



SYDNEY REGIONAL COASTAL MANAGEMENT STRATEGY



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FOREWORD

The Sydney coastal region encompasses a rich diversity of natural and cultural assets and resources that support an assortment of industrial, residential and leisure activities. These include extensive commercial, industrial and residential developments; commercial fishing and mariculture; shipping; waste treatment and disposal and a variety of recreational activities such as bathing, fishing, boating and tourism activities. This strategy covers the Sydney coastal region defined as the local government areas of the Sydney Coastal Councils Group and the adjacent marine waters within three nautical miles of the coastline. The strategy is, however, applicable to Sydney's entire coastal zone and will be distributed widely.

Sydney's coastal environment and its assets are under intensive pressures from high population densities and competing demands for available resources threatening the natural balance of the remaining natural areas. The development and use of these fragile ecosystems has led to their gradual degradation.

The Sydney Regional Coastal Management Strategy recognises these pressures and impacts. It also recognises that coastal management is very much a cross-sectorial activity with the three spheres of government, industry and the community sharing responsibilities for its management.

The purpose of the strategy is to provide stakeholders with an action-orientated, strategic framework to focus and guide coastal planning and management practices into the next century. This model management tool heralds a new cooperative and integrated approach for coastal management in Sydney, with the establishment of a Regional Steering Committee consisting of all key coastal management stakeholders, who guided the development of the strategy and will encourage its implementation.

The strategy will achieve this by providing coastal management objectives and guiding principles with the central underlying focus being the achievement of ecologically sustainable development. The strategic actions are designed to achieve the outcomes listed in Section 4 and address the key regional issues of Water Cycle Management; Nature Conservation; Public Access; Role of Government; Climate Change and Cultural Heritage identified during the development of the strategy.

On behalf of the Regional Steering Committee I would like to express my appreciation to the many community groups and individuals for their interest and ongoing involvement in the development of the strategy. I would also like to thank Professor Bruce Thom for his work in facilitating and documenting the outcomes of the ten coastal community workshops, and Geoff Withycombe for coordinating and drafting the strategy.



The strategy is unique and I commend it to all who have an interest in and responsibility for, the sustainable management of Sydney's coastal zone.

Patricia Harvey

Clr. PATRICIA HARVEY

*Chairperson of the Regional Steering Committee
Chairperson of the Sydney Coastal Councils Group Inc.*



ACKNOWLEDGMENTS

PROJECT FUNDING AND IN KIND SUPPORT

The project has been jointly funded through the Commonwealth Government (Environment Australia) and the State Government's Coastline Management Program through the Department of Land and Water Conservation's Coast and Riverine Section.

The financial assistance is supported by the Regional Steering Committee (RSC) organisations and the Sydney Coastal Councils Group (SCCG) and member councils through the provision of in kind support. RSC organisations include: the Australian Conservation Foundation; the Commonwealth Science and Industrial Research Organisation (CSIRO); the Department of Land and Water Conservation; the Department of Urban Affairs and Planning; Environment Australia (Portfolio Marine Group); the Local Government and Shires Associations of NSW; the Marine and Coastal Community Network; the Office of Marine Administration; the Nature Conservation Council of NSW; the NSW Environment Protection Authority; NSW Fisheries; the NSW National Parks and Wildlife Service; the Sydney Water Corporation; and the Waterways Authority of NSW. The SCCG member councils are: Botany Bay; Hornsby; Leichhardt; Manly; Mosman; North Sydney; Pittwater; Randwick; Rockdale; South Sydney; Sutherland; Sydney; Warringah; Waverley; Willoughby; and Woollahra.

The RSC would like to thank the Local Government and Shires Associations of NSW for supporting the RSC meetings.

THE COMMUNITY

The community was invited to participate in the development of the Sydney Regional Coastal Management Strategy (SRCMS) throughout its development and will be called upon during its implementation.

The RSC would like to thank the many members of the community and government agency representatives who assisted them to identify coastal management and planning issues of concern; perceived problems, constraints and opportunities associated with various coastal management issues; opportunities for improved management of Sydney's coastal zone; locations of concern in the study area; features and activities of special importance and strategic actions as well as those who commented on and contributed to the draft SRCMS.

The numerous types of groups and agencies who participated include: environment groups; precinct committees; community, resident, and progress associations; chambers of commerce; catchment management committees; industry groups; action groups; recreational groups, clubs and associations; State and national environment groups; Aboriginal groups; flora and fauna societies; bush and dunecare groups; coastcare groups; surf lifesaving clubs; federal, State and local government politicians; local government officers and council coordinated committees; State government agencies and departments; regional organisations of councils; universities; and individuals.

A full list of all groups and individuals who contributed to the development of the strategy is in Appendix 1.



ABBREVIATIONS

ABBREVIATIONS

ABS	Australian Bureau of Statistics
ACF	Australian Conservation Foundation
ALC	Aboriginal Land Council
ALGA	Australian Local Government Association
ANZECC	Australian New Zealand Environment and Conservation Council
CAMBA	China-Australia Migratory Bird Agreement
CLMC	Coastline Management Committee
CMC	Catchment Management Committee
CMT	Catchment Management Trust
CSIRO	Commonwealth Science and Industrial Research Organisation
CZM	Coastal Zone Management
DCP	Development Control Plan
DEST	Department of the Environment, Sport and Territories
DLWC	Department of Land and Water Conservation
DOP	Department of Planning
DUAP	Department of Urban Affairs and Planning
EA - PMG	Environment Australia-Portfolio Marine Group
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMC	Estuary Management Committee
EPA	Environment Protection Authority
EP&A Act	Environmental Planning and Assessment Act 1979
EPI	Environmental Planning Instrument
ESD	Ecologically Sustainable Development
GIS	Geographical Information System
GMR	Greater Metropolitan Region
GPT	Gross Pollutant Trap
ICZM	Integrated Coastal Zone Management
ILAP	Integrated Local Area Planning
IPA	Intertidal Protected Area
JAMBA	Japan-Australia Migratory Bird Agreement
L&EC	Land and Environment Court
LEP	Local Environmental Plan
LGA	Local Government Area
LGSA	Local Government and Shires Associations of NSW
MCCN	Marine and Coastal Community Network
MHWM	Mean High Water Mark
MOU	Memorandum of Understanding
NCC	Nature Conservation Council of NSW
NHT	National Heritage Trust
NP	National Park
NPWS	National Parks and Wildlife Service
NSW	New South Wales
NTT	Native Title Tribunal
OMA	Office of Marine Administration
OSD	On-site Stormwater Detention
RAC	Resource Assessment Commission
REP	Regional Environmental Plan
ROC	Regional Organisation of Councils
RSC	Regional Steering Committee
RTA	Roads and Traffic Authority
SB	Stormwater Board
SCCG	Sydney Coastal Councils Group Inc.
SEPP	State Environmental Planning Policy
SLSC	Surf Life Saving Club
SoER	State of the Environment Report
SRCMS	Sydney Regional Coastal Management Strategy
SSROC	Southern Sydney Regional Organisation of Councils
STP	Sewage Treatment Plant
SWMCC	State Water Monitoring Co-ordinating Committee
WA	Waterways Authority of NSW
WAP	Waterways Advisory Panel
WIRES	NSW Wildlife Information and Rescue Service



ONE

1. INTRODUCTION

The SRCMS has been prepared to coordinate and integrate relevant coastal planning and management activities, and the responsible organisations, to improve coastal management in Sydney. This strategy applies to the coastal zone between Pittwater Council in the north to Sutherland Council in the south, a key area not covered by the *NSW Coastal Policy, 1997* (see Figure 1 - Study Area Map). This is a dynamic strategy that will be evaluated annually and comprehensively reviewed five years after its adoption.



1.1 AIM OF THE STRATEGY

The aim of the SRCMS is to protect and conserve terrestrial and marine ecosystems in the study area, and to manage the social and economic conditions to achieve this, through the implementation of identified, sustainable coastal planning and management practices.

1.2 AREA THE STRATEGY APPLIES

The study area for the strategy applies to the local government areas of the SCCG and the adjacent marine waters within three nautical miles (5.5km) of the coastline (see Figure 1). (A description of the strategy area is located in section 1.5 and further detailed in Appendix 4.)

1.3 STRATEGY FRAMEWORK

The SRCMS provides an action-orientated management framework that is intended to guide coastal management and planning in the Sydney coastal region into the next century. The underlying focus of the strategy is the pursuit towards and achievement of ecologically sustainable development (ESD) of Sydney's coastal zone.

The SRCMS recognises the fact that Sydney's coastal zone is: continuously under intensive pressures from human activity; subject to a myriad of competing interests for its resources; and covered by numerous planning and management documents. It is managed by an assortment of State, local and Commonwealth government authorities, industry, the community and a variety of non-government organisations. A single management strategy based on ESD provides an opportunity for all management and planning stakeholders to reconcile their competing interests and ensure an equitable, integrated and sustainable management approach. This will be achieved through the implementation of sustainable coastal planning and management practices that will ultimately protect and conserve terrestrial and marine ecosystems.



The structure of the SRCMS is represented in the following flow chart.

DIAGRAMMATIC REPRESENTATION *Sydney Regional Coastal Management Strategy*

Ecologically Sustainable Development



Coastal Management Objectives



Coastal Management Guiding Principles



Management Outcome Statements

- | | |
|---------------------------|-----------------------|
| 1. Water Cycle Management | 4. Role of Government |
| 2. Nature Conservation | 5. Climate Change |
| 3. Public Access | 6. Cultural Heritage |



Strategic Actions Program
(stakeholder specific)

- | | |
|---------------------------|-----------------------|
| 1. Water Cycle Management | 4. Role of Government |
| 2. Nature Conservation | 5. Climate Change |
| 3. Public Access | 6. Cultural Heritage |



Monitoring and Evaluation Program

Annual Reports
5 Year Review

1.4 BACKGROUND

In the past 50 years Sydney's coastal zone has witnessed significant increases in population and tourism, and intensive residential, industrial and commercial development. The development and use of the sometimes fragile coastal ecosystems has led to the gradual degradation of these resources. The high population density of Sydney continuously threatens the remaining extremely sensitive natural coastal areas.

The SRCMS has been initiated to trial and assist in implementing the recommendations of the Resource Assessment Commission's, 1993 *Coastal Zone Inquiry: Final Report* and takes into account the *NSW Coastal Policy, 1997*, while specifically considering regional and local needs. The strategy has the support and involvement of key stakeholders in the region, an essential ingredient in achieving effective implementation.

A major component of the strategy is the integration of catchment and coastal management principles, taking into account the philosophies of integrated local area planning (ILAP) as a framework for promoting a strategic and integrated approach to the issues of regional coastal management. The implementation of the strategy will be used to demonstrate the benefits of such an approach. For the study area, this implies a cooperative and integrated approach to natural resource management encompassing land based and marine activities. The strategy addresses human activities, and their individual and cumulative impacts, within and outside the study area. A cooperative effort and support between all stakeholders and the community will be required to develop such an integrated and strategic approach. This strategy has been prepared to encourage such an approach.



1.4.1 IDENTIFYING THE NEED FOR THE STRATEGY

The project was initiated by the SCCG, consisting of 16 councils adjacent to marine and estuarine waters in Sydney. Councils are: Botany Bay; Hornsby; Leichhardt; Manly; Mosman; North Sydney; Pittwater; Randwick; Rockdale; South Sydney; Sutherland; Sydney; Warringah; Waverley; Willoughby; and Woollahra. The aim of the Group is to promote coordination between member councils on environmental issues relating to the sustainable management of the urban coastal environment.

The project was identified as necessary through investigations undertaken by the SCCG and through national and State inquiries into the coastal zone, particularly the Coastal Zone Inquiry, held between 1992 and 1993, and the NSW Government's review of the 1990 *Coastal Policy*, undertaken in 1994.

The SCCG adopted a position statement and agreed to obtain support and involvement for preparing and implementing a regional coastal management strategy from key stakeholders in 1994-1995. This cooperative approach is in line with the ILAP principles recommended during the Coastal Zone Inquiry, incorporated into the Commonwealth Government's 1995 *Coastal Policy* and supported by the Australian Local Government Association and the Local Government and Shires Associations of NSW. This involves the coordination of key stakeholders and their activities to work towards agreed outcomes.

1.4.2 ESTABLISHING A REGIONAL STEERING COMMITTEE



To achieve the integration of local needs with national and State coastal planning policies and strategies, and to ensure key stakeholders' participation in the process, the SCCG established an RSC of:

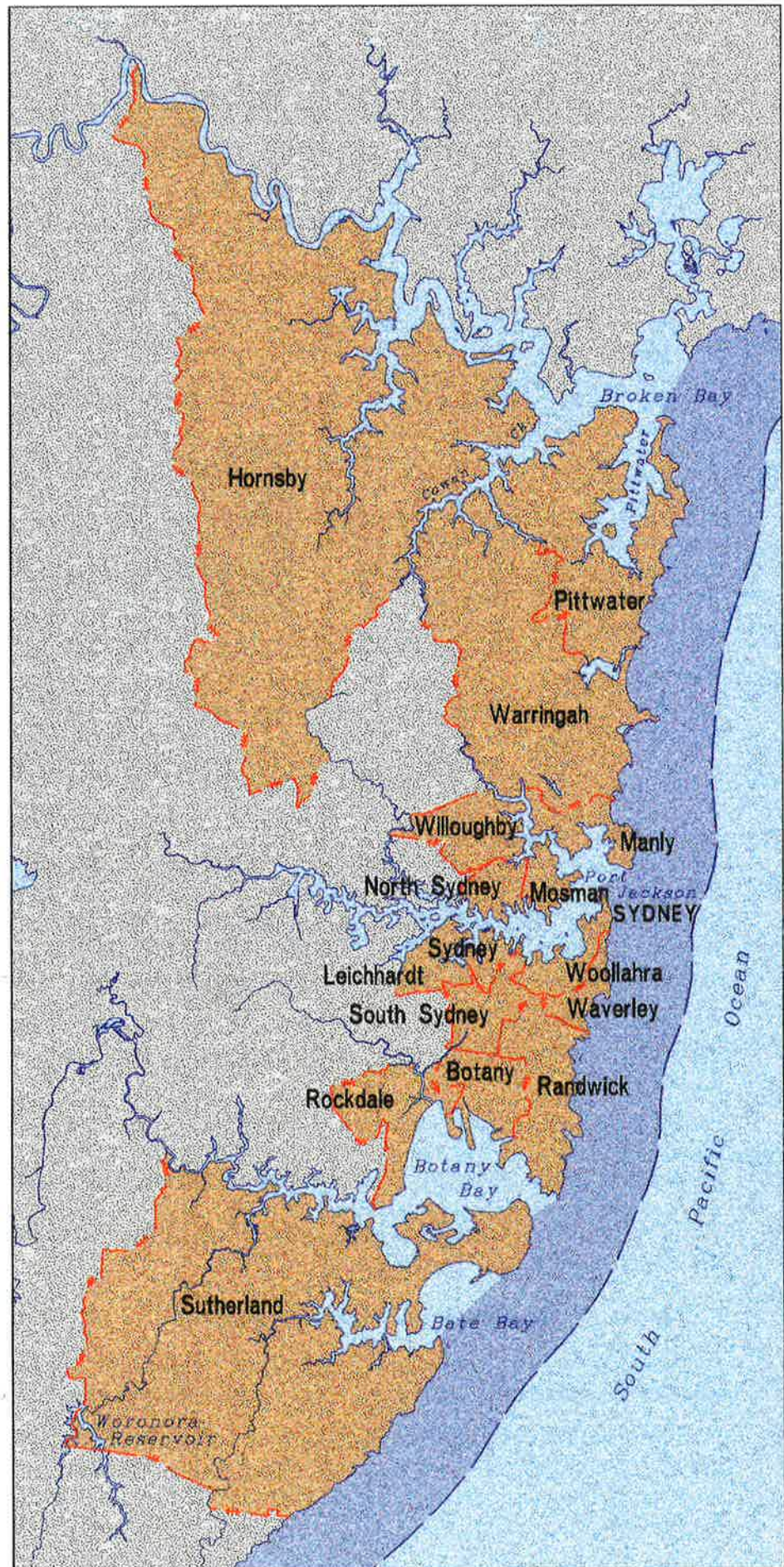
Australian Conservation Foundation (Ms Fay Sutton); Commonwealth Science and Industrial Research Organisation (CSIRO) (Dr Ian Webster); Department of Land and Water Conservation (Mr John Filocamo and Mr Kevin Hibbert); Department of Urban Affairs and Planning (Mr Richard Pearson); Environment Australia - Portfolio Marine Group (Ms Mandy Hillson);



FIGURE 1 - **STUDY AREA**



-  L.G.A.
-  Three nautical mile marine zone



Local Government and Shires Associations of NSW (Ms Michelle Chapman); Marine and Coastal Community Network (Mr Craig Bohm); Office of Marine Administration (Mr Mark Matchett); Nature Conservation Council of NSW (Ms Fay Sutton); NSW Environment Protection Authority (Dr Ross Higginson); NSW Fisheries (Mr Adam Smith); NSW National Parks and Wildlife Service (Mr Peter Shadie); Waterways Authority of NSW (Mr John Hickey); Sydney Water Corporation (Mr Greg Greene), Sydney Coastal Councils Group secretariat (Mr Michael Chanell and Mr Geoff Withycombe - Project Officer); and the SCCG member councils (Botany Bay, Hornsby, Leichhardt, Manly, Mosman, North Sydney, Pittwater, Randwick, Rockdale, South Sydney, Sutherland, Sydney, Warringah, Waverley, Willoughby and Woollahra). Further details of the formation of the RSC are presented in Appendix 2.

1.4.3 PRELIMINARY STUDY

An extensive preliminary study incorporating a literature review and community survey was undertaken to provide the RSC with baseline information to identify the broad coastal management issues, problems, constraints and practices in the study area. This included the identification and collection of relevant documentation concerning coastal management and its summation on a database, to enable the easy identification and extraction of information for the development of the strategy.

A regional coastal community survey program was also initiated during the first phase of the project, inviting all identified community groups to be involved in the strategy. The aims of the initial mail out survey were to determine: what coastal management issues, problems, constraints and opportunities are of importance to the community; what coastal features and/or activities in the respondents' areas are of special importance; and what coastal management activities the individuals or organisations are involved in, in the study area. Further details of the Community Consultation and Participation Program can be found in Appendix 1.

The aim of the preliminary study was to review and analyse existing land based and marine coastal management practices in the study area.

The objectives included:

- ◆ identification of broad regional coastal issues, problems and opportunities
- ◆ identification and review of regional coastal management issues and practices
- ◆ identification of other current practices that would be suitable for application on a regional scale
- ◆ analysis and review of the recommendations of the RAC's *Coastal Zone Inquiry: Final Report, 1993* and the *Draft Revised Coastal Policy for NSW, 1994* (NSW Coastal Policy, 1997 then not released)
- ◆ involvement of regional communities in developing and implementing the strategy (ongoing).



1.4.4 COMMUNITY CONSULTATION AND PARTICIPATION PROGRAM



To ensure community consultation, participation and support for the SRCMS, key stakeholders and relevant community groups were identified at the commencement of the development of the strategy and encouraged to participate at key stages.

The community consultation and participation program involved four major components:

- i) introductory letters of invitation and an initial coastal community survey
- ii) ten coastal community workshops
- iii) a two month public exhibition period for the draft strategy
- iv) ongoing newsletters and information exchange

The processes and outcomes of this program are presented in Appendix 1.

