoing Actions

As a result of implementing its Greenhouse Gas Reduction Plan, Mosman Council has run a predominantly LPG passenger vehicle fleet.

Other major actions include the ongoing purchase of 5% greenpower (energy generated from entirely renewable sources) for the Civic Centre, Library, Cultural Centre and Vista St carpark.

Energy Performance Contract

Council's last State of the Environment report reported upon the completion of a detailed facility study, which was a precursor to the adoption of an energy performance contract (EPC), which would have guaranteed energy savings in Council's facilities. However, funding to implement the EPC was not included in the 2005-06 Council budget. Funding has been allocated to upgrade air conditioning in Council's

library, which will result in some energy savings.

It is hoped that Council may be successful in gaining grant funding to implement the EPC or that funds will be allocated in a subsequent Council budget. The calculated costs and savings of the two proposals were as follows:

	Option A	Option B
EPC project cost	$264,069	$477,712
Energy and maintenance bill savings per annum	$43,246	$48,825
Internal Rate of Return	17%	9%
Greenhouse gas emission reduction per annum per annum	434 tonnes CO2 (12% less than current emissions).	515 tonnes CO2 (15% less than current emissions)
Energy savings	1,497,162 MJ	1,788,222 MJ

Without the implementation of an energy performance contract, Council is unlikely to meet its target of reducing greenhouse gas emissions to 1948 tonnes of CO2 by 2010.

Development Control

BASIX, the Building Sustainability Index now applies to all new residential developments in metropolitan areas. BASIX requires that all new residential dwellings achieve a 25 percent reduction in greenhouse gas emissions compared with the average existing dwelling. The greenhouse target will increase to 40 percent from July 2006. BASIX will be applied voluntarily to new multi unit dwelling developments from July 2005, and will be mandatory from October 2005.

Environmental Management Plan Actions

Mosman Council's Environmental Management Plan includes the following actions to address greenhouse gas emissions:

• Develop an environmental management policy and guidelines for facility development, redevelopment, and asset refurbishment and renewal. To be completed by December 2005

• Develop an environmental management policy and guidelines for the leasing of Council property. To be completed by December 2005

• Report to Council on the status and future of the energy performance contract project. To be completed by July 2005

• Develop a plan to progressively improve the efficiency of heating, ventilation and air conditioning systems in Council facilities. To be Completed by - March 2006

• Set up a revolving energy fund to reinvest savings from improved energy efficiencies into other sustainable energy projects. To be completed by June 2006

• Review and report upon the potential for Council to purchase a greater percentage of energy from renewable resources (accredited GREEN ENERGY). To be completed by March 2006

• Participate in the Street Lighting Improvement Program. Quarterly Review September

• Commence investigations into the risk to Mosman's coastal assets and infrastructure from global warming. Annual Review September 2005

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Water

Water: Summary of Indicators

Condition

Indicator	Result	Comments
Receiving water quality - ecosystem health	Acceptable	All parameters within guidelines except nitrogen and phosphorus at many sites; oil and grease in some.
Receiving water quality - human health (Harbourwatch)	Good	100% compliance at all sites except Little Sirius Cove, at 67% compliance.
Algal blooms	No blooms recorded in 2004/05	

Pressure

Indicator	Result	Comments
Imperviousness:	Estimated 71%	Increases run off, pollutant transport and peak flows from storms.
Major sewer overflows:	None recorded.	No overflows from Northside Storage Tunnel recorded.
Minor sewer overflows	13 recorded	
Water Demand: Mosman community	3.04 million kL	5% reduction due to water restrictions and increased community awareness.
Water Demand: Mosman Council	56,5111 kL	12% reduction due to water restrictions and efficiency measures.

Response

Indicator	Result	Comments
Material captured in SQIDs	287 tonnes	Slight reduction from previous year.
Water Demand Reduction: Mosman Community	3.04 million kL	Demand fell by 5%
Water Demand Reduction: Mosman Council	56,5111 kL	Demand fell by 12%

Local Waterways and Water Quality

Condition & Pressure

The Water Quality Monitoring Program continued to be implemented during the 2004/2005 financial year. This program is designed to gain an indication of the water quality of Mosman's receiving waters for ecosystem health, and to continue to gather data for the evaluation of the performance of the SQIDs in improving the quality of water downstream of the device.

Results of this program are shown in the Response section of this chapter. The ongoing drought reduced the volume of stormwater discharged into the harbour, which may have improved receiving water quality.

There were no substantial changes in the condition of waterways in Mosman during the reporting period, indicating that pressures have not greatly altered.

Harbourwatch Sampling

Information on harbour water quality was again obtained from the Harbourwatch water quality sampling program which monitors levels of two bacteria: thermo-tolerant (faecal) coliforms and enterococci. Levels of these bacteria above limits set by the National Health and Medical Research Council (NHMRC) indicate that swimming in such waters may not be safe.

The following graphs show results from water quality monitoring from Harbourwatch.

As shown in Figure 5.1 below, all receiving Waters were 100% compliant with median guideline levels for faecal coliforms. All sites except Little Sirius Cove were 100% compliant with guidelines for Enterococci. Little Sirius Cove was 67% compliant with guidelines, but did not comply during January 2005, March 2005, July 2004, and October 2004.

The median value shown in Figure 5.2 (over page) is for the entire 12 month period. This value is based on a five sample data set per month for twelve months. Chinamans Beach was of the best water quality for both faecal coliforms and enterococci. Edwards Beach had a fairly high value for faecal coliforms and enterococci. Clifton Gardens and Little Sirius Cove both had lower faecal coliform levels compared to enterococci levels. Whilst faecal coliforms indicate recent sewage contamination, enterococci indicates aged sewage in the waterway. Little Sirius Cove recorded a higher median level than the other receiving waters for enterococci.

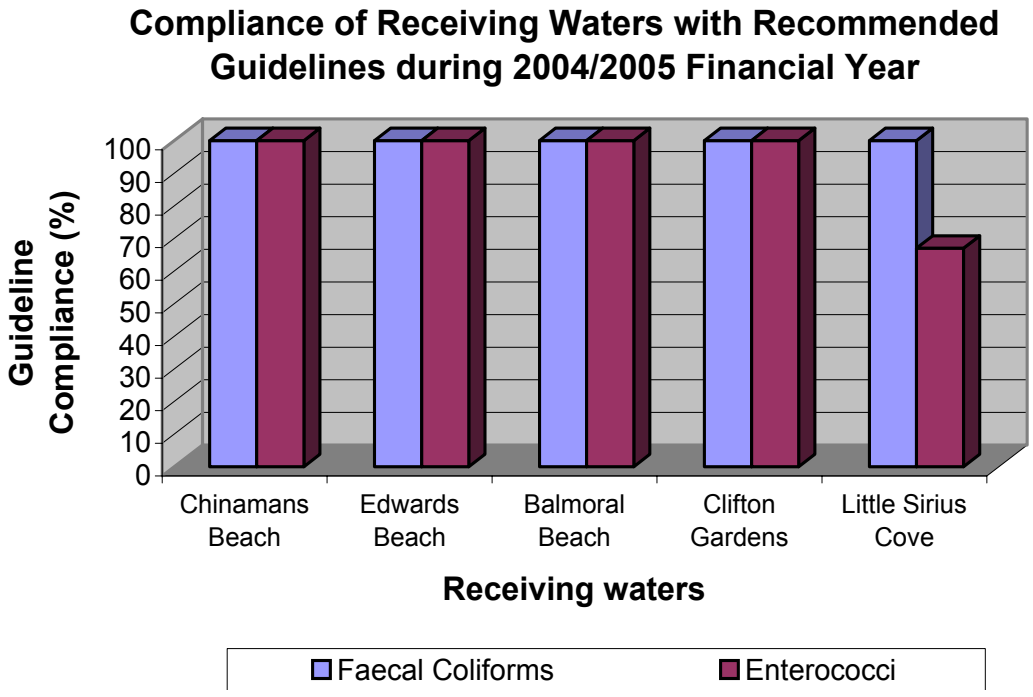

Figure5.1: Compliance of receiving waters with recommended guidelines during the 2004/05 financial year.