1.5 DESCRIPTION OF STRATEGY AREA

The coastal zone of the Sydney region, with its warm summer climate and ocean temperatures and its rich diversity of natural and cultural resources, supports many activities such as boating and bathing; recreational and commercial fishing and mariculture; many forms of industry; waste treatment and disposal; extensive residential and commercial development; transport; and the conservation of terrestrial and marine resources and natural and cultural heritage.

The Sydney region currently supports approximately 3,934,000 people, sprawling over approximately 12,000 km² (ABS, 1997). The coastal zone of Sydney extends from Broken Bay in the north to Port Hacking in the south, and contains approximately 86 km of ocean shoreline and over 340 km of estuarine frontage. There are 38 ocean beaches separated by high sandstone and shale cliffs, four drowned river valley estuaries (Sydney Harbour, Broken Bay (Hawkesbury), Port Hacking (Bate Bay) and Botany Bay) and four coastal lagoons (Manly, Curl Curl, Dee Why and Narrabeen) which periodically enter the ocean across the northern beaches. Sydney's coastline is fronted by a narrow and steep continental shelf extending less than 30 km from the shoreline after which the sea bed plunges rapidly from a depth of approximately 200 metres to as much as 3 - 4 km in some areas. This continental shelf formation results in the coastal region of Sydney being exposed to a high wave energy environment as well as a deep water wave climate, giving rise to impressive vertical sandstone and shale cliffs and very dynamic beach zones.

Many local councils in the Sydney coastal region have developed the landscape and made general facility improvements along Sydney's coastline. These include: the development of coastal walkways for the northern, eastern and southern beaches, featuring interpretative information and educational signage (see Appendix 6); educational resources, including environment centres at North Narrabeen, Manly, Bondi and Sutherland and community education programs; improved coastal viewing and recreation facilities; and formalised access to many sensitive areas.

1.5.1 PROTECTED AREAS

There are both marine and terrestrial protected areas in the coastal region of Sydney. There are seven National Parks with foreshore access (Royal, Sydney Harbour, Garigal, Ku-ring-gai, Georges River, Botany Bay and Lane Cove) and four Aquatic Reserves (Long Reef (Dee Why), North Harbour (Manly), Towra Point (Kurnell) and Shiprock (Port Hacking); see Appendix 6). NSW Fisheries has gazetted 14 Intertidal Protected Areas (IPAs) along Sydney's coastline where the collection of intertidal invertebrates is prohibited (see Appendix 6). The entire foreshores of Sydney Harbour, including the lower reaches of Parramatta and Lane Cove Rivers, are also IPAs.



1.5.2 HERITAGE

A heritage item is defined as those places, being components of the natural or cultural environment of Australia, that have aesthetic, historic, scientific or social significance or other special value for future generations as well as the present community (Australian Heritage Commission, 1991).

◆ Aboriginal Heritage

The Aboriginal people have inhabited this land for more than 60,000 years (Council for Aboriginal Reconciliation, 1992). The arrival of the First Fleet in 1788 and the subsequent white settlement led to the dispossession of thousands of Aboriginal people from their land around Sydney and from many aspects of their culture. Although only a vague picture remains of Aboriginal history in the Sydney region, it is well known that unlike other British colonies of the time this dispossession was never formalised through a treaty, but was achieved through expanding settlement and armed force with occasional savagery and violence which demoralised and decimated the Aboriginal population. In the first decade of European settlement at least two serious outbreaks of disease also contributed to the decimation of the Aboriginal population. By the middle of the nineteenth century dispossession of the Aboriginal people from the growing Sydney area was virtually complete.

Today there are approximately 1500 Aboriginal heritage sites within Sydney's coastal local government areas (see SCCG member councils SoERs, 1997) including rock engravings, drawings and stencils, shelters, shell middens, camp sites, burial sites, axe grinding grooves, waterholes and scarred trees.

◆ European Heritage

The Sydney coastal zone contains many of NSW's oldest and most significant European heritage items, including historical and architecturally significant residential and commercial buildings; navigation structures such as lighthouses, stone walls and crater huts; and defence structures such as gun emplacements and fortifications particularly in and around Sydney Harbour and West Head in Pittwater.

◆ Underwater Heritage

Maritime archaeological sites include shipwrecks, Aboriginal and historical sites and historical cultural deposits or structures that are underwater (Heritage Office, 1998).

Sydney's coastal zone and near shore waters are littered with 393 ships which sank or were scuttled between 1802 and the mid 1980s. Shipwrecks and underwater relics contain valuable information about naval architecture, engineering skills, commerce, social customs, shipbuilding and the lives of captains and crew. They also provide insights into the lives of the passengers and immigrants who travelled to Australia by sea (Heritage Office, 1996). There are several protected historic shipwrecks that are located off Sydney. Each of these wrecks relates to a unique part of Australia's history.



1.5.3 BIODIVERSITY

Many natural and landscape features of Sydney's coastal zone are considered to be of significant value. These include many parks and reserves, sandstone cliffs, headlands, rock shelves, beaches, remnant bushland, National Parks and other protected areas.



The coastal strip of Sydney supports a large variety of vegetation communities such as: eucalyptus forests; Hawkesbury sandstone open forests; Sydney sandstone woodland; coastal scrub; coastal grasslands; swamp forests; mangrove forests; seagrass beds; saltmarsh areas; littoral forests; sand dune vegetation; banksia scrubs; riverine vegetation; wet and dry coastal heath; wet and dry sclerophyll forests; and casuarina swamps (see SCCG member councils SoERs, 1997).

The coastal region also supports a wide diversity of fauna species including mammals, reptiles, amphibians, terrestrial and sea birds, fishes, crustaceans, molluscs, polychaete worms, arthropods and insects. There are numerous threatened species of flora and fauna in the Sydney region under pressure from urbanisation, degradation, loss of habitats, pollution and feral animals. Details of threatened species in the study area are presented in Appendix 3.

For further information regarding the physical descriptions of LGAs within the study area refer to Appendix 4.

1.6 IMPLEMENTATION

The implementation of the SRCMS will occur through the provision of letters of support and implementation commitment from the participating stakeholders, signed off by their Chief Executive Officers, Director Generals or General Managers.

The letters of support provide a tool that is intended to assist implementation of the Strategic Actions Program while considering and adhering to the philosophies, objectives and guiding principles contained within the strategy. (Refer to Section 3 for further implementation details.)

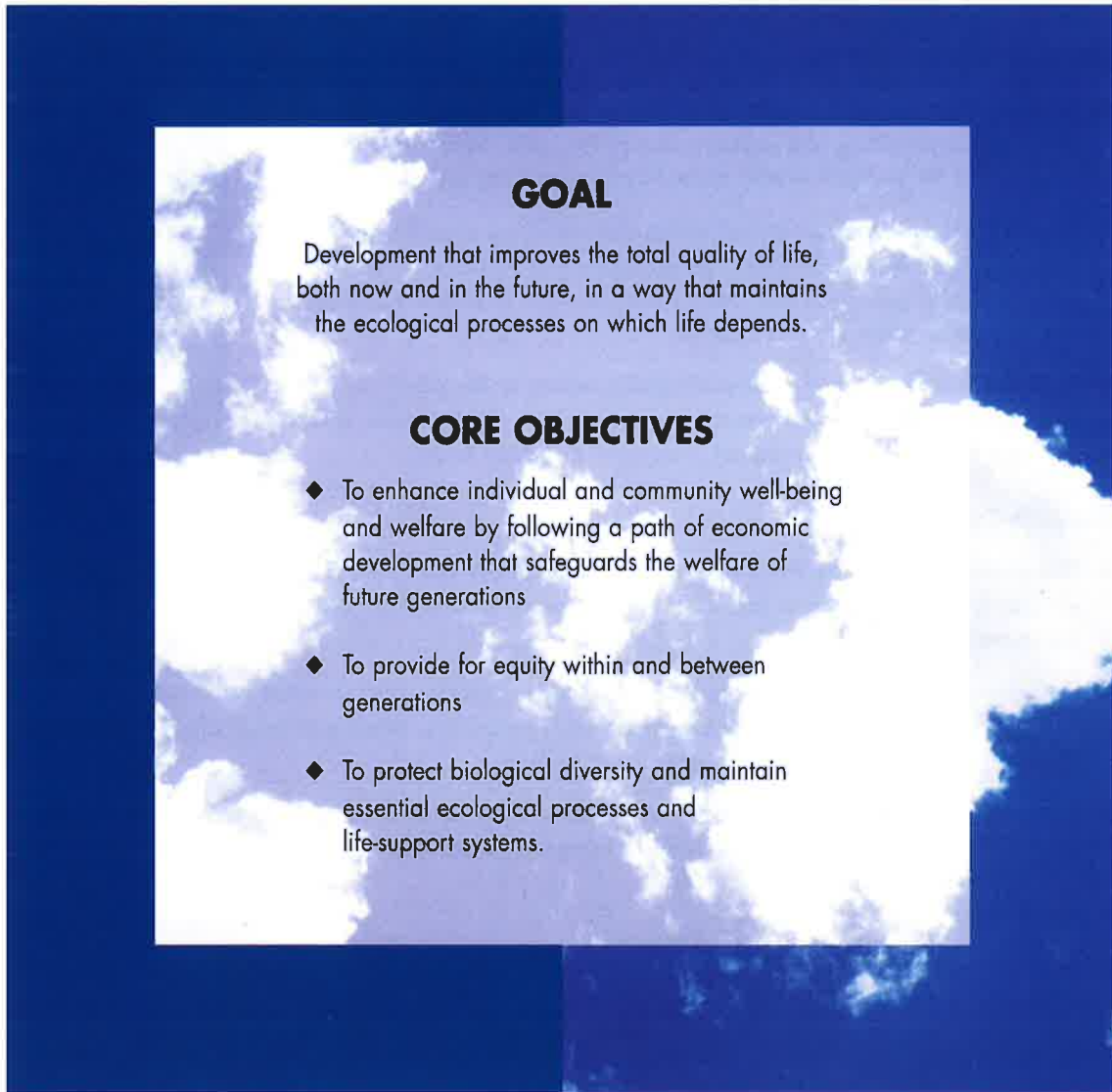
The SRCMS is to be considered and incorporated into relevant State and local planning policies and instruments, plans of management, and SCCG member councils' corporate management plans. This is to ensure integrated, responsible and ecologically sustainable development, conservation and use of Sydney's coastal ecosystems and resources. The SRCMS is also to be considered in the NSW Coastal Council's priority review of the Greater Metropolitan Region (GMR) as detailed in the *NSW Coastal Policy 1997*. This review is to ensure that the SRCMS and other existing and proposed planning and management mechanisms (such as local coastal management plans, urban settlement strategies, state and local planning instruments, and estuary and catchment management plans) adequately ensure the conservation and protection of Sydney's significant coastal attributes as the existing *Coastal Policy* does not cover this area. A list of State and local government planning instruments current to the end of 1997 is located in Appendix 5.



2. STRATEGY FRAMEWORK

The implementation of the SRCMS will be guided by the broad ranging coastal management goals, objectives and principles set out within this section. The underlying focus of the strategy is the pursuit towards and achievement of ESD of Sydney's coastal zone. The objectives and principles are intended to guide decision making and help integrate stakeholder coastal management practices and activities. They are also intended to guide the implementation of the Strategic Actions Program to achieve identified management outcome statements.

2.1 ECOLOGICALLY SUSTAINABLE DEVELOPMENT GOALS AND OBJECTIVES



GOAL

Development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends.

CORE OBJECTIVES

- ◆ To enhance individual and community well-being and welfare by following a path of economic development that safeguards the welfare of future generations
- ◆ To provide for equity within and between generations
- ◆ To protect biological diversity and maintain essential ecological processes and life-support systems.

The recently gazetted amendment to the *Local Government Act 1993*, entitled the *Local Government Amendment (Ecologically Sustainable Development) Act 1997*, enhances the environmental management roles of councils and requires councils to have regard to the principles of ESD in carrying out their responsibilities such as exercising approval powers.



2.2 COASTAL MANAGEMENT OBJECTIVES AND GUIDING PRINCIPLES

The following objectives and principles were developed after an extensive consultation process with conservation, industry and community groups and the three spheres of government. They are based on the recommendations of the RAC's *Coastal Zone Inquiry* and the Commonwealth Government's *Coastal Policy*. The listed principles are also consistent with the principles of the *National Strategy for Ecologically Sustainable Development*, the *NSW Coastal Policy 1997* and the Memorandum of Understanding for the Coastal Action Program signed by the Commonwealth of Australia, the State of NSW and the Local Government and Shires Associations of NSW.

PRIMARY OBJECTIVES FOR THE SYDNEY COASTAL REGION

Sustainable Resource Use

- ◆ To ensure that ecological integrity is maintained and that when available, coastal zone resources are fairly and equitably used by the public and commercial interests alike, so that the long-term benefits derived by the community can be optimised.
- ◆ To ensure that consequences arising from the dynamic nature of coastal environments are recognised. This includes taking into account natural fluctuations in sea level and climate, impacts associated with storm events, changes in shoreline position, and species mobility within coastal ecosystems.
- ◆ To maintain adequate and appropriate public access to the coast, so that it is possible to enjoy a range of recreational opportunities. Public access should be managed to protect coastal resources, ecosystems and public safety.

Resource Conservation

- ◆ To conserve and manage areas and features of significant ecological, physical, cultural, historical, landscape and scientific importance, so that their values are maintained.
- ◆ To maintain the biological diversity and productivity of marine and terrestrial ecosystems and natural processes within the coastal zone for present and future generations. Where environmental qualities have been degraded, remedial action should be taken to restore them.
- ◆ To maintain or restore the quality of coastal waters, so that there is no detrimental impact on the integrity of coastal ecosystems and their ability to support a range of coastal resources.

Public Participation

- ◆ To ensure that there is informed public participation in open, consultative processes dealing with planning and management of coastal ecosystems and resources.
- ◆ To recognise the interests in the coastal zone of Sydney's indigenous peoples and consider these interests in management arrangements.





Knowledge and Understanding

- ◆ To ensure and incorporate in decision making an understanding of coastal zone ecosystems and natural processes and the effects on them of human activities. This enhanced understanding should also be reflected in the skills of managers with responsibilities in the coastal zone.
- ◆ To encourage and support relevant decision making organisations in the preparation of management guidelines and codes of practice to deal with specific coastal management issues.

GUIDING PRINCIPLES FOR THE SYDNEY COASTAL REGION

Sustainable Resource Use

(i) Integrated Assessment and Decision Making

- ◆ Ecological integrity must first be maintained before resource use availability is assessed.
- ◆ The ecological and physical links between terrestrial and marine systems must be taken into consideration in the use and management of coastal zone resources.
- ◆ The environmental, economic, social and cultural values of coastal zone resources should be identified and the impacts of uses on those values should be determined as far as practicable before decisions are made;
- ◆ As far as practicable, assessment should be made on local, regional, national and global scales. They should take into account long-term impacts on the resource itself and on other resources and other users. As far as practicable, negative effects of resource use should be minimised.
- ◆ Cumulative impacts should be taken into consideration before decisions are made about the use of coastal resources where identified and where not. As far as practicable, cumulative impacts that have net negative effects should be avoided. It is also necessary to guard against the unintended negative effects of numerous small decisions by taking a broader strategic perspective on managing the coast.
- ◆ Coastal zone resource uses should be frequently monitored to ensure that impact assessments are accurate. If impacts differ from those predicted, remedial actions, including reviewing the resource allocation, should be undertaken.

(ii) The Precautionary Approach

- ◆ If there is a risk of serious or irreversible adverse impacts resulting from the use of a coastal resource, that use should be permitted only if those impacts can be mitigated.
- ◆ If a use is assessed as having a low risk of causing serious or irreversible adverse impacts, or if there is insufficient information with which to assess fully and with certainty the magnitude and nature of impacts, decision making should proceed in a conservative and cautious manner. The absence of scientific certainty should not be a reason for postponing measures to prevent or mitigate negative impacts.





(iii) Resource Allocation

- ◆ Coastal resources should be allocated to the use with the greatest long-term community benefit, where benefit is determined by taking environmental, economic, social and cultural considerations into account.
- ◆ The degree to which an activity is dependent on being located in the coastal zone should be taken into account when resources are being allocated. Priority should be given to uses that are particularly dependent on coastal locations or coastal resources.
- ◆ Alternative uses of coastal resources and opportunities for multiple or sequential use should be identified before allocation decisions are made. Multiple or sequential use of the coast should occur only when one use will not significantly diminish a resource's value for subsequent uses. When this is not possible resources in an area should be allocated to competing uses, so that the greatest range of beneficial uses is satisfied while minimising conflict between uses. At times it may be necessary to use areas for a single purpose or a restricted number of purposes.
- ◆ Coastal areas in or near their natural state should not be developed for uses that diminish their value.
- ◆ Development in the coastal zone should occur in accordance with predetermined strategic coastal management plans. Incremental linear development should be discouraged.
- ◆ Controlled public access to the coast, including beach, foreshore and marine areas, should be maintained for recreation, tourism and other public activities. The extent, location and type of access may need to be controlled to mitigate adverse effects of this access, to resolve incompatible uses, to conserve and maintain ecological integrity, or in the interest of public safety.

(iv) The User - pays Principle

- ◆ Prices charged for access to coastal resources should reflect all short and long-term environmental, economic and social costs associated with use of those resources.
 - ◆ If it is not possible to measure these costs their existence and relative importance should be taken into account before decisions are made.
- ◆ Economic instruments should be applied equitably across all sectors of society, although the circumstances of disadvantaged groups should be taken into account.
- ◆ The cost of development in coastal areas, including infrastructure costs, the costs of environmental management and monitoring, and the costs of managing natural hazards, should be borne by development proponents.
 - ◆ If a direct benefit accrues to the community as a result of a development it is reasonable that costs be apportioned between the developer and the community in accordance with the distribution of benefits.
 - ◆ When developments in the coastal zone will result in increased tourism and recreational use, the developer must assess the hazards that might affect users and to develop facilities for managing the increased use. Comprehensive arrangements should be established to meet the continuing costs of management and maintenance.

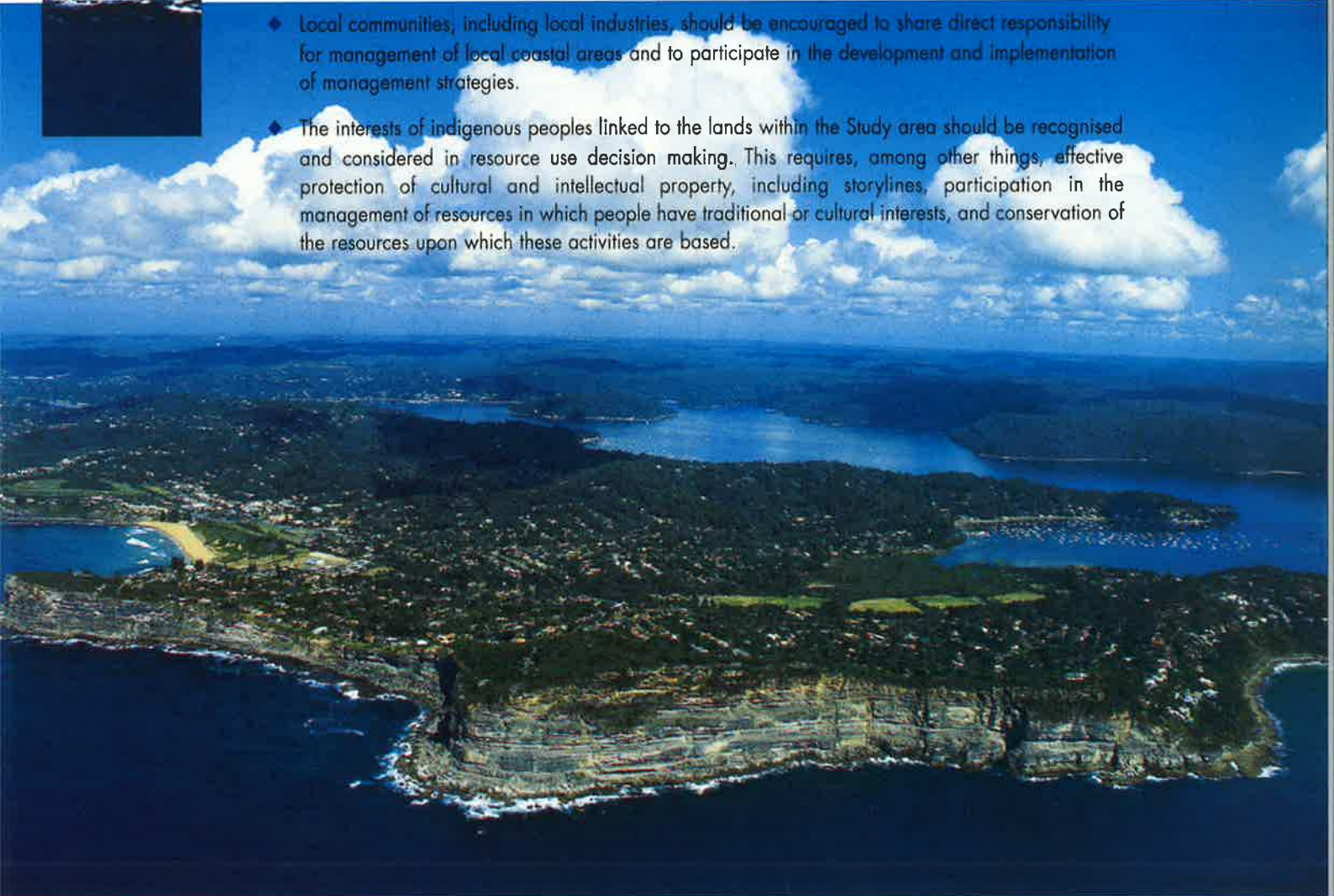




Resource Conservation

- ◆ Natural physical processes must be safeguarded. Development should take account of natural processes. If the disruption of natural processes is unavoidable every attempt should be made to limit that disruption and its impact on the area and adjoining coastal areas.
- ◆ As far as practicable, use of the coastal zone should have no or minimal adverse impacts on regional biodiversity and ecological processes.
- ◆ Sites of national, regional and local ecological, cultural, archaeological, historic and scientific significance should be identified and maintained.
- ◆ Waste disposal into coastal waters should be avoided and should only be an interim measure after all avenues for re-use and recycling of by-products of resources use have been exhausted.
 - ◆ Existing pollution discharges should be progressively reduced to levels where there is a minimal probability of adverse impacts on the receiving environment.

Public Participation

- ◆ Effective public consultation and participation are essential to the planning process and should be encouraged before decisions are made. For participation to be effective, the public requires sufficient information and opportunity to be informed about alternative uses. Processes for deciding about coastal zone management should be open and publicly documented to allow for scrutiny.
 - ◆ Local communities, including local industries, should be encouraged to share direct responsibility for management of local coastal areas and to participate in the development and implementation of management strategies.
 - ◆ The interests of indigenous peoples linked to the lands within the Study area should be recognised and considered in resource use decision making. This requires, among other things, effective protection of cultural and intellectual property, including storylines, participation in the management of resources in which people have traditional or cultural interests, and conservation of the resources upon which these activities are based.
- 





THREE

3. IMPLEMENTATION

Representatives on the Regional Steering Committee include:

- ◆ Australian Conservation Foundation
- ◆ Commonwealth Science and Industrial Research Organisation
- ◆ Department of Land and Water Conservation
- ◆ Department of Urban Affairs and Planning
- ◆ Environment Australia - Portfolio Marine Group
- ◆ Local Government and Shires Associations of NSW
- ◆ Marine and Coastal Community Network
- ◆ NSW National Parks and Wildlife Service
- ◆ Nature Conservation Council of NSW
- ◆ NSW Environment Protection Authority
- ◆ NSW Fisheries
- ◆ Office of Marine Administration
- ◆ Sydney Coastal Councils Group (Botany Bay, Hornsby, Leichhardt, Manly, Mosman, North Sydney, Pittwater, Randwick, Rockdale, South Sydney, Sutherland, Sydney, Warringah, Waverley, Willoughby and Woollahra Councils)
- ◆ Sydney Water Corporation
- ◆ Waterways Authority of NSW.

These organisations will work cooperatively to assist in the implementation of the SRCMS through the incorporation of integrated local area planning principles with total catchment management and ecologically sustainable development principles.

Participants agree that the SRCMS will be implemented in accordance with the identified coastal management objectives and guiding principles to assist in achieving sustainable coastal resource use. In addition to these principles, participants recognise:

- ◆ that coastal management is a cross sectoral activity requiring integration
- ◆ the roles of State and local government in land use planning and decision making, and the Commonwealth in relation to the national interest
- ◆ the value of a coordinated and integrated approach between the three spheres of government and the community in the implementation of the SRCMS.

To this end, RSC representative organisations will commit to and be responsible for the implementation of the SRCMS Strategic Actions Program.





All parties will cooperate to ensure that the Strategic Actions Program is implemented. Strategic actions deemed to be of "Essential" implementation priority are to be addressed within the first 12 months of implementation. During this first 12 months, actions identified as having "Highly Desirable" and "Desirable" implementation status are to be considered for implementation and acted on as deemed appropriate by participating organisations. It is intended to annually review and evaluate these priorities by considering the

annual implementation reports submitted by the primary responsible organisations. The strategic actions priority matrix will be used to reassess priorities while ensuring that all strategic actions are addressed within the first five years of implementation. Appendix 7, the Monitoring and Evaluation Program, contains the priority matrix used to assess the strategic actions in Section 4.

Where resource constraints inhibit implementation, participants agree to provide written explanation of implementation delays and to provide a firm commitment to an alternative implementation priority to the RSC. Organisations such as the CSIRO, ACF, NCC, MCCN and LGSA will work with the key implementation organisations.

The primary responsible organisations also agree to undertake the identified management actions taking full regard of existing legislature and regulatory provisions of both State and local government.

3.1 REGIONAL STEERING COMMITTEE

Participants in the SRCMS will continue their representation on the RSC to monitor and implement the strategy. The RSC will meet as required during the first year of implementation to develop the monitoring and evaluation program. The primary responsible organisations will meet to develop a monitoring and evaluation program that will suit their organisations and encourage the implementation of their strategic actions. Further detail is provided in Appendix 7. Once a monitoring and evaluation program is established the RSC will meet every six months.

If concerns are raised as to the responsibilities of particular actions or the achievement of implementation that may effect the underlying aim of the SRCMS, the SCCG will convene the RSC to review submissions from the aggrieved participants and recommend an outcome(s) consistent with the aims, objectives, guiding principles and outcome statements of the SRCMS.

3.2 STRATEGY REPORTING AND REVIEW

The SRCMS will be comprehensively reviewed by the RSC and the SCCG five years after its commencement to ensure that desired management outcomes are being achieved and that strategic actions and their priorities continue to be relevant and appropriate.

Participants will monitor their activities with regard to this strategy. RSC representative organisations will prepare brief annual reports (financial year) providing details of the implementation progress of identified strategic actions under their responsibility, providing details and reasons for delays in implementation and providing details of revised implementation priorities. This report is to be submitted to the RSC through the SCCG by no later than 30 November of each year. The five year review report will entail a comprehensive evaluation of the implementation of the strategy utilising the annual reports on progress and any other relevant material. The annual reports are also to be used to annually consider and re-evaluate the allocation of implementation priorities as "Essential" actions are completed and priority issues change over time. It is intended that all strategic actions will be addressed by participants within the first five years of implementation. Both the progress reports and the five year review reports will be published in an appropriate form to facilitate public response and comment.

4. STRATEGIC ACTIONS PROGRAM

The Strategic Actions Program is intended to guide and priorities the management actions of the participating stakeholders. The implementation of the Strategic Actions Program will be guided by the coastal management objectives and principles set out in Section 2, with the underlying focus being the achievement of ecologically sustainable development.

The Strategic Actions Program focuses on the key themes that were identified throughout the community consultation and participation phases of the SRCMS's development. These are:

- ◆ **WATER CYCLE MANAGEMENT**
- ◆ **NATURE CONSERVATION**
- ◆ **PUBLIC ACCESS**
- ◆ **ROLE OF GOVERNMENT**
- ◆ **CLIMATE CHANGE**
- ◆ **CULTURAL HERITAGE**



Each coastal management theme has an outcome statement to guide implementation and to focus on the overall desired management outcome for each of the six themes. A list of key regional issues is also provided for each coastal management theme. These have been identified by the regional community and all stakeholders involved in the preparation of the strategy.

The six management themes are further divided into key areas and issues that require a management response; these have been provided with a measurable outcome statement. Each strategic action includes the name of the organisation(s) that is primarily responsible for its implementation. The organisation(s) in bold is the core organisation responsible for coordinating other primary and supporting organisations and reporting annually on implementation. Those organisations listed as supporting organisations are to be consulted and involved in the implementation. Organisations with a primary responsibility are to work with supporting organisations to ensure a cooperative and focused approach to the implementation of the strategy. The priority components of the program have been divided into three levels: essential, highly desirable and desirable. Strategic actions determined to be essential will be addressed and acted on within the first 12 months of implementation. Highly desirable within the first two years and desirable within the first five years of implementation





WATER CYCLE MANAGEMENT

Sustainable management of Sydney's water is achieved by protecting natural flow regimes and natural processes, and enhancing water quality.

The management of water resources is based on the goal of achieving compliance with Australian and New Zealand Environment Conservation Council guidelines for the protection of aquatic ecosystems for marine, estuarine and fresh water bodies, the protection of water quality for primary contact recreation, and groundwater protection in Australia. Management of natural flows in rivers and streams will also satisfy the NSW Environment Protection Authority's Environmental Flow Objectives.



REGIONAL ISSUES

- ◆ Poor water cycle (catchment based) management.
- ◆ A lack of suitable water quality and river flow goals and objectives.
- ◆ A lack of policies to encourage water recycling and re-use.
- ◆ An insufficient use of semi-permeable surfaces to promote infiltration and reduce stormwater runoff.
- ◆ A lack of sufficient community understanding of existing water pollution legislation and sustainable management practices.
- ◆ Need for continuous improvement of the understanding and knowledge of groundwater resources, processes and potential degrading pollution impacts and practices.
- ◆ A general lack of good baseline water quality data on which to base good decision making.
- ◆ Consideration of developing an effective and efficient centralised water quality data management system that is easily accessible and useable by nature resource managers and the general community.
- ◆ Limited dissemination of water quality data and information to the general community.
- ◆ Major point and non point pollution sources in urban environments.
- ◆ The need for continuous understanding of the condition and capacity of existing sewerage and drainage infrastructure.
- ◆ The lack of implementation of consistent policies for the installation of on-site stormwater retention and detention devices.
- ◆ Continual loss of natural drainage water courses to pipes and channels.
- ◆ The impacts of companion animal faeces on receiving water quality.
- ◆ The significant localised and regional water quality impacts caused by the centralised sewerage system and the need to consider a move towards decentralisation.
- ◆ Illegal connections of stormwater to the centralised reticulated sewerage system.
- ◆ Need for further repair and replacement of defects in the existing sewerage and drainage infrastructure.
- ◆ A limited level of treatment at existing ocean sewage treatment plants (primary treatment) in Sydney.



1.1 GOVERNMENT POLICY AND COORDINATION

- Outcomes:**
- Integrated government water cycle management that incorporates catchment based pollution audits and cooperative water, stormwater and sewage management plans that promote innovative techniques.
 - A catchment based stormwater management plan that includes strategies to promote increased infiltration under suitable local conditions and reduced stormwater runoff using appropriate landscape and planning mechanisms.

1.1.1

Identify point and non-point water pollution sources considering various pollution sources including, though not limited to, sewage overflows, road runoff, industrial, commercial and residential discharges, waste sediments and gross pollutant contributions, and poor site controls. Education programs to run concurrently with the undertaking of catchment or sewerage system audits include encouraging the adoption and implementation of best management practices for the minimisation of water pollution by industry, developers, residents and waterway users.

Councils,
Sydney Water

CMCs, DLWC,
SB, WA, CSIRO,
EPA

Essential

Guidance Documents

- ◆ Australian Institute of Environmental Health, 1991, *Environmental Audit Training Seminar*.
- ◆ Warringah Council, 1995, *Environmental Audit of Brookvale Industrial Estate*.
- ◆ Warringah Council, 1995, *Brookvale Industrial Education Package - Environmental Information*.
- ◆ Botany Bay City Council, 1995, *Environmental Audit Program*.

1.1.2

Continue to identify and assess the condition and capacity of existing stormwater and sewerage infrastructure through existing systems or the development of catchment based stormwater and system based sewage management plans. Computerised monitoring and asset management systems should be developed as part of this process.

**Sydney Water,
Councils**

SB, WAP, RTA

Highly Desirable

Guidance Documents

- ◆ NSW EPA, 1997, *Draft Managing Urban Stormwater: Council Handbook*.

STRATEGIC ACTION	PRIMARY RESPONSIBILITY	SECONDARY RESPONSIBILITY	PRIORITY
<p>1.1.3 Encourage and support the continued development and implementation of innovative techniques for treating stormwater and sewage through the provision of grant funding to local government and government agencies through the NSW Government Waterways Package. Information is to be widely disseminated.</p>	<p>Councils, Sydney Water, EPA, DLWC</p>	<p>SB, WAP, CMCs</p>	<p>Highly Desirable</p>
<p>1.1.4 Take a more coordinated approach to addressing the environmental impacts of stormwater and sewage pollution for example through the development of a Statement of Joint Intent between Councils and Sydney Water, which identifies common treatment goals, objectives and timetables identifying remedial actions for water cycle management.</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ Sydney Water, 1997, <i>WaterPlan 21</i>. ◆ NSW EPA, 1996, <i>Memorandum of Understanding between Sydney Water Corporation & Environment Protection Authority</i>. ◆ Memorandum of Understanding between NSW Health and Sydney Water Corporation, 1997. ◆ DoP, NSW EPA, Hawkesbury Nepean Catchment Management Trust, Hornsby Council, Water Board, 1994, <i>Statement of Joint Intent/Community Contract for Berowra Creek</i>. 	<p>Councils, Sydney Water, SCCG</p>	<p>DLWC, EPA, NSW Fisheries, SB, WAP</p>	<p>Essential</p>
<p>1.1.5 Identify resource needs and, if necessary, direct increased resources to policing current water quality legislation to ensure legislation is effectively and efficiently enforced through the provisions of inspection staff and funding assistance e.g. enforcement of sediment controls.</p>	<p>EPA, Councils, Waterways Authority</p>	<p>SB, WAP</p>	<p>Essential</p>
<p>1.2 ON-SITE STORMWATER TREATMENT AND USE</p>			
<p>Outcome: Establish on-site stormwater retention and detention strategies that protect downstream and, promote infiltration, pollution removal and water use on a catchment basis.</p>			
<p>1.2.1 Install on-site stormwater retention (infiltration) and detention (hold and controlled release) devices (including constructed wetlands) in any new or redeveloped sites through the implementation of conditions of development consent and section 94 Contributions and other funding options, including through rate revenue, to minimise increased flooding, impact on ecological values in waterways and stress on existing drainage infrastructure.</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ SCCG, 1995, <i>On-Site Stormwater Detention Guidelines for Urban Councils</i>. 	<p>Councils</p>	<p>CMCs, SCCG</p>	<p>Highly Desirable</p>

STRATEGIC ACTION	PRIMARY RESPONSIBILITY	SECONDARY RESPONSIBILITY	PRIORITY
<p>1.2.2</p> <p>Develop policies and programs to encourage the recycling of water and the installation of rainwater tanks, through establishing development consent conditions, the development and/or revision of DCPs, and promoting the water conservation advantages of utilising rainwater tanks. Supporting information should be made freely available.</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ Water Board, 1992, <i>Rainwater Tanks</i>. ◆ Sutherland Shire Council, 1994, <i>Rainwater Tank Policy</i>. ◆ SCCG, 1995, <i>Urban Stormwater Management Model Policies and Guidelines</i>. 	<p>Councils</p>	<p>Sydney Water, SCCG, EPA, Dept of Health</p>	<p>Highly Desirable</p>
<p>1.2.3</p> <p>Promote infiltration and reduce stormwater runoff by continuing to develop policies and apply conditions on development that regulate landscaping to limit impervious surfaces.</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ SCCG, 1995, <i>Urban Stormwater Management Model Policies and Guidelines</i>. ◆ Ellis, M., et al., 1998, <i>Regional Energy, Water and Stormwater Efficiency Policy - Policy Toolkit and Reference Manual</i>. Regional Planning Partnership, Keys Young. ◆ Hornsby Council, 1997, <i>Sustainable Water Management DCP</i>. 	<p>Councils SCCG</p>	<p>DUAP, CMCs Sydney Water, SB</p>	<p>Essential</p>
<p>1.2.4</p> <p>Investigate the use of semi-permeable landscaping surfaces for wide application in public and private locations as a suitable alternative to traditional impervious surfaces that can be included in DCPs and conditions of consent.</p>	<p>SCCG, Councils</p>	<p>SB</p>	<p>Highly Desirable</p>

1.3 STORMWATER POLLUTION MITIGATION

Outcome: Consistent use of catchment assessment audits to determine the use of the most appropriate water quality control measures.

1.3.1

Develop and implement stormwater management plans, to ensure environmental plans, to ensure environmental and human health impacts of stormwater outfalls are assessed and remediated.

Councils, Sydney Water
CMCs,
EPA
Highly Desirable

Guidance Documents

- ◆ Water Board, 1992, *Coastal Stormwater Study - Final Report*.
- ◆ Manly Hydraulics Laboratory, 1995, *Sydney Ocean Beaches Stormwater Outlet Study*.

1.3.2

Continue to investigate and install stormwater pollution interception and treatment devices in high priority areas assessed via catchment studies.

Councils
SB, DLWC
Highly Desirable

Guidance Documents

- ◆ Manly Hydraulic Laboratory, 1998, *Sydney Coastal Councils Group - Stormwater Pollution Interception and Treatment System*.

1.3.3

Continue and/or reintroduce regular mechanical street sweeping as a means of improving receiving water quality.

Councils
SB, EPA, RTA
Highly Desirable

1.4 SOIL AND WATER MANAGEMENT CONTROLS ON DEVELOPMENT SITES

Outcome: Regionally consistent soil and water management practices for all development sites to protect aquatic habitats ecosystems and human health.