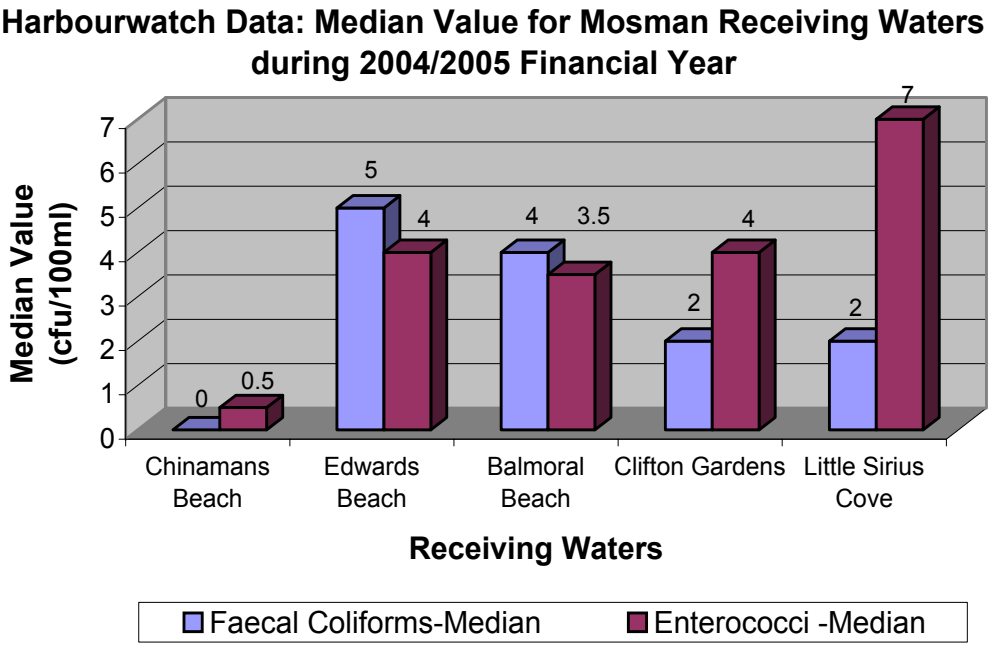

Figure 5.2: Median value for Mosman receiving waters during the 2004/05 year.

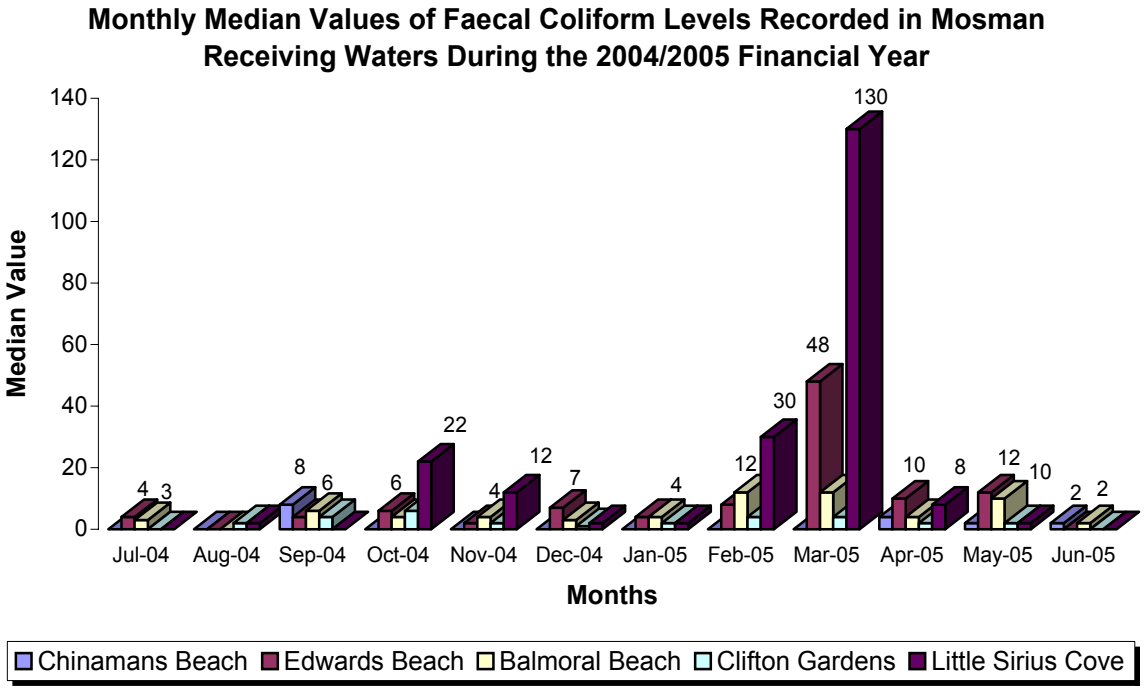

Figure 5.3: Median value for faecal coliform levels in Mosman waters during the 2004/05 year.

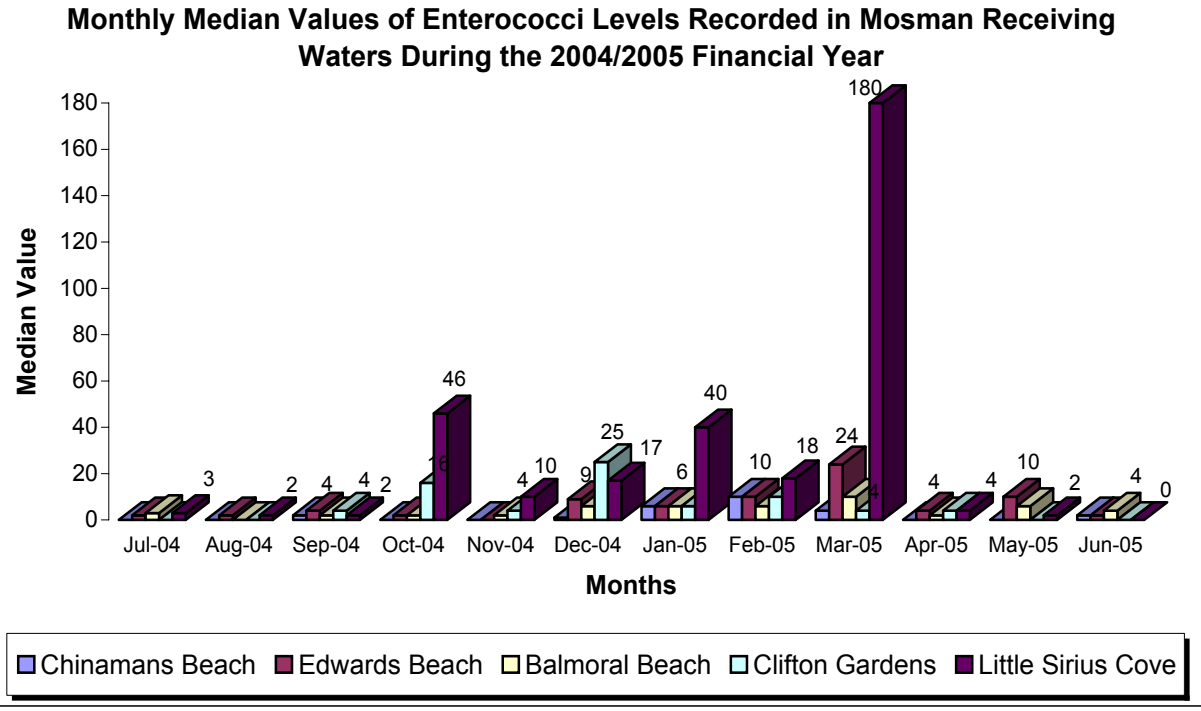

Figure 5.4: Median value for enterococci levels in Mosman waters during the 2004/05 year.

Algal Blooms

There were no reports of algal blooms recorded in waterways in Mosman during the reporting period.

Sewage Overflows

According to Sydney Water figures, during the reporting period the Northside Storage Tunnel captured 148 megalitres of effluent at Quakers Hat Bay (Sydney Water, 2005b). No overflows to the environment were detected, and this can again be attributed to the low rainfall across the catchment during the year.

Response

Council has continued to undertake on-ground projects to reduce the negative impact of polluted stormwater on both bushland areas and receiving waters, through its Community Environmental Contract (CEC). Greater detail on each of the individual projects is contained in the attached CEC Annual Report. A brief summary of projects is shown below.

Stormwater Pollutant Removal

During the reporting period, Council installed nine Stormwater Quality Improvement Devices (SQIDs) on stormwater outlets around Mosman. Council now has 29 SQIDs installed, which treat stormwater from 345 hectares of Mosman. The devices capture pollutants including leaves, litter and sediments from stormwater, before being discharged into harbour receiving waters.

During the financial year, Council's SQIDs removed a total of 266.52 tonnes of pollutants. The total amount of material removed from the SQIDs since installation is 920.33 tonnes.

Water Quality Monitoring

Seasonal monitoring of Mosman's Reference Site - Edwards Beach, was conducted over the spring, summer and autumn seasons during mid November 2004, February 2005 and May 2005 respectively.

Reference site monitoring has yet to be completed so data could not be accurately interpreted to provide a seasonal comparison. However, a snapshot of the overall quality of Edwards Beach is included below as an average, this data indicating the water quality of Edwards Beach to be good.

Table 5.1: Edwards Beach water quality

Water Quality Parameter	Average Concentration
Temperature	21ºC
pH	8.06
Dissolved Oxygen	8.25
Conductivity	49.6 ms/cm
Total Suspended Solids	12.7 mg/L
Total Nitrogen	0.4 mg/L
Total Phosphorus	**0.07 mg/L ***
Heavy Metal (lead, copper, zinc)	below quantifiable limits
Total Petroleum Hydrocarbons	below quantifiable limits
Oils and Grease	below quantifiable limits
Faecal Coliforms	8 cfu/100ml

* The figure in bold exceeds recommended ANZECC guidelines.

The wet weather monitoring component of the program, involving the monitoring of SQIDs during storm events, has also been implemented during the 2004/2005 financial year.

Wet weather monitoring of SQID CG2 Ashton Park -Taylors Bay was completed in October 2004. A total of eight storm events were monitored. Analysis of samples showed concentrations of total nitrogen and total phosphorus to exceed guideline levels both upstream and downstream of the SQID during each storm event, whilst concentrations of lead and suspended solids only exceeded guidelines upstream of the device occasionally.

Wet weather monitoring of SQID CB2, Rosherville Reserve commenced in January 2005 and will be completed by October 2005. Thus far six storm events have been sampled, results showing concentrations of total nitrogen and phosphorus to exceed guidelines both upstream and downstream of the SQID for each of the six storm events. Suspended solids and turbidity levels were found to exceed guidelines occasionally.

Statistical analysis and interpretation of the monitoring data will be provided once the wet weather monitoring of all three nominated SQIDs has been completed.

Regulation

During the reporting period, 16 Council Officers held authorisation under the Protection of the Environment Operations Act, including 13 Council Rangers, two Environmental Health Officers, a Waste Operations Officer and the Manager Environment and Services.

During the 2004/2005 reporting year, a total of 12 notices were issued to clean up or prevent pollution of waters under the Protection of the Environment (POEO) Act.

Environmental Management Plan Actions

Mosman Council's Environmental Management Plan includes the following actions to improve water quality:

• Install SQIDs and undertake creek rehabilitation works as per the CEC schedule. Quarterly Review September

• Undertake a monitoring program to evaluate the efficiency and effectiveness of SQIDs in the capture and removal of pollutants. To be completed by June 2006

• Review of SQID clean out and waste water disposal procedures and implement recommendations from the review. To be completed by September 2005

• Research and report upon the feasibility of introducing a private sewerage inspection program associated with property conveyancing. To be completed by December 2006

• Research and report upon the feasibility of rehabilitating (dechannelising) open stormwater culverts. To be completed by June 2007

• Collect, collate and report upon data from the State Government's Beachwatch program. Quarterly Review September

• Develop a plan to collect bio-indicator, and physical and chemical data from Mosman creeks. To be completed by September 2005

Water Supply and Consumption in Mosman

Condition & Pressure

Mosman's reticulated water supply is supplied to the Municipality by Sydney Water via the Ryde customer supply system. There were no reports of poor quality potable water during the year.

The main environmental impacts related to the provision of potable water to urban areas arise from the collection and storage of water supply in other catchments and the disposal of waste waters through the North Head treatment plant near Manly.

At the end of the reporting period, Sydney's dam storage levels were 38.3 percent, nearly 10% lower than at the end of the last year. Dam levels have been falling since 1998 as a result of drought and continued high demand. (SCA, 2005)

Mosman Water Consumption

Total Mosman water consumption in the 2004/05 reporting year was 3,040,296 kilolitres (KL), with an average consumption in houses of 283 KL per year and an in units of 132KL per year.

According to Sydney Water figures, average water consumption in Mosman fell 5.1% compared to 2003/04. This can probably be attributed to ongoing mandatory water restrictions. Consumption in houses fell 9.1 percent to an average annual consumption of 283 KL, and consumption in units fell 3.6 percent to 132 KL.

In comparison, the Sydney average consumption is 234 KL in houses, and 153 KL in flats and units. Households in Mosman who live in units use approximately 14 percent less water than the Sydney average, while households who live in houses use 20 percent more water than the average.

Above: More homes in Mosman are installing rainwater tanks.

Summary Code	No. of Meters	No. of Properties	Total Consumption 2004/05	Average Annual Consumption (KL) 2004/05	Consumption Change from 2003/04
Commercial	239	264	156,551	593	-4.40%
Houses	5,331	5,331	1,506,158	283	-9.10%
Industrial	5	5	1,592	318	18.20%
Other	188	338	370,559	1,096	6.40%
Units/Flats	1,317	7,604	1,005,436	132	-3.64%
Total	**7,080**	**13,542**	**3,040,296**	**225**	-5.06%

Table 5.2: Water consumption in Mosman in 2003/04

Mosman Council Water Consumption

Mosman Council water consumption has also fallen, due in large part to water restrictions. This has stopped the irrigation of parks and gardens, and active sporting fields are being irrigated for two three hour periods on Monday only.

In non-restriction times, irrigation accounts for between up to 70 percent of Council's water use. In the reporting period it accounted for about 55%.

Without adjusting for water consumption by commercial activities on leased Council property, Mosman Council's water consumption in 2004/05 was 56,511 KL, a reduction of 12 percent since 2003/04, and the lowest water consumption recorded since 1989/90.

A graph of Mosman Council water consumption is shown on the following page. Some facilities have been included in different categories this year, to better reflect their purpose, making comparison across categories more difficult.