1.4.1

Control sediment from development (disturbed) sites (including acid sulphate runoff) through the active implementation of existing best practice guidelines (e.g. Department of Housing, DIWC, EPA, SB and the SCCG) and improved policing and enforcement of regulations, together with the development of education kits detailing developer responsibilities and infringement prosecution details.

Councils, EPA, DIWC, WA
SB, SCCG,
Dept of Housing
Essential

1.5 FLOODING

Outcome: Local floodplain management plans for all identified floodplains that protect aquatic and riparian ecosystems as well as life and property.

1.5.1

Continue to develop Floodplain Management Plans consistent with the NSW Government's Floodplain Development Manual and linked to the preparation of catchment based stormwater management plans.

Councils, DIWC

Sydney Water, SB,
State Emergency
Service, Floodplain
Management Committees,
RTA
Highly Desirable

Guidance Documents

- ◆ NSW Government, 1986, *Floodplain Development Manual*.

1.6 CHANNEL PROTECTION and REHABILITATION

Outcome: No new channelisation of natural water courses and continuing rehabilitation of channelised and piped drainage.

1.6.1

Identify stormwater drainage channels as part of the development of catchment based stormwater management plans and rehabilitated where practical, to near natural conditions, to assist in the treatment of stormwater pollutants. Where natural conditions exist, new development should not result in the piping of a water course and must maintain adequate vegetation buffer zones.

Councils

DIWC, Sydney Water, Dept of Health, CSIRO

Highly Desirable

Guidance Documents:

- ◆ NSW Government, 1993, *The NSW State Rivers and Estuaries Policy*.
- ◆ Brisbane City Council, 1995, *Urban Stream Rehabilitation: Principles and Guidelines*.
- ◆ NSW Government, 1996, *The NSW Wetlands Management Policy*.
- ◆ DIWC, *Draft Local Government Guidelines for Riverine Corridor Management*.

1.7 DOG CONTROL

Outcome: Raised awareness of all companion animal owners of the potential pollution impacts of their animals and what can be done to minimise the impact.

1.7.1

Provide increased public education to the community concerning responsible dog ownership (including cleaning up after dogs in public places and the environmental impacts of dog faeces). Actions include promotion of a code of conduct for responsible dog owners and the distribution of information via local electronic and print media. This is to be supported by the establishment of a Companion Animal Advisory Board to facilitate education programs.

Councils

EPA, Dept of Health
LGSA, Dog Associations,
SB, Dept. of Local
Government

Highly Desirable

1.7.2

Provide designated receptacles for dogs faeces, including the provision of collection bags. Continue to provided containers in all dog exercise areas with the consideration of extending this service into other public open spaces.

Councils

EPA, Dept of
Health, SB

Desirable

1.8 SEWAGE MANAGEMENT

Outcome: A sewerage system that can reuse 58 million litres/day (+/- 15%) of wastewater by 2000 and protect the environment from the effects of overflows. Management strategies that encourage innovative techniques to achieve these targets.

1.8.1 Investigate innovative techniques for treating sewage, including domestic on-site sewage storage, treatment and disposal systems for application in the Sydney metropolitan area, to reduce the pressure on the existing centralised reticulation system; to provide options for effluent mining and reuse that results in minimal local environmental impact; and to reduce the reliance on ocean and estuarine effluent disposal.

Guidance Documents

- ◆ NSW Dept of Health, DLWC, NSW Dept of Local Government, NSW EPA and DUAP, 1998, *Environment and Health Protection Guidelines: On-site Sewage Management for Single Households*.
- ◆ Sydney Water, 1997, *WaterPlan 21*.

Sydney Water

Dept of Health,
DLWC, Dept of
Local Government,
SCCG, EPA

Essential

1.8.2 Review (with the view to establish) sewage treatment options for isolated suburbs considering the costs and benefits of new on-site treatment technology and investigating options for possible effluent reuse.

Guidance Documents

- ◆ Sydney Water, 1995, *Putting Together the Solution - Managing Wastewater in the Sutherland Shire*.
- ◆ Sydney Water, 1995, *Cronulla Sewage Treatment Plant Upgrade Update*
- ◆ Sydney Water, 1997, *Bundeena and Maianbar Water Cycle Management Strategy - EISs 1996 & 1997*.
- ◆ NSW Dept. of Health, DLWC, Dept. of Local Government, NSW EPA and DUAP, 1998, *Environment and Health Protection Guidelines: On-site Sewage Management for Single Households*.

Sydney Water

Dept of Health,
SCCG

Highly Desirable

STRATEGIC ACTION	PRIMARY RESPONSIBILITY	SECONDARY RESPONSIBILITY	PRIORITY
<p>1.8.3</p> <p>Continue to investigate the re-use of effluent and bio-solids where ecologically sustainable. Reuse and recycling trials such as Sydney Water's Water Factory and Bio-solids Programs will be extended where necessary and appropriate to address emerging environmental and health issues.</p> <p>Guidance Documents:</p> <ul style="list-style-type: none"> ◆ ANZECC, 1992, <i>National Water Quality Management Strategy - Draft Guidelines for Sewerage Systems - Effluent Management</i>. ◆ Sydney Water, 1995, <i>Biosolids - Application and Research</i>. ◆ Sydney Water, 1995, <i>Water Reuse Projections to 2000</i> ◆ Sydney Water, 1996, <i>Community Views on Water Reuse</i>. 	<p>Sydney Water, EPA</p>	<p>Dept of Health, DLWC, Dept of Agriculture</p>	<p>Essential</p>
<p>1.8.4</p> <p>Continue to monitor the short and long-term impacts of the deep ocean outfalls on marine biota and water quality.</p> <p>EPA,</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ NSW EPA, 1992, <i>Environmental Monitoring Program - Monitoring Sydney's Deep Ocean Outfalls</i>. ◆ NSW EPA, 1993, <i>Environmental Guidelines - Discharge of Waste to Ocean Waters</i>. ◆ Sydney Water, 1995, <i>Environmental Indicators Monitoring for Sydney Water</i>. ◆ Sydney Water, 1996, <i>Ecological and Human Health Risk Assessment of Chemicals in Sewage Discharge to Ocean Waters</i>. ◆ NSW EPA, 1997, <i>Deep Water Outfalls - Findings of the Environmental Monitoring Program</i>. 	<p>EPA,</p>	<p>NSW Fisheries, Sydney Water, CSIRO, Research organisations</p>	<p>Highly Desirable</p>
<p>1.8.5</p> <p>Continue to monitor the illegal connection of stormwater to sewers through the Infiltration/Exfiltration Program.</p>	<p>Sydney Water</p>	<p>Councils</p>	<p>Essential</p>
<p>1.8.6</p> <p>Continue to identify, repair and/or replace defects in Sydney Water's reticulation sewers to prevent stormwater infiltration and the exfiltration of sewage from faulty components of the system.</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ Sewerage Overflow Licenses and Pollution Reduction Program being prepared by the EPA and Sydney Water. 	<p>Sydney Water</p>	<p>Councils</p>	<p>Essential</p>

1.9 BOAT WASTES and EFFLUENT PUMP OUTS

Outcome:

Disposal of boat wastes from vessels in line with the report of the Interagency Working Group on Sewage Pollution from Vessels. User contributions fees directed to address boating impacts on local waterways.

1.9.1

Review the adequacy of existing regulations covering boat pump out facilities for the Hawkesbury/Pittwater, Sydney Harbour, Botany Bay and Port Hacking areas. Determine the need for additional facilities and recommend strategies to address key problems.

WA

Councils, DLWC,
EPA

Essential

Guidance Documents

- ◆ ANZECC, 1997, *Best Practice Guidelines for Waste Reception Facilities at Ports, Marinas & Boat Harbours in Australia and New Zealand*.
- ◆ NSW EPA, 1998, *Environmental Guidelines - Best Management Practice for Marinas and Slipways*.

1.9.2

Investigate the feasibility of establishing a user pays system for boat pump outs in consultation with user groups. Revenue raised to be used specifically for associated water management activities, including the enforcement of boating regulations.

WA

OMA, EPA,
Boat Owners Association
of NSW, Boating Industry
Association of NSW

Essential

1.9.3

Develop and extend education programs for boat users regarding the location and use of boat pump out facilities, highlighting the legislative requirements and the detrimental environmental impacts of direct vessel effluent discharge into Sydney's waterways. The program could include, but not be limited to, the distribution of information sheets and pamphlets with the issuing and renewal of boating registrations and boating and mooring licenses.

WA

OMA, EPA

Essential

STRATEGIC ACTION	PRIMARY RESPONSIBILITY	SECONDARY RESPONSIBILITY	PRIORITY
<p>1.9.4 Encourage the implementation of ANZECC, 1997, <i>Best Practice Guidelines for Waste Reception Facilities at Ports, Marinas and Boat Harbours in Australia and New Zealand</i> and the NSW EPA, 1998, <i>Environmental Guidelines - Best Management Practice for Marinas and Slipways</i>.</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ ANZECC, 1997, <i>Best Practice Guidelines for Waste Reception Facilities at Ports, Marinas & Boat Harbours in Australia and New Zealand</i>. ◆ NSW EPA, 1998, <i>Environmental Guidelines - Best Management Practice for Marinas and Slipways</i>. 	WA, OMA	DLWC, Councils, EPA	Essential
<h2 style="text-align: center;">1.10 GROUNDWATER PROTECTION</h2>			
<p>Outcome: Authorities responsible for groundwater using the ANZECC <i>Guidelines for Groundwater Protection in Australia</i>.</p>			
<p>1.10.1 Undertake a study on the Sydney coastal region's aquifers in line with the Water Reform agenda (requiring all aquifers to be classified in relationship to their perceived risk of environmental degradation) to determine options for their future conservation.</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ DLWC, 1995, <i>Upper North Coast Groundwater Resource Study</i>. ◆ ANZECC, 1995, <i>Guidelines for Groundwater Protection in Australia</i>. ◆ NSW Government, 1997, <i>NSW State Groundwater Policy</i>. 	DLWC	Councils	Highly Desirable
<p>1.10.2 Actively implement the NSW Groundwater Policy. This is to include developing an appropriate groundwater pricing policy to reduce groundwater use and encouraging effluent reuse.</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ NSW Government, 1997, <i>NSW State Groundwater Policy</i>. ◆ ANZECC, 1995, <i>Guidelines for Groundwater Protection in Australia</i>. 	DLWC	Councils	Essential

1.10.3	Develop regional guidelines for the preparation of groundwater and aquifer plans of management, taking into account ANZECC <i>Guidelines for Groundwater Protection in Australia</i> . This is to include consideration of groundwater quality and its ability to be sustainably used.	Councils, EPA, Dept of Health	Highly Desirable
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- Guidance Documents**
- ◆ ANZECC, 1995, *Guidelines for Groundwater Protection in Australia*.
 - ◆ NSW Government, 1997, *NSW State Groundwater Policy*.

1.11 WATER CYCLE MANAGEMENT INFORMATION

Outcome: The awareness of the general community and local coastal managers is raised through information gathering and distribution.

1.11.1	Continue to maintain a database of known regulated contaminated sites and to update this database when new sites are identified. Record information about other sites through processes in place in the planning system. Encourage the implementation of procedures to record site history and to identify sites where a potential contaminated history exists as per the DUAP/EPA <i>Managing Land Contamination Planning Guides</i> .	Councils, CMCs, DUAP	Highly Desirable
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- Guidance Documents**
- ◆ ANZECC and National Health and Medical Research Council, 1992, *Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites*.
 - ◆ DUAP and NSW EPA, 1998, *Managing Land Contamination - Planning Guidelines*.

1.11.2	Develop plans of management for head waters of bays within Sydney Harbour, Pittwater/Hawkesbury, Botany Bay and Port Hacking to consider and address among other things, local contaminated sites, acid sulphate soils, leachates, dredging and sediment issues, and potential risks to ecosystem, biota and general public health. These plans should be consistent with stormwater management plans and be a component of plans developed by EMCs and CMCs (where they exist).	WA, NSW Fisheries, OMA, CMCs, DUAP, Dept. of Health, EMCs	Highly Desirable
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STRATEGIC ACTION	PRIMARY RESPONSIBILITY	SECONDARY RESPONSIBILITY	PRIORITY FRAME
<p>1.11.3 Investigate the establishment of a compatible regional data system for key stakeholders as a means of organising, collating and presenting data on water quality for the region.</p>	<p>EPA</p>	<p>ANZECC, SCCG, Sydney Water, Councils</p>	<p>Essential</p>
<p>1.11.4 Establish and continue an ongoing partnership to implement education programs on water quality issues that include, but not be limited to:</p> <ul style="list-style-type: none"> ◆ the negative impacts of using the stormwater system as a means of waste disposal ◆ links between water quality, ecology and health issues ◆ visitation of schools by government organisations in order to inform and educate children about water cycle and water quality issues ◆ the promotion of water conservation and reuse ◆ continuing to implement stormwater drain stenciling programs involving school and community groups, to help reduce pollution entering the drainage system ◆ promoting current legislation and water pollution infringement fines for water pollution ◆ improving communication on water management issues between major land holders and water users (such as vessel owners and users and golf clubs) and Sydney Water and Councils. <p>These education programs could be promoted through the issuing of water bills, rate notices, infringement notices, information sheets and pamphlets, local and regional print media, and electronic media.</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ DUAP and EPA, 1997, <i>What We Need is an Education Program</i>. 	<p>EPA, Councils</p>	<p>CMCs, NSW Fisheries, Sydney Water, DLWC, WA, NCC, ACF</p>	<p>Essential</p>
<p>1.11.5 Develop and distribute an information package to contact all rate payers and residents including details regarding the wise use of water, stormwater issues (with reference to location impacts), water conservation techniques and equipment, water conservation best practices, and details of relevant legislation and infringement fines.</p>	<p>Councils, Sydney Water</p>	<p>EPA</p>	<p>Highly Desirable</p>

1.11.6

Communicate water management research findings by the scientific community to policy making bodies, management stakeholders and the community.

Relevant Government Agencies, CSIRO

Research Organisations, CMCs

Essential

1.12 ESTUARINE DYNAMICS

Outcome: Estuary Management Plans that cover the Sydney coastal zone and fully account for estuarine dynamics in assessing developments and that will directly affect and be affected by these systems to a community acceptable risk level.

1.12.1

Establish Estuary Management Committees and prepare and implement management plans that: consider estuarine dynamics to identify the movement and resuspension of toxicants and nutrients, and polluted/degraded areas; and encourage estuary management practices and associated development activities that complement the dynamic system that they are an integral part of.

Councils, DLWC

EPA, CSIRO

Highly Desirable

Guidance Documents

- ◆ NSW Government, 1992, *Estuary Management Manual*.
- ◆ NSW Public Works, 1993, *Guidelines for Public Works Requirements for Sand & Gravel Extraction, Proposals in or Near Estuaries*.
- ◆ NSW Government, 1993, *The NSW State Rivers and Estuaries Policy*.

1.13 WATER QUALITY MONITORING

Outcome: Cooperative and coordinated systems that allow coastal managers to assess the impact of their actions and identify and rectify the causes.

1.13.1

Clarify the NSW Government's role in water quality monitoring in light of the Water Reform agenda to include the preparation of a protocol and mechanisms for public reporting.

EPA (SWMCC)

Streamwatch,
Waterwatch

Highly Desirable

STRATEGIC ACTION	PRIMARY RESPONSIBILITY	SECONDARY RESPONSIBILITY	PRIORITY
1.13.2 Monitor and encourage the development of predictive real time water quality models (based on field data) to provide real time public reporting to protect human health.	EPA (Beachwatch)	CSIRO, SCCG	Highly Desirable
1.13.3 Implement guidelines for the measurement of algal blooms so that water quality monitoring can better reflect possible associated risks to human health.	DLWC, Councils	EPA, Sydney Water, Dept of Health, CMCs	Highly Desirable
1.13.4 Investigate the establishment of a Regional Water Quality Monitoring Program to develop consistent water quality guidelines, indicators and monitoring techniques for uses. This approach should allow identification of water quality conditions for priority treatment, comparison of data across catchments and encourage resource sharing in a region or catchment.	EPA (SWMCCI), SCCG	Sydney Water, Dept of Health, CMCs	Essential
1.13.5 Continue to encourage the establishment of a community based system for water quality monitoring for education and awareness raising and pollution hot spot identification so as to produce more reliable, scientifically useful data.	Streamwatch	EPA, Councils, Sydney Water, SWMCC	Highly Desirable

1.14 ENVIRONMENTAL LEVIES

Outcome: Environmental levies that are based on identified and prioritised local and regional environmental outcomes.

1.14.1 Councils consider the introduction of specific environmental levies for catchment based water quality improvement programs and for assisting in the implementation of other strategic actions identified in this program, utilising the special rate variation under the *Local Government Act, 1993* where other funding sources will not provide for the proper implementation of the principles of asset management and ecologically sustainable development.

Guidance Documents

- ◆ Manly, Warringah, Pittwater and Hornsby Council's levy guidelines.

1.15 WATER QUALITY OBJECTIVES

Outcome: Community acceptable water quality goals for all coastal waterways and their tributaries.

1.15.1

In light of the Water Reform package, develop a policy on regional water quality objectives for Sydney's waterways and near shore marine waters, consistent with the National Water Quality Management Strategy and NSW EPA Water Quality Objectives and environmental flow activities, to provide regional goals for water management activities.

Guidance Documents

- ◆ NSW EPA, 1997, *Proposed Interim Environmental Objectives for NSW Waters: Sydney, Central Coast & Illawarra Catchments*.
- ◆ ANZECC, 1992, *Australian Water Quality Guidelines and Management (a series)*

EPA, Councils,
SCCG

Sydney Water, NCC,
ACF, DLWC, CMCs,
CSIRO

Essential

NATURE CONSERVATION

The utilisation of species, ecosystems and natural resources is sustainable and the natural environment is protected, restored, rehabilitated and enhanced for the maintenance of:

- ◆ essential ecological processes (life-support systems),
- ◆ genetic, species and ecosystem diversity and productivity, and
- ◆ environmental and aesthetic qualities.

REGIONAL ISSUES

- ◆ The continuing degradation of habitats, remnants and representative ecosystems.
- ◆ A general lack of necessary resources for environmental legislation enforcement and natural resource management activities.
- ◆ An insufficient review of the adequacy and extent of existing protected areas that will ensure the protection of ecosystems to maintain and enhance biodiversity.
- ◆ A lack of maintenance and enhancement of wildlife (flora and fauna) corridors.
- ◆ The loss and degradation of riparian vegetation and habitats due to development.
- ◆ The significant impacts of weeds and feral animals on terrestrial, aquatic and marine ecosystems.
- ◆ The degradation of wetland systems.
- ◆ A poor clarification of the management roles and responsibilities for intertidal areas and their resources.
- ◆ The potentially significant urban impact of developments adjacent to natural areas.
- ◆ Inappropriate, general, historic and ongoing over development of many areas within coastal hazard zones.
- ◆ Insufficient nature conservation education programs, particularly relating to the intertidal zone.
- ◆ General lack of sufficient scientific and ecological knowledge on flora and fauna species and their interaction with ecosystems.
- ◆ A general lack of good baseline ecological data.
- ◆ No effective and efficient centralised biodiversity and ecosystem data management system.
- ◆ The general poor dissemination of ecological data and information to natural resource managers and the general community.