Removing the impact of leased commercial buildings owned by Council, water consumption equates to about 37,000 KL.

It is important to note that these figures do not yet reflect water consumption at the Mosman Swim Centre. This centre is owned by Council and leased to a private operator, and water bills are handled by the owners corporation for the building in which the Swim Centre is contained.

Response

Water Restrictions

A significant reason for the reduction in consumption in Mosman is the ongoing implementation of water consumption restrictions imposed by Sydney Water.

Level Two water restrictions were introduced shortly before the beginning of this reporting year, in 1 June 2004.

Level Three water restrictions were introduced on 1 June 2005. (Sydney Water, 2005) Restrictions have reduced the number of times Council can water its ovals, significantly reducing Council's overall water consumption.

Every Drop Counts and Ongoing Asset Maintenance

The recommendations of Every Drop Counts, Sydney Water's demand management program, have been incorporated into ongoing asset maintenance. The water conservation measures implemented by Council have also been responsible for consumption reduction. Measures undertaken by Council include the installation of push button taps in public showers and taps at Balmoral and Clifton Gardens, and the installation of dual flush toilets in maintenance works in the Civic Centre.

Council will continue to review its water use, and develop new water savings actions, in developing its Water Savings Plan, as required by the NSW Government.

Development Control

A state government planning control called BASIX (which stands for Building Sustainability Index) applied to new dwellings assessed in Mosman from the beginning of June 2005. BASIX requires that new houses are at least 40% more water efficient than average. While applicants can achieve water efficiencies through any combination of measures they choose, BASIX is likely to make rainwater tanks almost mandatory in all new dwellings.

BASIX for multi-unit dwellings will be introduced on a voluntary basis for applicants from July 1 2005, and will be mandatory from October 1. (Department of Planning, 2005)

Rainwater Tanks & Greywater Reuse

Most rainwater tank installations don't require approval from Council, so it's difficult to measure how many have been installed onto existing

Above: Auto stop push button tap at Balmoral outdoor shower.

Facility Type	1986/ 1987	1987/ 1988	1988/ 1989	1989/ 1990	1990/ 1991	1991/ 1992	1992/ 1993	1993/ 1994	1994/ 1995	1995/ 1996	1996/ 1997	1997/ 1998	1998/ 1999	1999/ 2000	2000/ 2001	2001 /2002	2002/ 2003	2003/ 2004	2004/ 2005
Community	1525	3090	3769	4819	7271	5709	4353	3579	2763	4370	3128	2851	3875	4317	3915	3669	3179	2837	7954
Club	20	779	542	600	758	828	461	609	346	210	633	101	58	238	178	289	312	153	0
Commercial/ Operational	3459	12407	12225	8651	5018	6340	5294	10146	11405	16368	15693	11536	13854	26835	23143	21782	20248	17501	17,187
Misc.	3	3687	4769	7472	7698	1594	5598	9447	6104	7234	7396	8636	6618	8170	7983	5906	5583	4787	5
Public Reserve	10819	51217	47695	29996	51755	53095	33133	57589	48510	46182	62564	61765	68933	52656	49895	70888	71261	39183	31,365
Standpipe Permit	0	0	0	0	0	0	0	0	2	107	84	14	0	53	18	73	11	7	0
kL/annum	15826	71180	69000	51538	72500	67566	48839	81370	69130	74471	89498	84903	93338	92269	85132	102607	100594	64468	56,511
kL/d	43.36	195.01	189.04	141.2	198.63	185.11	133.81	222.93	189.4	204.03	245.2	232.61	255.72	252.79	233.24	281.12	275.6	176.62	155.25

Table 5.3: Mosman Council water consumption

dwellings. Anecdotal evidence suggests that increasing numbers of residents are installing tanks to augment potable supply. Tanks of above 2000L capacity attract a rebate from Sydney Water.

Council is developing a greywater reuse policy, as there are some health issues related to the widespread reuse of greywater. The number of enquiries about greywater reuse systems has increased markedly.

Environmental Management Plan Actions

Mosman Council's Environmental Management Plan includes the following actions to address water demand:

• Research and report upon the feasibility of stormwater reuse, groundwater extraction and rainwater harvesting for a range of uses at Balmoral. To be completed by November 2005

• Research and report on the feasibility of using backwash water from the Mosman Swim Centre to irrigate Allan Border Oval. To be completed by November 2005

• Research and report upon non-mains based water supply options (including the reuse of sewage) for Council reserves. To be completed by June 2006

• Prepare greywater reuse system guidelines. To be completed by September 2005

• Investigate opportunities for large scale water sensitive urban design asset renewal projects consistent with the development of asset management plans and public domain improvement projects. To be completed by June 2006

• Develop a Rainwater Tank Policy. To be Completed by December 2005

• Review On Site Detention Guidelines. To be Completed by December 2005

• Implement outstanding Every Drop Counts recommendations. To be Completed by - December 2005

• Investigate the feasibility of setting up a water conservation community advisory service. To be completed by March 2006

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Biodiversity

Biodiversity: Summary of Indicators

Condition

Indicator	Result	Comments
Area of Mosman Council bushland under active management	30.5 ha.	Stable. 80% of bushland areas in Mosman under active management.
Number of native plant species recorded in Mosman	430	New count due in 2006 Flora and Fauna survey
Number of native animal species recorded in Mosman	221	New count due in 2006 Flora and Fauna survey.

Pressure

Indicator	Result	Comments
Area of bushland affected by stormwater	Estimated 50% of total bushland or 19.5 ha.	Calculations being verified by onground mapping.

Response

Indicator	Result	Comments
Ha of bushland under contract greater than 90% weed free that is representative of original vegetation type.	40%	Target of 40% achieved.

Bushland & Terrestrial Biodiversity

Condition and Pressure

Pressures on Mosman's bushland are little changed from those described in the 2003/04 comprehensive state of the environment report. Condition has improved due to the ongoing bushland management programs of Council described in the next section.

Flora and Fauna

A list of bird sightings in Mosman by local birdwatcher Barry Lancaster is shown on the following pages. While a list of birds has been included in past Flora and Fauna sightings, this list is important, because it shows onground sightings from recent years, and does not include unconfirmed or historical sightings.

During the year a Green Tree Snake (Dendrelaphis punctulatus) was sighted near Clifton Gardens. This non-venomous arboreal snake was not recorded in the 2000 Flora and Fauna Survey.

Response

Bushland Management Contracts

Council continued its bushland management contracts. The main indicator for this program is hectares of bushland under contract greater than 90 percent weed free that is representative of its original vegetation type

2004/05 target: 40% 2004/05 result: 40%

As stormwater is one of the main degrading influences on bushland quality, Council also measures the percentage of bushland affected by stormwater. To date, this has largely been determined from a desktop survey of Council bushland areas and known stormwater problem areas. To ensure better ongoing management, Council commenced a ground survey of stormwater affected bushland. Results should be reported in the next State of the Environment report.

Bushcare Program

Council continued to support the Bushcare program during 2004-05. There were approximately 130 active volunteers during the reporting period

Tree Planting

Council started a street tree planting program. During the year, Ironbarks (*Eucalyptus sideroxylon*) were planted along Spit and Military Rd. These trees will significantly improve canopy cover in some of the most urbanised areas of Mosman, and will significantly enhance the aesthetics of these roads.

Council continued to plant trees, shrubs, grasses and sedges of local provenance in Council's bushland reserves and open spaces during the year.