2.1 INTERTIDAL ZONE

- Outcomes:** a) A regional plan of management in place to encourage the protection of intertidal ecosystems including rock platforms, mangroves, mudflats and saltmarshes.
- b) A regional education program implemented that raises the awareness of the general community in Sydney to the value of intertidal habitats and increased support for their conservation.

2.1.1

Clarify of the roles and responsibilities for the management and policing of the intertidal zone and aquatic reserves. A key issue to ensure the success of an IPA is the need to strengthen and coordinate the reciprocal agency policing powers and to ensure that enforcement resources are used efficiently and added to where possible, so that intertidal areas are protected and managed sustainably. (Refer to Natural Features maps in Appendix 6 for locations of existing IPAs and aquatic reserves.)

NSW Fisheries,
Councils,
DIWC (Crown Lands),
WA

NIPWS, OMA,

Essential

2.1.2

Developed and implement an interagency regional plan of management (action plan) for intertidal and near shore marine waters. This will include, though not be not be restricted to, considering designated access and use of protected intertidal areas to reduce anthropogenic impacts, detailing management responsibilities and the ongoing provisions for resource management; providing a system to assess species richness, vulnerability and threatening processes; the effectiveness of protected areas in maintaining and enhancing biodiversity; and developing mechanisms to enable the identification and establishment of new protected intertidal areas and aquatic reserves.

NSW Fisheries

NIPWS, Marine
Parks Authority,
DIWC (Crown Lands),
Councils, WA,
Research Organisations,
CSIRO

Essential

Guidance Documents:

- ◆ Chapman, M.G. and Underwood, A. J., 1997, *Testing the Effectiveness of IPAs in NSW - Final Report. EICC.*

STRATEGIC ACTION	PRIMARY RESPONSIBILITY	SECONDARY RESPONSIBILITY	PRIORITY
<p>2.1.3</p> <p>Develop targeted education programs with regard to: invertebrate collecting; the importance of protecting intertidal and littoral ecosystems and species; illegal intertidal collecting and protection and enforcement details of current IPAs and Aquatic Reserves. Consider community interactive education programs such as "Project Aware" for Sydney wide implementation, focusing on reaching the broader community.</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ EPA and DLWC, 1997, <i>What We Need is a Community Education Program</i>. ◆ Pittwater Council, 1996, <i>Project Aware on the Rocks</i>. 	<p>NSW Fisheries</p> <p>NPWS, Councils, Ethnic Community Council of NSW, SCCG</p>	<p>Highly Desirable</p>	
<p>2.1.4</p> <p>Provide appropriate resources consistent with recommendations in plans of management for seagrass, mangrove and saltmarsh species and habitat management, to ensure the protection, conservation and restoration of these valuable components of Sydney's coastal and estuarine ecosystems and to ensure that habitat protection plans, interagency action plans and other conservation initiatives such as community awareness programs, are effectively and efficiently implemented across the Sydney Region.</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ NSW Fisheries, 1993, <i>Estuarine Habitat Management Guidelines</i>. ◆ NSW Fisheries, 1995, <i>Fish Habitat Protection Plan No. 1</i>. ◆ NSW Fisheries, 1997, <i>Fish Habitat Protection Plan No. 2 - Seagrasses</i>. 	<p>NSW Fisheries</p> <p>Councils, EPA, NPWS, DLWC, OMA, WA, Marine Ministerial Holding Corporation, CMCs, Research organisations</p>	<p>Essential</p>	
<p>2.1.5</p> <p>Encourage research on non-chemical measures for cleaning of ocean rock pools that flush/interact with the marine environment.</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ Coghlan, M. and Steinberg, P., 1997, <i>Biological Control of Nuisance Algae on Coastal Bathing Platforms, University of NSW, Sydney</i>. ◆ Allen, J., 1996, <i>Controlling Biological Fouling in and around Ocean Rock Swimming Pools of the Sydney Metropolitan Area using Non Chemical Methods</i>. 	<p>SCCG, EPA, NSW Fisheries</p>	<p>Research organisations, CSIRO</p>	<p>Highly Desirable</p>



2.2 MARINE ZONE

Outcomes: a) Required resources are allocated to the protection and conservation of marine ecosystems including fish stocks and other commercial and recreational marine life, including investigation of environmentally sensitive aquaculture opportunities.
 b) A shark netting strategy that minimises the impact on non-target marine life while protecting public safety.
 c) A policy on positioning aquatic navigational and communication aids in an environmentally safe manner.
 d) A designated area of conservation zones to conserve representative and significant marine ecosystems.
 e) A ballast water strategy developed and implemented for Port Jackson and Botany Bay (providing international port facilities).

2.2.1

Direct additional resources at policing illegal fishing, enforcing fish quotas and discouraging the taking of undersized fish. NSW Fisheries to work with key stakeholders to develop joint policy and policing initiatives. This is to include, though not be restricted to, community reporting via such media as the established Fisherman's Watch, a 24 hour free phone reporting service (1800 043 536).

NSW Fisheries

Essential

2.2.2

Identification and facilitate key areas of opportunity for the development of aquaculture initiatives, including utilising near and off shore areas to ensure the sustainability of existing fisheries and to facilitate further sustainable fishery enterprises, where the integrity of natural environments will be carefully monitored and not compromised by the development.

NSW Fisheries

WA, OMA,
Councils, CSIRO
Research organisations

Highly Desirable

2.2.3

Investigate options for the future designation of a Multi-Use Marine Park for Sydney with at the very least, the consideration of developing core conservation zones to protect significant and representative marine, estuarine and intertidal areas and to resolve user conflicts. This process is to involve extensive community involvement. Some of the key conservation zones identified during the project include Shelly Beach Manly, Taren Point, east side of Camp Cove to Lady Beach, Clovelly Bay, the Botany Wetlands, coastal lagoons and intertidal areas.

Marine Parks Authority (NPWS, NSW Fisheries)

WA, Research
organisations

Highly Desirable

Guidance Documents

- ◆ *Marine Parks Act, 1997*
- ◆ Great Barrier Reef Marine Park Authority and International Union for Conservation of Nature and Natural Resources, 1991, *Guidelines for Establishing Marine Protected Areas*, IUCN.
- ◆ Australian National Parks and Wildlife Service, 1992, *Marine and Estuarine Protection Areas: A Strategy for a National Representative System within Australian Coastal & Marine Environments*.



STRATEGIC ACTION	PRIMARY RESPONSIBILITY	SECONDARY RESPONSIBILITY	PRIORITY FRAME
<p>2.2.4</p> <p>Undertake a comprehensive review of existing protected areas, legal fish sizes, bag limits and restrictions, and closures to fishing, netting and spearfishing. The aim being the evaluation of their effectiveness and contribution to the maintenance of biodiversity and the evaluation of the possibilities and appropriateness of extending these areas and restrictions to other key sites. The findings of such a review be made available to the general public.</p> <p>(Refer to Natural Features maps in Appendix 6 for locations of existing recreational fishing restrictions/closures.)</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ Chapman, M. G. and Underwood, A. J., 1997, <i>Testing the Effectiveness of IPAs in NSW - Final Report.</i> ◆ Parliament of NSW Legislative Council Standing Committee on State Development, 1997, <i>Fisheries Management and Resource Allocation in NSW.</i> 	<p>NSW Fisheries</p>	<p>Councils, NPWS, Research organisations, CMCs, CSIRO</p>	<p>Highly Desirable</p>
<p>2.2.5</p> <p>Continue to provide fishing clinics for school aged children throughout the Sydney region with consideration of extending these established programs to include adults and ethnic groups.</p>	<p>NSW Fisheries</p>	<p>Dept of Sport and Recreation, Ethnic Community Council of NSW</p>	<p>Desirable</p>
<p>2.2.6</p> <p>Review current shark netting practices to evaluate and minimise the impacts to non-target marine animals, while considering the implications to protected marine mammals under the <i>Fisheries Management Act 1994</i> and the <i>Threatened Species Conservation Act 1995</i>.</p>	<p>NSW Fisheries</p>	<p>NPWS, Australian Shark Conservation Foundation, Australian Marine Conservation Society</p>	<p>Desirable</p>
<p>2.2.7</p> <p>Position navigation aids, warning signs and marine communication aids, where possible, to have minimal adverse aesthetic and ecological impacts, consistent with their purpose.</p>	<p>WA, OMA</p>	<p>NSW Fisheries, NPWS, Councils</p>	<p>Desirable</p>
<p>2.2.8</p> <p>The NSW Government continue to assist in the development of a ballast water policy and guidelines for managing the discharge and uptake of ballast water, including the active implementation of the Australian Ballast Water Management Strategy.</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ Australian Ballast Water Management Advisory Council, 1995, <i>Australian Ballast Water Management Strategy.</i> ◆ Australian Ballast Water Management Advisory Council, <i>Australian Ballast Water Guidelines.</i> 	<p>OMA</p>	<p>EPA, NSW Fisheries, Dept of Health, NPWS, Sydney Ports Authority, Aust. Quarantine & Inspection Service, WA, CSIRO</p>	<p>Essential</p>

2.3 PROTECTED AREAS, REMNANT BUSHLAND, HABITAT PRESERVATION

- Outcomes:** a) Representative marine and terrestrial ecosystems continue to be assessed for inclusion in protected areas, national park extensions, regional parks and aquatic reserves, and identified in existing local planning instruments and plans of management.
- b) Local planning instruments and plans of management for key remnant bushland, vegetation and fauna habitat corridors, riparian vegetation and other sensitive entities in order to conserve, maintain and enhance these areas.

2.3.1 Continue to prepare and implement plans of management for all coastal National Parks, Marine and Aquatic reserves, public open spaces, Crown lands, Commonwealth lands and remnant areas to ensure suitable management practices are established to conserve natural and cultural heritage and to provide for appropriate recreational opportunities. These plans are to consider relevant REPs, LEPs and DCPs to ensure the protection and where necessary, the integrated, responsible and ecologically sustainable use of these resources. A statement of activities to protect environmentally sensitive and or vulnerable areas will be included in any Plan of Management.

(Refer to Natural Features maps in Appendix 6 for locations of existing National Parks, Aquatic Reserves and significant open spaces.)

2.3.2 Continue to identify remnant bushland and vegetation corridors to assess their vulnerability, biological diversity and abundance, and education value.

Guidance Documents

- ◆ The Sydney Regional Organisation of Councils, 1997, *Green Web - Sydney*.

**Councils, NPWS,
DLWC, NSW
Fisheries**

WA, DUAP, SCCG,
NCC, EA-PMG

Essential

**NPWS, Councils
DLWC**

ROCs, CMCs

Highly Desirable

STRATEGIC ACTION	PRIMARY RESPONSIBILITY	SECONDARY RESPONSIBILITY	PRIORITY
<p>2.3.3</p> <p>Encourage bushland and habitat conservation, regeneration and enhancement on both public and private land. This is to be achieved through the implementation of SEPP 19 - Bushland in Urban Areas and relevant LEPs, DCPs and applying conditions of development consent. Also through the development of conservation initiatives such as a Code of Conduct, Voluntary Conservation Agreements, NPWS's Land for Wildlife agreements and policy guidelines for landscaping and planting using endemic native vegetation. Natural regeneration of disturbed areas should be encouraged where possible.</p> <p>Guidance Documents:</p> <ul style="list-style-type: none"> ◆ NSW Government, 1986 (amended 1988), SEPP 19 Bushland in Urban Areas. ◆ Total Environment Centre, 1993, <i>Managing Your Urban Bushland - A guide for Urban Councils</i>. 	<p>Councils, NPWS, DLWC</p>	<p>CMCs</p>	<p>Highly Desirable</p>
<p>2.3.4</p> <p>Encourage the protection and enhancement of riparian vegetation and corridors through the development of a Riparian Zone Management Policy which is incorporated as appropriate into LEPs and DCPs and development consent conditions. Rehabilitation of riparian areas is to be consistent with the riparian management guidelines being prepared by DLWC.</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ NSW Government, 1993, <i>The NSW State Rivers and Estuaries Policy</i>. ◆ Brisbane City Council, 1995, <i>Urban Stream Rehabilitation: Principles and Guidelines</i>. ◆ NSW Government, 1996, <i>NSW Wetlands Management Policy</i>. ◆ DLWC, (in preparation), <i>Local Government Guidelines for Riverine Corridor Management</i>. 	<p>DLWC, Councils, SCCG</p>	<p>NPWS, DUAP, NSW Fisheries, NCC</p>	<p>Highly Desirable</p>
<p>2.3.5</p> <p>Encourage councils to classify open space and land with conservation, recreational and/or aesthetic values which is public land as defined in the <i>Local Government Act, 1993</i> as "community land".</p>	<p>Councils</p>	<p>DUAP, Dept of Local Government</p>	<p>Highly Desirable</p>

STRATEGIC ACTION	PRIMARY RESPONSIBILITY	SUPPORTING ORGANISATIONS	PRIORITY
<p>2.3.6 Conserve, maintain and enhance local and regional public open space areas, networks and wildlife/vegetation corridors and, where possible, use to conserve natural habitats and environments, while continuing to allow for appropriate public access.</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> The Sydney Regional Organisation of Councils, 1997, <i>Green Web - Sydney</i>. 	<p>Councils, DLWC (Crown lands), NPWS</p>		<p>Essential</p>
<p>2.3.7 Establish practices to mitigate impacts of urban development adjacent to remnant bushland and protected areas. This is to include, though not be limited to, the development and implementation of DCPs for all lands which share a common boundary with bushland areas. Key identified pressures include neighbouring land clearing and land uses causing soil erosion, trampling, rubbish dumping, increased noise, bushfires, invasion of inappropriate plant species and companion animals, and stormwater diversion into bushland.</p>	<p>Councils</p>	<p>DLWC (Crown Lands), NPWS, DUAP, CMCs</p>	<p>Highly Desirable</p>
<h2>2.4 BIODIVERSITY</h2>			
<p>Outcome: Adequate ecosystems are protected to maintain and enhance species richness, diversity and abundance and management systems are in place to encourage this.</p>			
<p>2.4.1 Review existing marine and terrestrial protected and conservation areas, and representative ecosystems and habitats, to ensure that adequate reserves exist for the maintenance and enhancement of biodiversity. Where necessary these areas should be added to, enhanced and rehabilitated while accommodating appropriate public access. (Refer to Natural Features maps in Appendix 6 for locations of existing protected and conservation areas.)</p>	<p>NPWS, NSW Fisheries</p>	<p>DLWC, Councils, Research organisations</p>	<p>Essential</p>
<p>2.4.2 Continue to investigate and document the distribution, abundance, diversity and condition of native marine and terrestrial flora and fauna species, communities and habitats in consultation with research organisations for the purposes of determining management priorities and activities to conserve and enhance local and regional biodiversity.</p>	<p>NPWS, DLWC, NSW Fisheries, Councils</p>	<p>Research organisations</p>	<p>Highly Desirable</p>



STRATEGIC ACTION	PRIMARY RESPONSIBILITY	SECONDARY RESPONSIBILITY	PRIORITY
<p>2.4.3</p> <p>Develop comprehensive inventories, management policies, strategies and action plans for the management of threatened species, communities and threatening processes in line with the provisions of the <i>NSW Threatened Species Conservation Act 1995</i> and the <i>Fisheries Management Act 1994</i>, to ensure that these are appropriately managed and considered in local and regional planning instruments and decision making.</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ <i>Fisheries Management Act 1994</i> ◆ <i>Threatened Species Conservation Act 1995</i> 	<p>NSW Fisheries, NPWS, Councils</p>	<p>CMCs, Research organisations</p>	<p>Essential</p>
<p>2.4.4</p> <p>Develop and implement recovery plans and threat abatement plans in line with the <i>Threatened Species Conservation Act 1995</i> and the <i>Fisheries Management Act 1994</i> to protect and enhance threatened species, communities and habitats.</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ <i>Threatened Species Conservation Act 1995</i> ◆ <i>Fisheries Management Act 1994</i> 	<p>NPWS, NSW Fisheries, Councils</p>	<p>NCC, ACF</p>	<p>Essential</p>
<p>2.4.5</p> <p>Where appropriate, continue to install bird, bat and possum boxes (housings) in bushland areas and other suitable urban areas.</p>	<p>Councils, NPWS</p>	<p>Private land owners, CMCs</p>	<p>Desirable</p>

2.5 WETLANDS

Outcome: A regional wetlands management plan that manages for the protection and enhancement of coastal wetlands.

2.5.1

Develop a regional wetland management strategy to ensure that the biodiversity, water regimes, biological processes and aesthetic values of Sydney's wetlands are conserved and enhanced. Detailed wetland studies are to be undertaken that include, though are not limited to: species inventories; condition assessments; threatening processes and activities. The strategy is also to include guidelines for the purposes of developing integrated plans of management which include planning controls, wetland restoration and rehabilitation actions that are in accordance with the *NSW Wetlands Management Policy* and consider SEPP 14 - Coastal Wetlands (not applied to the Sydney Metropolitan Area).

DLWC, WA

Councils, NPWS,
NSW Fisheries,
Sydney Water, CMCs,
EPA, Research Organisations

Highly Desirable

Guidance Documents

- ◆ Winning, G., 1990, *A Scheme for Assessment of the Nature Conservation Value of Wetlands*.
- ◆ Hawkesbury Nepean Catchment Management Trust, 1996, *Focus on Wetlands - Guide for preparing a wetland management plan*.
- ◆ Hawkesbury Nepean Catchment Management Trust, 1997, *Wetland Assessment*.
- ◆ NSW Government, 1985, *State Environmental Planning Policy No. 14 - Coastal Wetlands*.
- ◆ NSW Government, 1996, *The NSW Wetlands Management Policy*.
- ◆ Commonwealth of Australia, 1997, *Wetlands Policy of the Commonwealth of Australia*.

2.5.2

Protect wetland and lagoon vegetation through: appropriate zonings; establishment and enforcement of buffer zones; appropriate fencing and signage, and the protection of breeding and roosting areas.

Councils,

DLWC

Essential

NPWS, NSW Fisheries,
Sydney Water, DUAP,
CMCs, EPA

Guidance Documents

- ◆ NSW Government, 1985, *State Environmental Planning Policy No. 14 - Coastal Wetlands*.
- ◆ NSW Government, 1996, *The NSW Wetlands Management Policy*.
- ◆ Hawkesbury Nepean Catchment Management Trust, 1996, *Focus on Wetlands - Guide for preparing a wetland management plan*.

STRATEGIC ACTION	PRIMARY RESPONSIBILITY	SECONDARY RESPONSIBILITY	PRIORITY
<h2>2.6 EXOTIC SPECIES</h2>			
<p>Outcomes: a) Local and/or regional pest control officers covering the coastal zone b) A regional pest control strategy that address regional pest problems.</p>			
<h3>2.6.1</h3>	<p>Councils</p>	<p>NPWS, DLWC, SCCG, CMCs</p>	<p>Highly Desirable</p>
<p>Investigate the feasibility of employing a pest (weed and feral animals) control officer on a local and/or regional basis, to prepare and implement pest management strategies and actions. Primary concerns include: Bitou Bush; Lantana; Privet; Pampas Grass; Asparagus Ferns; Wandering Jew; Morning Glory; Ludwigia; Salvinia (fresh water); Cladophera (marine); cats; foxes; rabbits; European Carp; and Mosquito Fish.</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ McLoughlin, L. and Rawling, J., 1991, <i>Making Your Bush Friendly - how to recognise and control garden plants which invade Sydney bushland.</i> ◆ NSW Agriculture, 1995, <i>Noxious Weed Control Handbook - Herbicide Control.</i> ◆ Noxious Weeds Committee - Sydney North, 1996, <i>Stop the Spread - noxious weeds are spoiling our environment.</i> ◆ NSW Government, 1997, <i>State Weeds Strategy.</i> ◆ Commonwealth of Australia, 1997, <i>National Weeds Strategy.</i> 			
<h3>2.6.2</h3>	<p>OMA, WA,</p>	<p>NSW Fisheries, EPA, Dept of Health, Sydney Ports Authority, Aust. Quarantine & Inspection Service, CSIRO, EA-PMG</p>	<p>Essential</p>
<p>Develop a regional management strategy to prevent further introductions of exotic marine pests to the Sydney region.</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ DEST & CSIRO, 1996, <i>Coastal Monitoring & Introduced Marine Pests - developing strategies for community involvement in detection, monitoring and control.</i> ◆ Australian Ballast Water Management Advisory Council, 1995, <i>Australian Ballast Water Management Strategy.</i> ◆ Australian Ballast Water Management Advisory Council, <i>Australian Ballast Water Guidelines.</i> 			
<h3>2.6.3</h3>	<p>Councils, EPA</p>	<p>NPWS, CMCs, WIRES, Sydney Metropolitan Wildlife Service Inc., Dept of Agriculture, CSIRO, ROCs</p>	<p>Essential</p>
<p>Develop a regionally coordinated approach for the control of feral and other pest species that primarily focuses on cats, foxes and rabbits. For domesticated animals consider strategies to control the destructive impacts of these species through the provision of possible management activities including, although not restricted to: the compulsory registration of cats; desexing of cats; cat curfews; and humane trapping and eradication methods.</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ Hon. Ernie Page, Minister for Local Government, 1997, <i>Companion Animals - White Paper.</i> 			

2.7 INFORMATION

Outcomes: a) A comprehensive one-stop-shop data retrieval system that is widely accessible to coastal managers and the general community.
b) Raised community awareness and support for addressing the key issues and pressures.

2.7.1

Undertake a comprehensive review of Commonwealth, State and local government databases and data systems and their compatibility with the view of establishing an integrated coastal zone information system that can be widely and freely accessed by all spheres of government and the broader community. CoastNet can be used to exchange information.

NSW Coastal Council

Essential

2.7.2

Communicate relevant investigations undertaken by the scientific community to policy making bodies, management stakeholders and the community through the establishment of State of the Environment Reporting in electronic media and the wide distribution of update and annual reports.

EPA, Councils

Relevant Government Agencies, Research Organisations, CMCs, Consultants

Essential

2.7.3

Widely publish coastal management issues and programs throughout the community, through a variety of media including print, electronic, brochures, pamphlets, awareness programs and school material. These programs should include, though not be limited to highlighting the values of coastal ecosystems and the opportunities and benefits of urban environmental conservation specifically relating to the enhancement and maintenance of biodiversity, its relevance to jobs, health, water quality and quality of life.

DLWC, Relevant Government Agencies, Councils

NCC, ACF, CMCs, Environment Australia
Highly Desirable

2.7.4

Widely promote the findings of State of the Environment Reports to the broader community in suitable formats including the consideration of utilising easily understood SoER Cards and/or pamphlets, which provide a brief overview of environmental conditions using key core indicators and graphical trend information which is referenced to the complete SoER.

Councils, EPA, SCCG

DLWC, WA Dept. of Local Government
Highly Desirable

Guidance Documents

- ◆ Sydney Coastal Councils Group, 1997, *State of the Environment Reporting - Proposed State of the Environment Report Card*.



2.8 MONITORING

Outcomes: a) A research prospectus identifying regional coastal research priorities distributed to all key research organisations and coastal managers and cooperative arrangements between coastal managers and research organisations to address these priorities.
 b) Environmental monitoring programs supplying useable and credible scientific information to coastal managers through cooperative arrangements with research organisations.

2.8.1 Prepare a research prospectus to identify research priorities within the region as relevant to this strategy.

SCCG, Relevant Government Agencies

Research organisations, CMCs, CSIRO, Highly Desirable

2.8.2 Continue to develop consistent methodologies for the collection, description, presentation and distribution of environmental and management information. This is to include, though not be limited to, the development of standard core environmental, biological and performance indicators.

EPA, Councils

SCCG, Environment Australia Highly Desirable

2.8.3 Design environmental monitoring programs in consultation with research organisations to provide useable and scientifically credible information, initially focusing on existing gaps in coastal information, as identified in State and Local State of the Environment Reports.

Relevant Government Agencies, Councils

Research organisations Highly Desirable

2.9 COMMUNITY SUPPORT

Outcome: Continued growth of valuable, community based natural resource and environment groups through continued support from local government.

2.9.1 Continue to support and encourage the development and training of community based natural resource action groups such as Dunecare, bush regeneration and Coastcare groups. Coordinators may be employed by the local manager to assist these groups.

Councils, DLWC, NPWS

Environment Australia, CMCs **Essential**

Guidance Documents

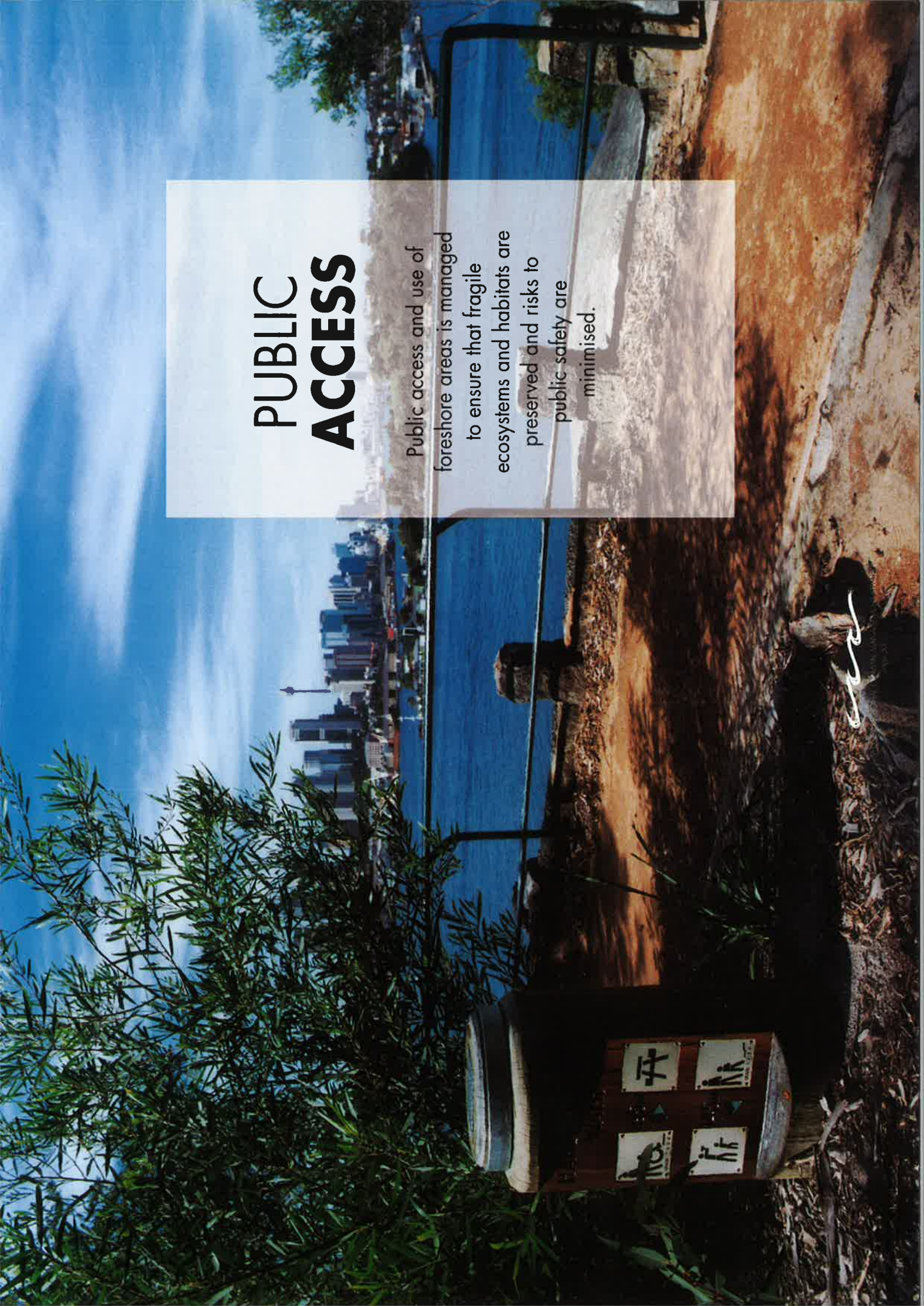
- ◆ DLWC, 1997, *Volunteers Working on the Coast - a guide to help volunteers working on NSW coastal Crown land.*



STRATEGIC ACTION	PRIMARY RESPONSIBILITY	SUPPORTING ORGANISATIONS	PRIORITY
<p>2.9.2 Support and publicise community based nurseries (such as Randwick Community Nursery) with the consideration of establishing similar facilities to cover all local government areas, so as to provide endemic native species for council operations and the local community.</p>	<p>Councils</p>	<p>Relevant Government Agencies, Community</p>	<p>Desirable</p>
<p>2.9.3 Promote community based monitoring and reporting under the guidance of appropriately qualified scientists that identifies and warns of environmental variations.</p>	<p>Councils, NPWS</p>	<p>EPA, DLWC, Streamwatch, NCC, ACF, CMCs, Research Organisations,</p>	<p>Highly Desirable</p>

PUBLIC ACCESS

Public access and use of foreshore areas is managed to ensure that fragile ecosystems and habitats are preserved and risks to public safety are minimised.



REGIONAL ISSUES

- ◆ General lack of appropriate and sensitive public access to coastal resources.
- ◆ The alienation of foreshore lands and other existing public open space areas by developments.
- ◆ The potential restrictions and effects on public access to foreshores due to tourism and private enterprise developments.
- ◆ Insufficient public education to ensure the safe and environmentally responsible use of foreshore areas.
- ◆ Restrictions to foreshore access due to permissive occupancy.
- ◆ The incompatible and intensive use of waterways.
- ◆ Inadequate provision of “barrier free” access to appropriate coastal and foreshore areas.
- ◆ The potential detrimental environmental impacts of uncontrolled eco-tourism activities.
- ◆ Limited provision for and minimal use of public and non-motorised transport to foreshore areas.
- ◆ Potential loss of access due to sea level rise.

3.1 PUBLIC FORESHORE LANDS AND ACCESS

Outcome: Continued provision and maintenance of environmentally sensitive public access to foreshore areas.

3.1.1 Future land use options for "surplus" Commonwealth lands to be consistent with the guiding principles established by the NSW Government for Sydney Harbour foreshores. Key areas to be targeted include:

Middle Head; North Head; Woolwich; Berry's Bay (Ball's Head); HMAS Platypus; Garden Island; Cockatoo Island and Spectacle Island; Malabar Headland (ANZAC Rifle Range); and Randwick Naval Area, Bundock Street, Randwick.

Guidance Documents

- ◆ NSW Government, 1997, *State Government's Vision for Sydney Harbour Foreshores*.

3.1.2

Oppose the alienation of any foreshore lands. Where the value of these lands is beyond the available government financial resources, State and local governments negotiate with landholders/developers to ensure public access to foreshore areas through EP&A Act section 94 Contributions and/or through conditions of development consent. Areas of primary concern requiring immediate attention include: Commonwealth Defence Lands; Malabar Headland (development proposal); Middle Head (development proposal); Kurnell sand dunes (development proposal); York Rd, Randwick (development proposal); Strickland House (leasing proposal); and former Marine Biology Research Station (Camp Cove).

Guidance Documents

- ◆ Dept. of Environment and Planning, 1986, *Sydney Region Development Fund*.
- ◆ NSW Government, 1997, *State Government's Vision for Sydney Harbour Foreshores*.

Councils, NPWS,
Commonwealth
Government

DUAP, Cabinet
Office, WA

Highly Desirable

Councils, DUAP,
WA

DIWC

Essential

STRATEGIC ACTION	PRIMARY RESPONSIBILITY	SECONDARY RESPONSIBILITY	PRIORITY
<p>3.1.3 State and local government strengthen restrictions and conditions of permissive occupancy of foreshore areas ensuring public access and the protection of foreshore ecosystems.</p>	<p>Councils, OMA, NSW Fisheries, DLWC, NPWS, WA</p>	<p>DUAP</p>	<p>Highly Desirable</p>
<p>3.1.4 Undertake comprehensive local government area based inventories of open space, to identify opportunities, priorities and resource requirements to ensure improved management of local open space. The findings to be distributed to the relevant coastal managers. (Refer to Natural Features maps in Appendix 6 for locations of existing significant open space.)</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ Dept. of Environment and Planning, 1982, <i>Sydney Region Open Space Survey</i>. ◆ Dept. of Planning, 1991, <i>Metropolitan Open Space - Sydney Region</i>. 	<p>Councils</p> <p>DLWC, NPWS, LGSA, DUAP</p>	<p>Essential</p>	
<p>3.1.5 Undertake recreational usage studies for all key recreational areas to determine management priorities and the need for additional infrastructure, including, though not restricted to: designated paths, tracks and boardwalks; fencing; parking access; interpretation signage; toilets; and rubbish receptacles. These studies are to also consider the imposition of access restrictions to sensitive areas and the separation of incompatible recreational activities.</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ Dept. of Industry, Science and Tourism, 1996, <i>Projecting Success - Visitor Management Projects for Sustainable Tourism Growth</i>. ◆ Mosman Council, 1994, <i>Mosman Open Space Strategy, Vol. 1 & Vol. 2 - Plans of Management</i>. 	<p>Councils</p> <p>NPWS, DLWC</p>	<p>Highly Desirable</p>	
<p>3.1.6 Continue to establish Memorandums of Understanding between golf clubs, National Parks and Wildlife Service and councils to ensure appropriate designated public access to significant coastal foreshores and natural and scenic areas, while conserving and enhancing natural areas and their associated flora and fauna.</p>	<p>Councils, NPWS, DLWC</p>	<p>Golf clubs, Sydney Water, LGSA</p>	<p>Highly Desirable</p>

STRATEGIC ACTION	PRIMARY RESPONSIBILITY	SUPPORTING ORGANISATIONS	PRIORITY
<p>3.1.7 Undertake risk assessments on public lands where there is a potential for personal injury due to, although not restricted to, rockfalls and cliff collapse, with consideration for the provision of appropriate warning signage and safe designated access routes.</p>	<p>Councils</p>	<p>DLWC, NPWS, CMCs, Insurance Council of Australia, Dept of Sport and Recreation, SCCG, Sydney Water</p>	<p>Highly Desirable</p>
<p>3.1.8 Promote safe and environmentally responsible recreational use of foreshore areas through public education programs and activities.</p>	<p>Councils, DLWC</p>	<p>Dept of Sport and Recreation, SLSC, NPWS, LGSA, Dune Care Groups</p>	<p>Highly Desirable</p>
<p>3.2 FORESHORE FACILITIES</p>			
<p>Outcome: Foreshore facilities that complement the area's character and minimise environmental impacts, while catering for key local recreational activities.</p>			
<p>3.2.1 Provide public and private facilities (including "barrier free" facilities) at appropriate locations and with appropriate safety standards to facilitate fair and equitable access, and ensure that the broader community has the opportunity to enjoy the coastal recreational amenity.</p>	<p>Councils, NPWS</p>	<p>DLWC, WA</p>	<p>Highly Desirable</p>
<p>3.2.2 Give existing coastal walkways greater regional support and promote widely. Maintain and add to these important recreational facilities where possible so that the entire Sydney coastline including the estuarine areas are linked by a coastal walkway system. Consideration be given to the development and implementation of appropriate interpretative signage detailing issues such as: cultural heritage; coastal conservation and biodiversity; coastal process issues; and current management activities.</p> <p>(Refer to Natural Features maps in Appendix 6 for locations of existing coastal and estuarine walkways.)</p>	<p>Councils, NPWS</p>	<p>DLWC, WA, NSW Fisheries, CMCs, OMA, SCCG</p>	<p>Highly Desirable</p>

STRATEGIC ACTION

PRIMARY RESPONSIBILITY

SECONDARY RESPONSIBILITY

PRIORITY

3.3 TOURISM

Outcome: Coastal tourism developments that complement the area and minimise environmental impacts, while providing public access.

3.3.1 Require all new tourism developments adjacent to foreshores to include provision for appropriately managed public access to foreshores.

Guidance Documents

- ◆ Sutherland Shire Council, *Development Control Plans - Waterfront Properties and Foreshore Development*.

Councils
DLWC, NPWS, DUAP

Essential

3.3.2 Encourage nature based tourism (ecotourism) opportunities through the implementation of the NSW Tourism Masterplan.

Guidance Documents

- ◆ NSW Tourism, 1996, *NSW Tourism Masterplan to 2010*.
- ◆ NPWS, 1998, *Draft Nature Tourism and Recreational Strategy - for protected areas of NSW, Australia*.

Councils
Tourism NSW, NPWS, DLWC, Tourism operators

Highly Desirable

3.3.3 All tourism operators and development consent authorities must have regard to best practice for coastal tourism.

Guidance Documents

- ◆ Environment Australia, 1997, *Coastal Tourism - A Manual for Sustainable Development*.
- ◆ DUAP, 1997, *Guidelines for Tourism Development Adjacent to Natural Areas*.
- ◆ Harris, R. and Leipen, N., 1995, *Sustainable Tourism - An Australian Perspective*.
- ◆ Tourism NSW, 1997, *Sydney Tourism Strategy 1997/98*.

Councils
Tourism operators, DUAP, Environment Australia

Essential

STRATEGIC ACTION	PRIMARY RESPONSIBILITY	SUPPORTING ORGANISATIONS	PRIORITY
<p>3.3.4 Develop a Sydney tourism development and management plan based on ESD principles.</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ Environment Australia, 1997, <i>Coastal Tourism - A Manual for Sustainable Development</i>, 1997. ◆ Harris, R. and Leiper, N., 1995, <i>Sustainable Tourism - An Australian Perspective</i>. ◆ Tourism NSW, 1997, <i>Sydney Tourism Strategy 1997/98</i>. 	<p>Tourism NSW</p>	<p>Councils</p>	<p>Highly Desirable</p>
<p>3.4 BOATING ACCESS</p>			
<p>Outcome: Boating access that is environmentally sensitive and compatible with the other uses of the waterway.</p>			
<p>3.4.1 Where not already suitably catered for, waterways with intense boating and other conflicting uses should consider designating areas that limit boating consistent with the conservation of natural areas and habitats to ensure the safety and enjoyment of all users.</p>	<p>WA, OMA</p>	<p>Councils, Relevant Government Agencies, EMCs</p>	<p>Essential</p>
<p>3.4.2 Provide boat launching ramps consistent with the need to conserve natural areas and habitats. Where additional boat ramps are required, they should be located in disturbed areas such as disused industrial and commercial areas. The cost of providing environmentally sound launching ramps may be passed on to ramp users through time display parking, the installation of ramp boom gates or other methods.</p>	<p>Councils, DLWC</p>	<p>WA, OMA, NSW Fisheries, NPWS</p>	<p>Highly Desirable</p>
<p>3.5 PUBLIC TRANSPORT</p>			
<p>Outcome: A regional strategy addressing facilities for encouraging public and non-motorised transport to foreshore areas.</p>			
<p>3.5.1 Encourage the use of public and non-motorised transport to foreshore areas, through the development of education campaigns, restricting foreshore area private vehicle parking facilities and providing suitable, realistic and safe cycleway networks under the development of local and regional cycleway strategies and management plans.</p>	<p>Councils</p>	<p>State Transit Authority, RTA, State Rail Authority, Dept of Sport and Recreation</p>	<p>Highly Desirable</p>





ROLE OF GOVERNMENT

- The three spheres of government that are participants in this strategy work together to improve intergovernmental management for the coastal zone of Sydney. This is to be achieved through:
- ◆ the integration of local area planning principles with total catchment management and ecologically sustainable development principles,
 - ◆ the provision of adequate information to enable the efficient management of the coastal zone,
 - ◆ Cooperation between all spheres of government taking a holistic approach and promoting partnerships for the implementation of the strategy.