In all, over 3000 trees were planted in Mosman by Council over the reporting year. 500 were planted in streets and parks, 2475 were planted in bushland sites (including those managed by Bushcare groups), and 180 were planted during community tree planting days. Trees represented only 15 percent of all vegetation planted by Council during the year. 150 trees were removed.

Bushland Management and Fire

Vegetation in Mosman's bushland areas is actively managed with fire. During 2004/05 broad acre burns were undertaken at Sirius Park east with smaller pile burns conducted at a number of different locations. A fire management plan for each reserve has been developed, which stipulates an interval of 12 years between broad scale burns.

Phytophthora cinnamomi Management

Mosman Council continued to implement Phytophthora protocols in bushland areas. These were outlined in the previous state of the environment report.

Bushland Education

A Bushcare exchange was undertaken between Bankstown and Mosman Councils. The exchange was undertaken to reward bushcarers for their hard work, and broaden the appreciation of Bushcarers that they are part of a "bigger picture" of environmental restoration across Sydney. The exchange also gave Bushcarers a chance to look at different techniques used in the different ecological communities encountered during the exchange.

Several grant funded bushland education projects that have been outstanding for some years were completed. These included the installation of signage at several bushcare sites around Mosman.

Environmental Management Plan Actions

Mosman Council's Environmental Management Plan contains the following actions to manage terrestrial biodiversity:

• Manage the Middle Harbour catchment Contract for Bushland Restoration 2001 - 2011. Ongoing

• Manage the Port Jackson catchment Contract for Bushland Restoration 2001 – 2011. Ongoing

• Progressively implement the Unmade Roads Rehabilitation Strategy in accordance with the program timetable. Ongoing

• Co-ordinate and support Council's volunteer Bushcare Program. Ongoing

• Implement bushland management activities as per the CEC schedule. Ongoing

• Implement the 2005 - 2006 fire hazard reduction burn program. To be completed by June 2006

• Prepare the 2006 - 2007 annual fire hazard reduction burn program. To be completed by May 2006

• Engage a consultant to undertake a survey of bushland and unmade road reserves to identify the diversity of flora and fauna communities, determine habitat value and threats to the communities, and report on opportunities for conservation. To be completed by June 2006

• Develop a program to identify and map vegetation and habitat in non-bushland areas and on or adjacent to privately owned land in Mosman, and determine its habitat value. To be completed by June 2006

• Research and report upon opportunities for conservation of valuable privately owned bushland, including opportunities for incentives, rewards, awards and recognition. To be completed by December 2006

• Implement the plan for the future management of Phytophthora cinnamomi as adopted by Council on 4 April 2005. Quarterly Review September

• Review, revise and implement the 5 year rolling program for the upgrade of walking tracks and trails through Council's bushland areas. Annual Review May

Develop a pest animal (feral and companion) control program. To be completed by - July 2007

• Map on the GIS the location of stormwater discharges affecting bushland. To be Completed by October 2005

• Map on the GIS the location of track upgrade works, soil testing and monitoring sites, and re-vegetation sites. Annual Review June

• Implement the Urban Forest Policy as identified in Program 5.05 Trees of MOSPLAN 2005 - 2008.Quarterly Review - September

• Survey boundaries of Council bushland areas to determine extent and impacts of private property encroachments. To be completed by May 2007.

Aquatic Biodiversity

Condition and Pressure

Generic conditions and pressures on Aquatic Biodiversity are little changed since the 2003/04 comprehensive report.

Fish Species in Chowder Bay

During the reporting year, Australian Museum scientists announced the discovery of a previously undiscovered species of fish from the waters of Chowder Bay, in an area controlled by the Royal Australian Navy.

The Sydney Scorpionfish is a small fish that superficially looks similar to the Red Rockcod. It has 12 venomous dorsal fin spines and a mottled reddish colouration.

It differs from the other species in the genus *Scorpaenopsis* by the presence of only one spine on the upper operculum and 30 to 34 scale rows along the side of the body.

Other fishes in the genus *Scorpaenopsis* are mostly found in tropical and subtropical waters. The Sydney Scorpionfish is found 850 km further south into temperate waters than all other species in the genus.

The Navy restricts access to the area, and fishing, diving and swimming are prohibited. The fish were collected as part of a survey of exotic marine species in Sydney Harbour that was commissioned by the Sydney Ports Corporation. (Australian Museum, 2005)

Sydney Harbour contains approximately 600 fish species. (Australian Museum, 2002)

Sydney Scorpionfish (photo from Australian Museum)

Invasive Species

The infestation of invasive seaweed species *Caulerpa Taxifolia* was still present in Clifton Gardens during the year. There are concerns that the seaweed can smother native seagrasses. Growth of the weed is generally constrained during the cold waters of winter.

Response

Asset Management

Council has ensured that its maintenance of marine assets conserves biodiversity.

Council must periodically remove the nets which surround its swimming enclosures at Clifton Gardens and Balmoral. As these nets age, they become colonised by seaweed and algae, which forms good habitat for marine species, notably several species of seahorse. Traditional methods of net replacement have the potential to seriously affect populations living in this human-made habitat.

As a result of these concerns, Council has consulted with local SCUBA divers and conservationists, and liaised with the NSW Department of Primary Industries to develop a protocol for net replacement. This ensures that all marine fauna on the net is removed before it is detached, and an additional check is made as the old net is being dragged towards shore, and again as it is landed on the beach.

Taxifolia Working Group

Sydney Coastal Councils Group (SCCG) has established a *Caulerpa taxifolia* working group. The group has obtained maps of seagrass coverage in marine areas around relevant Council areas and will assess the extent to which *Caulerpa* is harming seagrass beds.

Environmental Management Plan Actions

Mosman Council's Environmental Management Plan contains the following actions to manage aquatic biodiversity:

• Research and report upon the opportunity to have NSW Fisheries establish an aquatic reserve/s in harbour waters surrounding Mosman. To be completed by March 2006.

• Develop an environmental management policy and guidelines for the management of marine assets, facility development, redevelopment, and asset refurbishment and renewal. To be completed by December 2005

• Liaise with NSW Fisheries and enforce all regulations and policies restricting near shore boating activities. To be completed by March 2006.

Intertidal Biodiversity

Condition and Pressure

Pressures, including modification of rocky foreshores to create seawalls, beach cleaning, and collection of intertidal organisms for food and bait, are little changed from the previous comprehensive report.

Response

Ecological Seawall Projects

Following the completion of the Quakers Hat Bay Seawall project, which is detailed in the previous report, The Centre for Ecological Impacts of Coastal Cities (EICC), in association with Mosman Council and other local government and industry partners, submitted an application to the Australian Research Council, for funds to conduct and study additional habitat enhancing seawall works. The result of the grant application is not yet known.

Ongoing monitoring of the Quakers Hat Bay Seawall by the EICC has identified that recruitment of new intertidal life on the wall has been very slow. This may be due to the nature of the wall's construction, or a high dependency on other populations of intertidal creatures in the Bay, which is relatively secluded from other parts of the harbour.

Chinamans Beach Monitoring Program

As detailed in the previous report, beach cleaning may be associated with negative effects on the biodiversity of sandy beaches.

In order to address this Council began hand cleaning Chinamans Beach in October 2004. The hand cleaning program is designed to remove litter without removing natural materials such as shells and seaweed.

Council staff also began a photo point monitoring program of the beach, to assess the cleanliness of the beach and the effectiveness of the program in removing litter and other undesirable wrack. The program has also been designed to examine the accumulation, movement and natural degradation of natural wrack (including seaweed) without mechanical cleaning, and monitor any other changes in the beach condition.

Photo point monitoring was conducted twice a week for three months in spring, and twice a week for three months over winter. This allowed staff to gain an understanding of the beach dynamics in different seasons. The spring monitoring program was finished after the end of the reporting year, and recommendations of the report have been incorporated into Council's environmental management plan.