Wentworth Institute of Technology

Wentworth Institute of Technology

ISSUES

REGIONAL ISSUES

- ◆ Poorly integrated, uncoordinated, inconsistent planning and development approval systems.
- ◆ General lack of integrated and coordinated management of natural and budgetary resources within and between government agencies and organisations.
- ◆ General insufficient financial resources available to coastal managers.
- ◆ A lack of implementation of key coastal zone objectives and policies, and lack of integration with environmental, social and economic goals.
- ◆ Poor enforcement of environmental legislation.
- ◆ General lack of commitment and limited implementation of sustainable management practices.
- ◆ Political conflict and ideological differences acting as disincentives to improved sustainable coastal management practices.
- ◆ Insufficient consideration for the amalgamation and rationalisation of existing local natural resource management committees and/or the proliferation of natural resource management committees with limited support.



4.1 GOVERNMENT COMMUNICATION AND COORDINATION

Outcome: Incorporation of the SRCMS into existing and new planning instruments and management plans in the coastal zone.

4.1.1 The SRCMS be evaluated by the NSW Coastal Council as part of the review of coastal planning and management in the Greater Metropolitan Region required by the NSW Coastal Policy 1997.

**NSW Coastal
Council**

Essential

Guidance Document

- ◆ NSW Government, 1997, *NSW Coastal Policy 1997 - A Sustainable Future for the New South Wales Coast*.

4.1.2 Identify appropriate regional funding and advertise widely to implement the strategic actions in this strategy.

SCCG

Relevant Government
Agencies

Essential

4.1.3 Continue to implement the *Intergovernmental Agreement on the Environment*, the *National ESD Strategy*, the *National Biodiversity Strategy* and related State Government Strategies such as the *draft Biodiversity Strategy* and the *Metropolitan Strategies Cities for the 21st Century* and *A Framework for Growth and Change: Review of Strategic Planning in the Greater Metropolitan Region* across the Sydney region.

**DUAP, DLWC, OMA,
NSW Fisheries, EPA,
Councils, SCCG,
WA, NPWS, LGSA,
Sydney Water**

Cabinet Office

Essential

Guidance Documents

- ◆ Commonwealth of Australia, all States and Territories and ALGA, 1992, *Intergovernmental Agreement on the Environment*.
- ◆ Dept. of the Environment, Sport and Territories, 1992, *National Strategy for Ecologically Sustainable Development*.
- ◆ Dept. of Planning, 1995, *Cities for the 21st Century*.
- ◆ Dept. of the Environment, Sport and Territories, 1996, *The National Strategy for the Conservation of Australia's Biodiversity*.
- ◆ NSW Government, 1997, *Draft NSW Biodiversity Strategy*.
- ◆ Dept. of Urban Affairs and Planning, 1997, *A Framework for Growth and Change: Review of Strategic Planning in the Greater Metropolitan Region*.

STRATEGIC ACTION	PRIMARY RESPONSIBILITY	SECONDARY RESPONSIBILITY	PRIORITY
<p>4.1.4 Continue to hold stakeholder and community consultation and participation meetings at the initial stages of planning for any new development that has potential significant environmental, social and/or economic impacts, to ensure that all key coastal issues are identified for addressing.</p>	<p>Councils, DUAP, Relevant Government Agencies</p>	<p>DUAP, Developers</p>	<p>Essential</p>
<p>4.1.5 Consider the SRCMS in the development and implementation of relevant regional and local planning instruments, policies and management strategies to ensure the achievement of integrated, responsible and ecologically sustainable development and resource use. (Refer to Appendix 5 for existing State and local planning instruments.)</p>	<p>Councils, DUAP, EPA, DLWC, NPWS, WA, OMA NSW Fisheries, Sydney Water</p>	<p>Relevant Government Agencies, CMCs</p>	<p>Essential</p>
<p>4.1.6 Evaluate the strategy pilot study area to determine its suitability for application to other coastal and estuarine local government areas in Sydney, including but not limited to: Ashfield, Concord, Drummoyne, Hunters Hill, Hurstville, Kogarah, Kuringgai, Lane Cove, Marrickville and Ryde Councils to ensure the smooth implementation of the Strategic Actions Program across the Sydney coastal region.</p>	<p>SCCG, RSC</p>	<p>Non SCCG member councils</p>	<p>Highly Desirable</p>
<p>4.1.7 The SCCG develop an InterNet web site that is linked to other relevant coastal management related sites including CoastNet, to facilitate exchange of information, to promote integrated coastal management and to facilitate increased community education, consultation and participation in coastal management and planning issues. A feedback sheet should be developed to encourage community input. (CoastNet: http://www.environment.gov.au./marine/coastnet)</p>	<p>SCCG</p>		<p>Highly Desirable</p>
<p>4.1.8 Annually assess the implementation and applicability of the SRCMS and apply findings. The review should include an evaluation of the suitability of the strategy to the applied area.</p>	<p>SCCG, RSC</p>		<p>Essential</p>
<p>4.1.9 Thoroughly review the SRCMS five years after its adoption.</p>	<p>SCCG, RSC</p>	<p>Independent Organisations Research Organisations</p>	<p>Essential (after 5 years)</p>

4.2 ENVIRONMENTAL PLANNING INSTRUMENTS

Outcome:

Plans of management for all public foreshore surplus lands that provide for public access and that conserve the environment. Regional Environment Plans, 22 - Parramatta River, and 23 - Sydney and Middle Harbours and 14 Eastern Beaches to provide clear development assessment guidelines for consent authorities to encourage the protection, maintenance and enhancement of marine and terrestrial ecosystems.

4.2.1

Continue to implement REPs, 22 - Parramatta River, 23 - Sydney and Middle Harbours, and 14 - Eastern Beaches and review for appropriateness. The accompanying DCP being prepared by DUAP and OMA for REP 23 will continue to be developed to provide more detailed provisions than currently contained in the REPs including a clear set of guidelines for use by consent authorities in assessing land, water and land/water interface development proposals.

DUAP, OMA

Councils

Essential

Guidance Documents:

- ◆ DOP, 1988, *Sydney Regional Environmental Plan No. 14 - Eastern Beaches*.
- ◆ DOP, 1990, *Sydney Regional Environmental Plan No. 23 - Sydney and Middle Harbours*.
- ◆ DOP, 1990, *Sydney Regional Environmental Plan No. 22 - Parramatta River*.
- ◆ DUAP, OMA, 1997, *Draft Development Control Plan and Working Paper for Sydney Harbour and its Tributaries*.

4.2.2

Establish provisions to require the Commonwealth Department of Defence to prepare plans of management for lands declared under their ownership adjacent to Sydney foreshore areas. (Note this program to be extended to include all Commonwealth lands in the Sydney coastal area by 2002).

**Commonwealth Dept
of Defence, Councils,
DLWC**

Essential

4.3 LEGISLATION AND ENFORCEMENT

Outcomes: a) Sufficient resources to properly enforce environmental legislation.

- b) Land and Environment Court decisions support government adopted local and regional planning systems designed to encourage sustainable and improved coastal management practices for protection of the environment and greatest community benefit.

4.3.1

Provide adequate resources to effectively and efficiently enforce environmental legislation; including conditions of building consent and health regulations.

Relevant Government Agencies, Councils

Essential

4.3.2

Define and clarify processes and procedures involved in prosecuting developers and environmental legislation offenders through the preparation of guidelines and the undertaking of training courses for infringement officers.

EPA, Councils

Relevant Government Agencies, LGSA, Australian Institute of Environmental Health, Land and Environment Court

Highly Desirable

4.3.3

Provide assessors in the Land and Environment Court with coastal management training to include, although not be restricted to, improving their knowledge and understanding of local and regional environmental planning instruments, strategies and plans; significant environmental issues, processes, impacts and initiatives; ecologically sustainable development principles, and the community's concerns and aspirations regarding the future management and development of Sydney's coastal zone.

SCCG, Councils

Land & Environment Court, Attorney General's Dept, DUAP

Highly Desirable

(Note: a copy of this strategy to be forwarded to the Land and Environment Court with a cover letter).

SCCG

4.4 LAND USE PLANNING

Outcome: Sustainable land use planning that accounts for natural, cultural and social values, and protects and enhances the unique character of the local area.

4.4.1 Develop a regional public infrastructure (e.g. signage, boat ramps, toilets, seating, training walls and infrastructure positioning) assessment guide and check list system to ensure that the unique character and natural and cultural heritage of local areas are maintained and enhanced.

SCCG, LGSA
DLWC, Councils,
WA
Desirable

4.4.2 Take a proactive role in the assessment of the natural, cultural heritage and social values of all coastal areas in order to develop prioritised management strategies for conservation and sustainable management of these areas.

Councils, DLWC
NPWS
Essential

4.4.3 Re-evaluate the zoning provisions for "recreational" land to ensure that inappropriate development and commercial leasing of these important public open space areas does not limit equitable public access and opportunities to encourage sustainable practices.

**Councils, DLWC,
NSW Fisheries**
NPWS
Highly Desirable

4.4.4 Clarify public liability for Crown land under the care, control and management of local government so as to ensure that management authorities who take a "duty of care" and follow State Government programs while undertaking management and planning activities are indemnified.

SCCG, Councils
NSW Coastal Council,
Dept of Local
Government, DLWC
Essential

4.5 GOVERNMENT PROGRAMS SERVICES AND ACTIVITIES

Outcomes: a) Sustainable beach management practices covered by a regional strategy.

b) Implementation of user pays that provides the required resources for coastal managers to sustainably manage the environment.

4.5.1

Prepare and implement catchment based coastal management plans consistent with the SRCMS and relevant State and local government programs, planning instruments, plans and strategies.

Councils,
DIWC

SCCG, DUAP,
CMCs

Highly Desirable

4.5.2

Formalise and document existing beach management procedures and evaluate their sustainability for activities such as: dune maintenance and reshaping, and beach cleaning and scraping; weed extraction; beach access; and maintenance of coastal facilities.

Councils,
DIWC, SCCG

SCCG, NPWS,
Research
organisations

Highly Desirable

4.5.3

Governments enforce the principles of "user pays" particularly regarding environmental uses by industry and the commercial sector.

**Relevant Government
Agencies**

Highly Desirable

4.6 ENVIRONMENTAL MANAGEMENT SYSTEMS TO ENCOURAGE ESD AND INTEGRATION

Outcome: Implementation of an environmental management system by all key coastal management organisations.

4.6.1

Encourage the use of environmental management systems in local government as an effective way of ensuring the strategic management of both urban and natural environments and establishing links between councils' corporate management plans, management programs, costs, outcomes, performance and environmental reporting. Use the Agenda 21 planning process where appropriate to ensure community involvement and the integration of coastal issues with local environmental, social and economic issues.

Councils

SCCG, SSRCC,
LGSA, Dept. of
Local Government

Desirable

Guidance Documents

- ◆ ALGA, 1996, *Managing the Environment - a practical guide for local government to EMS and ISO 14001*.
- ◆ International Council for Local Environmental Initiatives, 1996, *The Local Agenda 21 Planning Guidelines - an introduction to Sustainable Development Planning*.
- ◆ Municipal Conservation Association, 1994, *Managing the Future: A Local Government Guide Local Agenda 21*.
- ◆ Department of Local Government, 1998, *Environmental Guidelines, State of the Environment Reporting by Local Government, Promoting Ecologically Sustainable Development*.

4.7 WASTE MANAGEMENT

Outcome: Implementation of regional waste management strategies, prepared by Regional Waste Boards, by coastal managers.

4.7.1

Continue support for the Regional Waste Boards established under Part 3 of the *Waste Minimisation and Management Act 1995* and for the completion of regional waste management plans.

Waste Boards within the area of the strategy include Northern, Southern and Inner Sydney.

Guidance Documents

- ◆ *Waste Minimisation and Management Act 1995*.
- ◆ *Keep Australia Beautiful, 1998, Waste Minimisation Manual for Local Government - a guide to resources, issues and best practice*.

Highly Desirable

Councils, SCCG,
NSW Fisheries

4.8 CATCHMENT MANAGEMENT COMMITTEES (CMC) AND TRUSTS (CMT) COASTLINE (CLMC), ESTUARY (EMC) AND FLOODPLAIN MANAGEMENT COMMITTEES (FMC)

Outcome: Close interaction between State Government coordinated catchment management committees and council coordinated natural resource management advisory committees.

4.8.1 As CMCs, CMTs, CLMCs, EMCs and FMCs deal with similar strategic planning and management issues and have overlapping functions, instigate greater coordination between the groups, including common membership and amalgamation of committees where serviced by the same organisation.

(Refer to Natural Features Maps in Appendix 6 for locations of CMCs and CMTs)

Guidance Documents

- ◆ *Catchment Management Act 1989.*
- ◆ NSW Government, 1990, *Coastline Management Manual (under review).*
- ◆ NSW Government, 1992, *Estuary Management Manual (under review).*
- ◆ NSW Government, 1986, *Floodplain Development Manual.*
- ◆ NSW Government, 1997, *Outcomes of the Review of Total Catchment Management in NSW.*
- ◆ NSW Government, 1997, *NSW Coastal Policy 1997 - A Sustainable Future for the New South Wales Coast.*

DLWC, Councils,
SCCG

Essential
CMCs, CMTs,
CLMCs, EMCs,
DUAP

4.8.2 Continue to support and establish Catchment Management Committees as a means to coordinate coastal based management activities.

(Refer to Natural Features Maps in Appendix 6 for locations of CMCs and CMTs)

DLWC, Councils

CMCs, Relevant
Government Agencies

Highly Desirable

4.8.3 Continue to supported and establish Coastline Management Committees as a means to identify and implement coastal management programs.

Guidance Documents

- ◆ NSW Government, 1990, *Coastline Management Manual (under review).*

DLWC, Councils

Relevant Government
Agencies, CMCs

Highly Desirable

<p>4.8.4 Investigate ongoing mechanisms for encouraging integration between State Government coordinated catchment management committees, and coastal and estuary management committees coordinated by councils.</p>	<p>DLWC, Councils, SCCG</p>	<p>Relevant Government Agencies, CMCs, EMCs</p>	<p>Highly Desirable</p>
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4.9 INDIGENOUS ISSUES

Outcome: Suitable guidelines and other mechanisms available that provide the potential for the proper consideration and inclusion of indigenous peoples, interests by coastal managers.

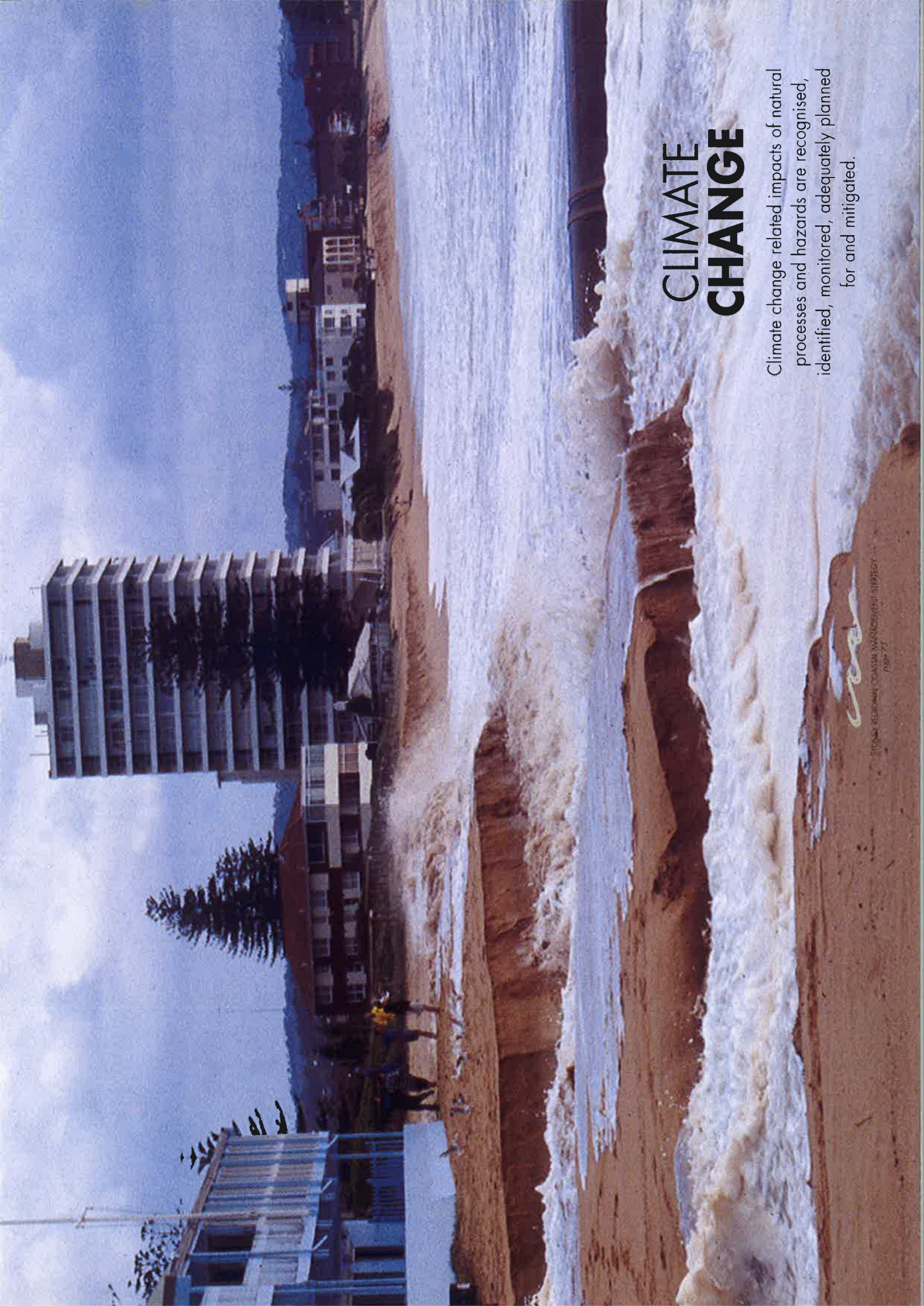
<p>4.9.1 There be a reinforcement and ongoing commitment of the government role in liaising with the Native Title Tribunal, Land Councils and local Aboriginal groups and individuals to ensure that indigenous rights, interests, and beliefs are respected, considered and incorporated, where appropriate, into management and planning processes and decisions.</p>	<p>Relevant Government Agencies, Councils</p> <p>Native Title Tribunal, ALCs, Aboriginal groups,</p>
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- Guidance Documents**
- ◆ IGSA, 1997, *A Guide for Developing a Statement of Commitment Between Local Government & Aboriginal and Torres Strait Islander Communities.*
 - ◆ ALGA, Council for Aboriginal Reconciliation, National Native Title Tribunal and W.A. Municipal Association, 1997, *Working With Native Title.*
 - ◆ ALGA, 1998, *Working Out Agreements - A Practical Guide to Agreements between Local Government & Indigenous Australians.* ALGA