Environmental Management Plan Actions

Mosman Council's Environmental Management Plan contains the following actions to manage intertidal biodiversity:

• Consider intertidal biodiversity issues in undertaking seawall works as per the CEC schedule. Quarterly Review

• Pending funding from the Australian Research Council, commence participation in the Centre for Research on Ecological Impacts on Coastal Cities' seawall habitat project. To be commenced by January 2006

• Undertake Chinamans Beach Photo Point Winter Monitoring Program and report upon the need for beach raking, the ideal cleaning frequency and the viability of hand cleaning. To be completed by October 2005

• Liaise with NSW Fisheries to review Council's role in the management of Intertidal Protected Areas, including enforcement and training requirements. To be completed by August 2005

Chinamans Beach with some wrack accumulation

References

Australian Museum, 2002, ***Mammals of Sydney Harbour*** [Online] Available: http://www.livingharbour.net/mammals/index.htm [Accessed 5 October 2004]

Australian Museum, 2005, ***Sydney Scorpionfish Scorpaenopsis insperatus Motomura*** [Online] Available: http://www.amonline.net.au/fishes/fishfacts/fish/sinsperatus.htm [Accessed 26 August 2005]

Biodiversity Appendix: Bird Species in Mosman

Common_name	Latin_Name	Race	Area	Activity	Gender	Quantity
Australian Gannet	Morus serrator		Middle Head	Flying	Immature	1
Australian King Parrot	Alisterus scapularis		Bradley's Head	Among trees	Both	5
Australian Magpie (tibicen)	Gymnorhina tibicen	tibicen	Bradley's Head	On ground	Adult	3
Australian Maned Wood Duck	Chenonetta jubata		Zoo Wharf to Bradleys Head	Among trees	Both	2
Australian Pelican	Pelecanus conspicillatus		Zoo Wharf to Bradleys Head	Perched on a wharf	Adult	5
Australian Raven	Corvus coronoides		Bradley's Head	Among trees	Adult	3
Australian White Ibis	Threskiornis molucca		Rawson Park	On ground	Adult	1
Barn Owl	Tyto alba		Mosman	Roosting in a tree	Adult	1
Black-faced Cuckoo-shrike	Coracina novaehollandiae		Bradley's Head	Among trees	Adult	1
Black-faced Monarch	Monarcha melanopsis		Bradley's Head	Among bushes	Juvenile	1
Brown Cuckoo-Dove	Macropygia amboinensis		Bradleys Head to Clifton Gardens	Perched in a tree	Adult	1
Brown Thornbill	Acanthiza pusilla		Bradley's Head	Among bushes	Adult	>10
Brush Wattlebird	Anthochaera chryssoptera		Rawson Park Bush	Among trees	Adult	2
Channel-billed Cuckoo	Scythrops novaehollandiae		Arbutus and Lane	Flying	Adult	3
Chestnut Teal	Anas castanea		Bradleys Head to Clifton Gardens	At Seaside	Male	1
Common Bronzewing	Phaps chalcoptera		Georges Heights Oval	Foraging on the ground	Adult	1
Common Koel	Eudynamys (scolopacea) cyanocephala		Mosman	Perched on a pole	Adult	1
Common Myna	Acridotheres tristis		Balmoral Beach	On ground	Adult	>50
Common Starling	Sturnus vulgaris		Rawson Park	On ground	Adult	>10
Common Tern (longipennis)	Sterna hirundo	longipennis	Balmoral Beach	Perched on wires	Adult	3
Crested Pigeon	Ocyphaps (Geophaps) lophotes		Rawson Park	On ground	Adult	2

Crested Tern (Aus)	Sterna bergii	cristata	Balmoral Beach	Perched at seaside	Adult	>10
Crimson Rosella (East)	Platycercus elegans	elegans	Bush on Harbour side of Georges Oval	Perched on a sign, man made object.	Adult	2
Darter	Anhinga melanogaster		Pilot Base	Perched on a wharf	Both	2
Dollarbird	Eurystomus orientalis	pacificus	Bradley's Head	Perched in a tree	Adult	2
Eastern Reef Egret (dark morph)	Egretta (Ardea) sacra	dark	Bradley's Head	Feeding at waters edge	Adult	1
Eastern Rosella	Platycercus eximius		Bradleys Head to Clifton Gardens	Flying	Adult	2
Eastern Spinebill	Acanthorhynchus tenuirostris		Bradleys Head to Clifton Gardens	Among bushes	Both	2
Eastern Whipbird	Psophodes olivaceus		Bradleys Head to Clifton Gardens	Among bushes	Adult	1
Eastern Yellow Robin (B)	Eopsaltria australis	australis	Bradley's Head	Among bushes	Adult	1
Fan-tailed Cuckoo	Cuculus flabelliformis		Bradleys Head to Clifton Gardens	Among trees	Adult	1
Galah	Eolophus (Cacatua) roseica-pilla		Rawson Park Oval	On ground	Adult	1
Golden Whistler	Pachycephala pectoralis		Georges Heights to Rawson Park Path	Among bushes	Male	1
Goldfinch	Carduelis carduelis		Georges Heights to Rawson Park Path	Among bushes	Adult	2
Great Cormorant (Aus)	Phalacrocorax carbo	carboides	Zoo Wharf to Bradleys Head	Perched on a wharf	Adult	2
Grey (White) Goshawk	Accipiter novaehollandiae		Georges Heights to Rawson Park Path	Perched in a tree	Adult	1
Grey Butcherbird (A)	Cracticus torquatus	torquatus	Wyargine Reserve	Among trees	Family Group	3
Grey Fantail (B)	Rhipidura fuliginosa	alisteri	Bradleys Head to Clifton Gardens	Among trees	Adult	1
Grey Shrike-thrush (A)	Colluricincla harmonica	harmonica	Bradleys Head to Clifton Gardens	Among trees	Adult	1
House Sparrow	Passer domesticus		Sirius Cove to Zoo Wharf	Among bushes	Both	>3
Laughing Kookaburra	Dacelo novaeguineae	minor	Bradley's Head	Among trees	Adult	3
Little Black Cormorant	Phalacrocorax sulcirostris		Balmoral Beach	Perched on a wharf	Adult	>5
Little Corrella	Cacatua sanguinea		Arbutus and Lane	Feeding in a tree or bush	Adult	>50
Little Pied Cormorant	Phalacrocarax melanoleucas		Balmoral Beach	Perched on a wharf	Adult	1

Magpie-lark (A)	Grallina cyanoleuca	cyanoleuca	Georges Heights Oval	On ground	Both	3
Masked Lapwing (B)	Vanellus miles	novaehol-landiae	Wyargine Reserve	On ground	Adult	2
Nankeen (Australian) Kestrel	Falco cencroides		Bradleys Head to Clifton Gardens	Flying	Adult	1
New Holland Honey Eater	Phylidonyris novaehollandiae		Bradley's Head	Among bushes	Adult	3
Noisy Friarbird	Philemon corniculatus		Bradley's Head	Among trees	Adult	3
Noisy Miner	Manorina melanocephala		Bradley's Head	Among trees	Adult	>50
Pacific Black Duck	Anas superciliosa		Bradleys Head to Clifton Gardens	At waters edge	Adult	1
Pied Currawong	Strepera graculina		Georges Heights Oval	Among trees	Adult	>5
Rainbow Lorikeet (East))	Trichoglossus haematodus	moluccanus	Bradleys Head to Clifton Gardens	Among trees	Adult	>50
Red Wattlebird	Anthochaera carunculata		Georges Heights Oval	Among trees	Adult	1
Red-browed Finch	Neochmia temporalis		Georges Heights to Rawson Park Path	Among bushes	Adult	>10
Red-whiskered Bulbul	Pycnonotus jocosus		Bradleys Head to Clifton Gardens	Among trees	Adult	1
Rock Dove	Columba livia		Mosman	On ground	Adult	>20
Rose Robin	Petroica rosea		Bradleys Head to Clifton Gardens	Among bushes	Female	1
Rufous Fantail	Rhipidura rufifrons		Bradleys Head to Clifton Gardens	Among trees	Adult	1
Scaly-breasted Lorikeet	Trichoglossus chlorolepi-dotus		Bradleys Head to Clifton Gardens	Perched in a tree	Adult	1
Silver Gull	Larus novaehollandiae		Balmoral Beach	At Seaside	Adult	>50
Silvereye (Grey-Backed)	Zosterops lateralis		Georges Heights to Rawson Park Path	Among bushes	Adult	2
Southern Boobook	Ninox novaeseelandiae		Muston Street	Perched in a tree	Juvenile	1
Spotted Pardalote	Pardalotus punctatus		Bradley's Head	Among trees	Both	>5
Spotted Turtle Dove	Streptopelia chinensis		Bradley's Head	Among trees	Adult	1
Sulphur Crested Cockatoo	Cacatua galerita		Bradley's Head	Among trees	Adult	3
Superb Fairy Wren (East)	Malurus cyaneus	cyanochla-mys	Bradleys Head to Clifton Gardens	On ground	Both	6
Tawny Frogmouth	Podargus strigoides		Arbutus and Lane	Perched on a post	Adult	1
Tree Martin	Hirundo nigricans		Penquin to Pilot Station	Flying	Adult	>5

Variegated Fairy Wren (lamberti)	Malurus lamberti	lamberti	Bradley's Head	Among bushes	Both	>30
Welcome swallow	Hirundo neoxena		Rawson Park	Flying	Adult	3
Whistling Kite	Haliastur (Milvus) sphenurus		Bradley's Head	Perched in a tree	Adult	1
Whistling Kite	Haliastur (Milvus) sphenurus		Rawson Park	Flying	Adult	1
White Browed Scrubwren	Sericornis frontalis		Bradley's Head	Among bushes	Adult	>30
White-bellied Sea-Eagle	Haliaeetus leucogaster		Bradley's Head	Flying	Adult	1
White-faced Heron	Egretta (Ardea) novaehollandiae		Penquin to Pilot Station	At waters edge	Adult	1
White-throated Needletail	Hirundapus caudacutus		Rawson Park	Flying	Adult	2
Willie Wagtail	Rhipidura leucophrys		Rawson Park Oval	On ground	Adult	1
Yellow Faced Honeyeater	Lichenostomus chrysops		Bradleys Head to Clifton Gardens	Among trees	Adult	1
Yellow-tailed Black-Cockatoo	Calyptorhynchus funereus		Bradleys Head to Clifton Gardens	Flying	Adult	8

Waste

Waste: Summary of Indicators

Condition

Indicator	Result	Comments
Total domestic waste to landfill in 2004/05	6214 tonnes	Increase of 5% since 2003/04

Pressure

Indicator	Result	Comments
Total waste to landfill per captia in 200/05	240 kg	Increase of 5% from since 2003/04.

Response

Indicator	Result	Comments
Diversion rate (recycling as a percentage of total waste stream)	46.27%	Diversion rates slightly lower than last year, but improved from the 42% recorded in 1999/2000.

Domestic Waste

Condition and Pressure

Council's waste collection and recycling system is similar to that described in the previous comprehensive report, and processes for recycling, landfilling and reprocessing are similar.

Waste Per Capita

Mosman residents generated an average of 240 kilograms of waste per capita in 2004/05. Council collected 6214.53 tonnes of domestic waste in 2004/05. This is an increase of five percent from the previous reporting period.

During 2004/05, Council collected 5662.99 tonnes of recyclable material, implying a diversion rate of 46.27%, which is marginally lower than last year. The diversion rate expresses the total amount of recyclable as a percentage of the total waste stream.

Recyclables in Waste Stream

It has been calculated that the percentage of materials remaining in the waste stream that could be diverted into Council's recycling system is approximately 20%. If Council, in partnership with SHOROC, is successful in establishing an alternative waste treatment facility in the region, to provide for more sustainable waste disposal and reduce dependence on landfill sites, reducing the amount of recyclables in the waste stream is important. Reducing the amount of recyclables in the waste stream will be a focus of Council's waste management in the future, and may involve the introduction of larger mobile garbage bins for recycling to replace the current crate system.

Energy and Greenhouse Gas Emissions

Council's contractors use an estimated 95,591 litres of diesel annually to collect and transport Mosman's waste and recyclables. The operations of the contractors fleet led to estimated emissions of 274 tonnes of CO_2 equivalent, a decline of nearly 18 percent since the last reporting year. This figure does not include transport of recyclable material from transfer station to recycling facility, or energy used in landfill management. Council's contractors recently introduced newer and more efficient vehicles, in line with contract conditions.

Decomposition of organic material in the anaerobic conditions of landfills also creates methane, a potent greenhouse gas, with 24 times the greenhouse warming potential of carbon dioxide. This can be largely avoided by removing organic matter from landfilled waste.

Response

Council has continued to manage its waste contract, which includes a number of actions to encourage waste reduction and recycling. These include variable rate pricing (smaller bins attract a smaller charge), and a domestic recycling system. Other newer actions to encourage diversion include Council's resolution to investigate an alternative waste treatment facility, and the rollout of bio-insert bins.

Bio-insert Bins

Bio-insert bins are 240L mobile garbage bins with a liner insert designed for green waste collection. Since the introduction of bio insert bins, the amount of green waste collected by Council has risen significantly.

Environmental Management Plan Actions

Council's Environmental Management Plan contains the following actions relevant to domestic waste and recycling.

• Review and report upon the viability of introducing a best practice domestic recycling system utilising Mobile Garbage Bins. To be completed by September 2005

• Undertake regular audits of the domestic waste stream Ongoing August 2005

• Through SHOROC, investigate the viability of a regional waste facility that recovers resources, generates energy and sustainably manages organic by-products. Annual Review – June

• Review and report upon Council's system of collection of organic material under the Waste and Recycling Services Contract. To be completed by June 2006

• Review Council's system of managing construction and demolition waste through the approvals process with a view to adopting a less prescriptive approach that; promotes opportunities for the use of recovered materials and recycling opportunities. To be completed by January 2006

• Promote disposal and recycling schemes for household and commercial hazardous and toxic wastes. Bi-annual Review, November

Non Domestic and Civic Waste Management

Condition and Pressure

Mosman Council generates waste from office and administrative activities and depot activities each year. No audit of waste and recycling generated by Council was conducted for this reporting year.

Council also disposes of wastes collected by SQIDs and waste generated by street, reserve, and beach cleaning activities.

In 2003/04, 476.10 tonnes was disposed of from street sweeping, and 268.62 tonnes was disposed of from beach and reserve cleaning, and 266.52 tonnes was disposed of after being removed from SQIDs.

The amount of waste generated from municipal maintenance activities is vastly greater than the amount of waste generated by Council administrative activities. However, many of Council's services are provided by external contractors, and therefore waste generated by these services is not reflected in Council's figures.

Response

Council has continued to operate its commercial waste business, and operate public place waste and recycling bins.

Environmental Management Plan Actions

• Council's EMP contains the following actions relevant to Council, public and commercial waste and recycling.

• Develop and adopt a sustainable procurement policy and procedures manual to complement Council's Procurement Policy. To be completed by December 2005

• As part of the development of the sustainable procurement policy investigate the opportunities afforded to Council by joining the Local Government Buy Recycled Alliance. To be Completed by July 2005

• Lobby for more comprehensive Extended Producer Responsibility programs. Ongoing

• Undertake regular audits of waste generated from Council facilities. Ongoing February 2006

• Based on findings of audits, develop a strategy to reduce the amount of waste generated from Council facilities. To be completed by March 2006

• Concurrent with the development of Council's Sustainable Procurement Policy and Guidelines, investigate the opportunities for the prevention of waste generated through Council's works and services contracts. To be completed by December 2005

• Audit toxic and hazardous materials used by Council and contractors and recommend alternatives products or processes. To be Completed by March 2006

• Develop an illegal dumping strategy primarily focussing on units, townhouses and commercial areas. To be Completed by March 2006

• Develop a litter prevention strategy that integrates approaches including; education (leading to behavioural change), regulation and enforcement (penalties), and structural approaches (signage, public place litter and recycling bins). To be Completed by March 2006

• Concurrent with the development of the Litter Prevention Strategy review the viability of introducing public place recycling stations in key public access areas. To be completed by March 2006

• Concurrent with the development of Council's Sustainable Procurement Policy and Guidelines, investigate the opportunities for the use of recovered materials through Council's works and services contracts. To be completed by December 2005

• Provide support for Clean Up Australia Day. Ongoing March annually

Heritage

Aboriginal Heritage

Condition and Pressure

The condition of and pressures on Aboriginal heritage in Mosman is little changed since the 2003-04 comprehensive report.

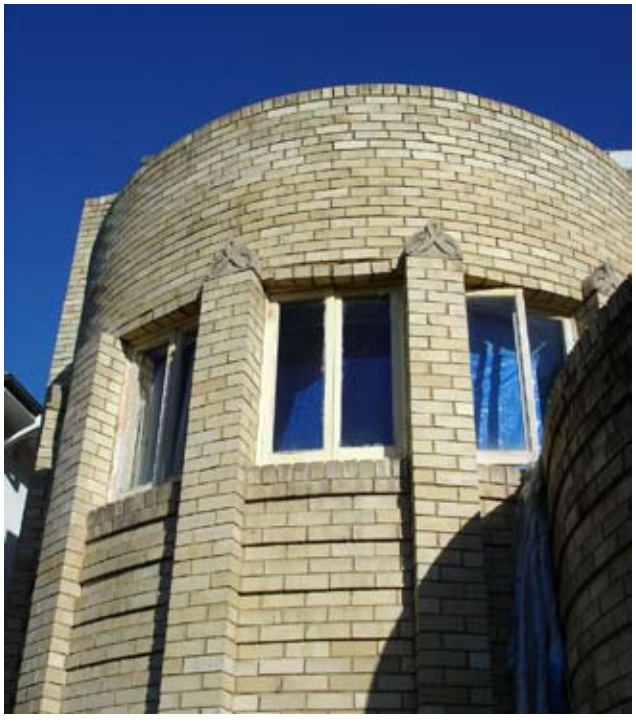
Response

The Aboriginal heritage study, which was organised by Mosman Council and the NSW National Parks and Wildlife Service (now part of DEC) was completed during the reporting period. Major aspects of the study were detailed in last year's report.

There are three volumes of the report. Volume One is available to the public, and Volumes Two and Three are being kept confidential as they contain site identification information.

Protocols for access to sites and data recording are being developed; and sites suitable for interpretation are being identified.

Below and right: 5 Morella Rd



Non Aboriginal Heritage

Condition and Pressure

Condition and pressures are largely unchanged since the last report.

Response

Land Use and Strategic Planning

Mosman Council has announced that it is planning to review its Local Environmental Plan (LEP). This may have some implications for the framework within which heritage is managed locally.

5 Morella Rd

During the reporting period, Mosman Council made a submission to the Heritage Council of NSW to list 5 Morella Rd as a property of heritage significance at state level.

The Heritage Council has subsequently informed Council that it is intending to list the property on the state heritage register.

Council's heritage advisor has noted that: "No. 5 Morella Road is an outstanding example of the Burley Griffin style of architecture within the Mosman Area and has been assessed as being of State significance. Built for the Parer family the house combines elements of Art Deco and Romanesque details in a unique form set in a native landscape. The house is the work of Eric Nicholls the partner of Walter Burley Griffin who continued his practice after Griffin's untimely death in the mid 1930s."

The gardens and building of 5 Morella Road show signs of severe and long term neglect, and Council hopes that listing the property on the State Heritage Register will ensure the current owners meet minimum maintenance standards as stipulated in the Heritage Act 1977.

Local Heritage Assistance Fund

In 2004/05 there were eight successful applications for Mosman Council's Heritage Assistance Fund with a total value of $20,000. Mosman has hundreds of properties that are either listed heritage items or within Heritage Conservation Areas. All are eligible to apply for financial assistance under the Fund. Funding is matched dollar for dollar by owners and is often the incentive for projects to be undertaken. Works undertaken included restoration of tessellated tiles, repair of canopy shingling and verandah railing, replacement and restoration of windows and window frames, and replacement of picket fencing.

Above: Property improvements as a result of the Local Heritage Assistance Fund.

Conservation of the Barn

Mosman Council has continued to work with 1st Mosman Bay Scouts to assist in the conservation of "The Barn" the oldest building on the north shore of Sydney. Historical background on this building was contained in the previous report.

Geotechnical investigations have been undertaken by the Scouts' consultant. The extensive works required to make the site stable and safe will be extensive, and the Scouts have been endeavouring to obtain additional grant funds to match existing contributions from Council and the Federal Government. Council has undertaken works to ensure that the property is not being harmed by ongoing unmanaged stormwater and sewer discharges.

Curlew Camp Artists' Camp

In the 1880s Australian artists including Arthur Streeton and Tom Roberts established an artists' camp on the shores of Sydney Harbour on Little Sirius Cove near Curraghbeena Pt. The artists who stayed and painted at the camp were part of a movement loosely known as the Australian Impressionists, and they introduced a new way of depicting the Australian landscape.

Mosman Council has engaged heritage consultants Godden Mackay Logan to prepare a strategy for the interpretation and management of the site. This is likely to include a walking track through the site, interpretative signage and a viewing platform at the camp. The project was inspired after Mosman resident John Dansie, rediscovered stairs that formed part of the original walking track to the camp.

Environmental Management Plan

Heritage has not been specifically addressed by Council's Environmental Management Plan.

Noise

Noise Management in Mosman

Condition and Pressure

Pressures are little changed from the last reporting year. Common sources of noise complaints in Mosman include: air conditioners, swimming pool pumps, barking dogs, early morning garbage collections or commercial delivery vehicles, construction noise, refrigeration compressors, and intruder alarms on cars and properties.

The number of noise complaints received is not significantly different to other reporting years.

Response

Council has continued to use planning strategies to avoid future noise problems, and has continued to apply the Protection of the Environment Operations Act 1997 (POEO) and the Protection of the Environment Operations (Noise Control) Regulation 2000 when a regulatory response is required.

There were 366 noise complaints during the reporting period. Nearly half of these complaints related to barking dogs, and 40% to construction noise.

During the reporting period, Council issued five prevention notices for noise offences, under the POEO Act. Two of these related to noisy commercial ventilation, one related to noisy commercial deliveries, and two related to noisy domestic air conditioning and ventilation.

Environmental Management Plan

Noise has not been specifically addressed by Council's Environmental Management Plan.