<p>4.9.2 Consultation between government agencies, local government, local Aboriginal Land Councils and the Native Title Tribunal, regarding the management of coastal lands that may be subject to Native Title Claims under the Commonwealth Native Title Act 1993.</p>	<p>Relevant Government Agencies, Councils</p> <p>Dept of Aboriginal Affairs, ALCs, NTT</p>
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- Guidance Document**
- ◆ ALGA, Council for Aboriginal Reconciliation, National Native Title Tribunal and W.A. Municipal Association, 1997, *Working With Native Title.* AREA

STRATEGIC ACTION	PRIMARY RESPONSIBILITY	SECONDARY RESPONSIBILITY	PRIORITY
<p>4.9.3 Include representatives of local Aboriginal communities on local heritage planning or other relevant committees, to ensure cultural heritage issues are considered and incorporated into coastal management and planning processes and activities</p>	<p>Councils</p>	<p>Dept of Aboriginal Affairs, Local ALCs, NPWS, DUAP</p>	<p>Highly Desirable</p>
<p>4.9.4 Facilitate a "one-stop-shop" to include, although not be restricted to, providing a contact register of relevant Aboriginal groups and key individuals to ensure regional consultation with and participation of indigenous groups regarding management and planning activities undertaken by coastal managers.</p>	<p>DLWC, Councils</p>	<p>NSW Aboriginal Land Council, NSW Aboriginal & Torres Strait Islander Commission</p>	<p>Essential</p>
<p>4.10 COMMUNITY INVOLVEMENT</p>			
<p>Outcome: All key user groups in the region have developed a "code of ethics" or "conduct" that promotes the sustainable use of the coastal zone.</p>			
<p>4.10.1 Codes of ethics and or codes of conduct/practice be prepared for all key recreational groups including, although not restricted to: divers; spearfishers; surfers; recreational fishers; boating groups; personal water craft users; and beach users.</p>	<p>Dept. of Sport & Recreation, Relevant recreational groups</p>	<p>Relevant Government Agencies, Councils</p>	<p>Highly Desirable</p>
<p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ Boating Industry Association, 1996, <i>Code of Conduct</i>. ◆ National SISC, 1997, <i>Code of Conduct</i>. ◆ Recfish Australia, 1996, <i>The National Code of Practice for Recreational and Sport Fishing</i>. 			
<p>4.11 EDUCATION</p>			
<p>Outcome: Suitably experienced and qualified coastal managers.</p>			
<p>4.11.1 Encourage coastal managers to improve their knowledge and skills by attending formal education courses, conferences and seminars.</p>	<p>Relevant Government Agencies, Councils</p>		<p>Highly Desirable</p>
<p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ Dept of Environment, Sport and Territories, 1995, <i>Coastal Studies - Directory of Relevant Tertiary Courses</i>. 			



CLIMATE CHANGE

Climate change related impacts of natural processes and hazards are recognised, identified, monitored, adequately planned for and mitigated.

ISSUES

REGIONAL ISSUES

- ◆ A general lack of sufficient regional monitoring, analysis and information concerning the greenhouse effect and its potential impact on sea level and regional climatic variations.
- ◆ A lack of greenhouse related policies, planning and development codes, and best practices.
- ◆ A lack of vulnerability (hazard) studies for the Sydney coastline.
- ◆ Ineffective and limited use of community awareness and education programs.



5.1 PLANNING CONTROLS AND ACTIVITIES

Outcome: Regionally consistent strategies covering the Sydney coastal zone that assess physical and ecological dynamic processes, natural hazards and sea level rise for relevant developments.

5.1.1 Continue to consider physical and ecological processes and natural hazards when assessing development applications.

Councils, DUAP,
NPWS, DLWC,
NSW Fisheries, WA

NSW Coastal
Council, CSIRO,
CMCs

Essential

Guidance Documents

- ◆ SSRCC, 1992, *A Greenhouse Strategy for the Southern Sydney Region*.

5.1.2 Consider appropriate planning mechanisms for incorporating sea level change scenarios set by the Intergovernmental Panel on Climate Change. This may include additional generic development conditions in IEPs and DCPs such as foreshore planning (including cliffs) that incorporates responsible development set backs; provision of coastal engineering works; provisions of piled foundations; and voluntary purchase.

Councils,
DLWC, DUAP,
WA

EPA, SCCG,
NSW Fisheries,
NPWS, CSIRO

Highly Desirable

Guidance Documents

- ◆ SSRCC, 1992, *A Greenhouse Strategy for the Southern Sydney Region*.
- ◆ Warringah Council, 1997, *Collaroy Narrabeen Coastline Management Plan - A Coastline Hazards Policy - Plan of Management*.

5.1.3 Undertake a vulnerability assessment (hazard study) for the entire Sydney coastline in accordance with the NSW Coastal Hazards Policy, taking into account the impact of the enhanced greenhouse effect on local and regional management and planning activities and communities. Consider voluntary purchase of dwellings under threat from coastal hazards. These lands to be managed as public open space.

DLWC, Councils

SCCG, DUAP,
EPA, LGSA,
CSIRO

Highly Desirable

Guidance Documents

- ◆ Environment Australia, 1998, *Draft Vulnerability and Assessment Guide*.
- ◆ NSW Government, 1990, *Coastline Management Manual* (under review)

STRATEGIC ACTION	PRIMARY RESPONSIBILITY	SECONDARY RESPONSIBILITY	PRIORITY
<p>5.1.4 Develop an Emergency Plan for major storm events and pollution incidents such as oil spills, that includes the development of contingency plans for low lying areas.</p> <p>Guidance Documents</p> <ul style="list-style-type: none"> ◆ EPA, 1992, <i>Coastal Resource Atlas for Oil Spills in Broken Bay, Pittwater and Hawkesbury River.</i> ◆ EPA, 1994, <i>Coastal Resource Atlas for Oil Spills in Port Jackson.</i> ◆ EPA, 1989, <i>Coastal Resource Atlas for Oil Spills in Botany Bay.</i> ◆ SSROC, 1992, <i>A Greenhouse Strategy for the Southern Sydney Region.</i> ◆ Environment Australia, 1998, <i>Draft Vulnerability and Assessment Guide.</i> 	DIWCG, EPA	Councils, LGSA, SCCG, State Emergency Service, WA.	Highly Desirable
<p>5.1.5 Develop greenhouse policies and planning and building codes. Consider supporting SSROC's Greenhouse Strategy A Greenhouse Strategy for the Southern Sydney Region, as a model strategy for Sydney wide application.</p> <p>Guidance Documents:</p> <ul style="list-style-type: none"> ◆ SSROC, 1992, <i>A Greenhouse Strategy for the Southern Sydney Region.</i> ◆ Ellis, M., et al., 1998, <i>Regional Energy, Water and Stormwater Efficiency Policy - Policy Toolkit and Reference Manual. Regional Planning Partnership, Keys Young.</i> 	Councils	DIWC, DUAP, SCCG, LGSA, ROCs, CMCs	Essential
<p>5.1.6 Undertake assessments of existing seawalls and river reveget assets and ongoing works requirements to ensure proper asset management. Encourage use of foreshore protection alternatives such as mangrove forest, fore and hind sand dune and mud flat rehabilitation.</p>	Councils, WA, DIWC	SCCG, LGSA, CMCs, EMCs	Highly Desirable

5.2 INFORMATION COORDINATION

Outcome: A regional climate and sea level monitoring system and associated education program targeting specific user groups.

5.2.1 Encourage research directed towards understanding and assessing climate change processes, mechanisms for source and sinks of greenhouse gases, and the potential regional and local impacts of climate change for dissemination to coastal managers.

As determined in the National Greenhouse Strategy to be finalised in 1998.

Australian Greenhouse Office, CSIRO
EPA, DLWC,
Councils, SCCC

Essential

Guidance Documents

- ◆ NSW EPA and CSIRO, 1997, *Fine Resolution Climate Change Scenarios for New South Wales. Annual Report 1996-97.*

5.2.2 Encourage the development of adequate national and regional climate and sea level monitoring analysis and distribution systems for use by local coastal managers.

As determined in the National Greenhouse Strategy to be finalised in 1998.

Australian Greenhouse Office, CSIRO, DUAP,
EPA, SCCC

Highly Desirable

5.2.3 Develop a community awareness and education program on greenhouse associated issues.

As determined in the National Greenhouse Strategy to be finalised in 1998.

EPA, Australian Greenhouse Office, Relevant Government Agencies, Councils,
CSIRO

Highly Desirable



CULTURAL HERITAGE

Items and areas of cultural heritage significance are protected, conserved and enhanced.

This is to be achieved through:

- ◆ improved understanding and commitment for the conservation, interpretation and, where appropriate, public use of areas and items of cultural heritage;
- ◆ the recognition of the rights and needs of indigenous people and the value of their contribution to protect items of cultural value.

ISSUES

REGIONAL ISSUES

- ◆ Insufficient identification, protection, conservation and enhancement of areas and items of cultural heritage.
- ◆ The lack of sensitive and appropriate regional heritage trails and corridors which link significant sites and improve community understanding and appreciation of cultural heritage items, assets and issues.
- ◆ Community perception that there are insufficient provisions to conserve areas and items of cultural heritage in existing regional and local environmental planning instruments and management plans.



6.1 HERITAGE ASSESSMENT AND MANAGEMENT

Outcomes: a) A register of locally and regionally significant coastal heritage items provided to coastal managers and reported in state of the environment reports and local planning instruments.
b) Guidelines that assist in the identification and assessment of significant Aboriginal heritage sites.

6.1.1

Develop criteria and procedures to enable identification and assessment of significant Aboriginal heritage sites, including, although not limited to, their condition, cultural value and significance, vulnerability and education value.

NPWS

NSW Aboriginal
Land Council, Dept of
Aboriginal Affairs

Essential

6.1.2

Continue to identify and assess local and regional coastal heritage resources through heritage studies for conservation and protection by relevant provisions in existing regional environmental plans, local government plans and relevant provisions of the *Environmental Planning and Assessment Act 1979* and the *Local Government Act 1993*.

Councils

Heritage Office,
NPWS, DUAP

Highly Desirable

6.1.3

Continue to develop and review the State Heritage Inventory and develop a Sydney Heritage Register ensuring that all cultural heritage items in the Sydney Region are recorded.

Heritage Office

Councils, NPWS,
Aboriginal groups,
NSW History Council

Essential

6.1.4

Develop sensitive and appropriate regional heritage trails and corridors which link significant sites and include interpretative signage that is consistent with coastal walkways.

Councils, NPWS

Heritage Office,
DLWC

Desirable

STRATEGIC ACTION

PRIMARY RESPONSIBILITY

SUPPORTING ORGANISATIONS

PRIORITY

6.1.5

Continue to protect important maritime archaeological heritage in the Sydney region through:

- ◆ the Maritime Archaeological Program of the NSW Heritage Office
- ◆ local government, government agencies and community involvement in the documentation, interpretation and protection of underwater cultural heritage
- ◆ further development of the policies and procedures for management of shipwrecks sites
- ◆ developing and reviewing of the Heritage Office's *Shipwrecks Atlas of New South Wales*
- ◆ further development of the Heritage Office's shipwreck database to assist in locating shipwrecks where dredging or other seabed disturbance is proposed
- ◆ ensuring that underwater archaeological sites are considered in EISs and other development proposals.

Guidance Documents

- ◆ Department of Planning, 1994, *Underwater Heritage - Principles and Guidelines*.
- ◆ Department of Planning, 1994, *Underwater Heritage - Local Government Guidelines*.
- ◆ Department of Planning, 1995, *Shipwreck Atlas of New South Wales, 2nd Ed.*

6.1.6

Regional and local planning instruments, development control plans and design guidelines will continue to identify and consider significant views and vistas within and from local government areas, including street patterns and layouts, and items of heritage significance.

Heritage Office,

NPWS, DIWC,
Councils

Highly Desirable

Councils, DIWC

Heritage Office,
DUAP

Highly Desirable

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5. GLOSSARY

AGENDA 21 "The global action plan for sustainable development." Local Agenda 21 explained in practice is "Local sustainability based upon global and long term as well as local outcomes, integrating planning and policy making and achieving economic and social environmental benefits at the same time and involving all sectors of the community. Amongst other things it encourages the wise use of resources and promotes an improvement in equity and quality of life."

AMENITY The quality of being pleasant or agreeable in situation, especially the pleasantness of a place; convenient features, facilities or services of a house, estate, district and so on.

ASSIMILATIVE CAPACITY

The limit to or rate at which the natural environment can absorb waste without adverse effect.

BALLAST WATER Water taken on board cargo ships to maintain their stability.

BIODIVERSITY The variety of life forms: the different plants, animals and micro-organisms, the genes they contain, and the ecosystems they form. It is usually considered at three levels: genetic diversity, species diversity and ecosystem diversity.

CARRYING CAPACITY

The level of use or activity beyond which impacts (e.g. social, ecological and cultural impacts) exceed acceptable levels.

CATCHMENT An area from which something is collected; an area of land from which rainwater that falls on it drains through a single drainage network.

CATCHMENT MANAGEMENT COMMITTEES

Committees made up of individuals from the community, councils, government and special interest groups, set up under the *Catchment Management Act 1989*. CMCs foster community involvement in and coordinate the implementation of total catchment management policies and programs.

CLIMATE CHANGE

The predictive changes in climate due to accumulation in the atmosphere of carbon dioxide and other gases produced by human activity.

COASTAL HAZARDS POLICY

A NSW Government policy adopted in 1988 that provides for:

- ◆ reducing the impact of coastal forces on development
- ◆ containing the potential for coastal damage by effective planning and development control,
- ◆ a merit approach to all development and building decisions which takes account of social, economic, ecological and coastal process considerations.

COASTAL MANAGEMENT PROGRAM

A NSW Government Program, administered by the Department of Land and Water Conservation, which provides local government and agencies with the technical and financial assistance to prepare and implement coastal management plans.



COASTAL ZONE

The *NSW Coastal Policy 1997* defines the coastal zone as:

- ◆ three nautical miles seaward of the mainland and offshore islands;
- ◆ one kilometre landward of the open coast high water mark;
- ◆ a distance of one kilometre around:
 - all bays, estuaries, coastal lakes, lagoons and islands;
 - tidal waters of coastal rivers to the limit of the mangroves as defined by NSW Fisheries' (1985) map or the tidal limit whichever is closer to the sea;
- ◆ with the line on the maps being taken to the nearest cadastral boundary and/or easily recognisable physical boundary, in consultation with local councils.

For the purposes of the SRCMS the coastal zone comprises the local government areas of the Sydney Coastal Councils Group and the adjacent marine waters within three nautical miles of the coastline.

COASTCARE

A program promoting a co-operative approach towards integrated coastal zone management between local, State and Commonwealth governments, industry and the community. Two main aims are:

- ◆ to assist the community to acquire the skills and knowledge to care for the coast,
- ◆ to encourage and support individuals and groups to become actively involved in protecting and managing coastal areas.

COASTLINE MANAGEMENT COMMITTEE

An advisory body made up of community and technical interest including elected members of councils, council staff, local community representatives, DUAP, DLWC and other appropriate state government agency representatives to assist councils in the development and implementation of a coastline management plan.

CONSERVATION

The protection, maintenance, management, sustainable use, restoration and enhancement of the natural environment.

CONSULTATION

The act of consulting; conference; a meeting for deliberation; an application for advice to one engaged in a profession.

CULTURAL HERITAGE

Knowledge, places and things, including those made or changed by humans, that have aesthetic, historic, scientific, social or spiritual significance or other special value for future generations as well as the present community.

DEVELOPER CONTRIBUTIONS (s.#94)

Refers to the contributions, either monetary, land or facilities, that can be levied from developers by local councils under section 94 of the *Environmental Planning and Assessment Act 1979* to compensate for increased demands for facilities or infrastructure as a result of specific developments.

DEVELOPMENT CONTROL PLAN

A planning instrument that can cover a wide range of issues, but with more flexibility and usually in more detail than a local plan. It may include planning guidelines for particular areas or types of development.

DUNECARE

A specific form of Landcare involving the community working as unpaid volunteers on public land for the public good. Dunecare groups are found along the NSW coastline and are active in a range of coastal conservation activities.

ECOLOGICALLY SUSTAINABLE DEVELOPMENT

Refers to development that uses, conserves and enhances the community's resources so that the ecological processes on which life depends are maintained and the total quality of life now and in the future can be increased.



- ECOSYSTEM** A dynamic complex of plant, animal, fungal and micro-organism communities and the associated non-living environment interacting as an ecological unit.
- ECO-TOURISM** Nature based tourism that involves education and interpretation of the natural environment and is managed to be ecologically sustainable.
- ENDANGERED (species, populations and ecological communities)** Species, populations and ecological communities in danger of extinction and whose survival is unlikely if the factors threatening their survival continue operating. Specified in the *Threatened Species Conservation Act 1995* as being in danger of becoming extinct.
- ENDEMIC** Restricted to a specified region or locality.
- ENHANCED GREENHOUSE EFFECT** Changes in the Earth's climate as a result of increased levels of greenhouse gases in the atmosphere due to human activity.
- ENHANCEMENT** To introduce to a place additional individuals of one or more species or habitat elements which naturally exist there.
- ESTUARY** The lower course of a river or stream forming a semi-enclosed water body connected to the sea, with in which tides have an effect and where fresh and saline water mix.
- ESTUARY MANAGEMENT COMMITTEES** An advisory body made up of representatives of relevant government agencies, local community groups and users of the estuary which assists councils to develop and implement estuary management plans.
- ESTUARY MANAGEMENT PROGRAM** A NSW Government Program, administered by the Department of Land and Water Conservation, which provides local government and agencies with technical and financial assistance to prepare and implement estuary management plans.
- EXTINCT SPECIES** Species no longer in existence or not located in the wild during the last 50 years.
- FERAL SPECIES** A domesticated species that has become wild.
- GEOGRAPHIC INFORMATION SYSTEM** A computer information system which stores, analyses and displays spatial and geographic data.
- GUIDELINES** A principle put forward to set standards or determine a course of action.
- ENHANCED GREENHOUSE EFFECT** Changes in the earth's climate as a result of increasing levels of greenhouse gases in the atmosphere due human activity.
- HABITAT** The living space of a species or community, providing a particular set of environmental conditions.
- INDIGENOUS PEOPLES** Australians who identify as belonging to Aboriginal and Torres Strait Islander groups and who are recognised by their communities as belonging to those groups.
- INTEGRATED COASTAL ZONE MANAGEMENT** A dynamic process in which a coordinated strategy is developed and implemented for the allocation of environmental, socio-cultural and institutional resources to achieve the conservation and sustainable of the coastal zone.



INTEGRATED LOCAL AREA PLANNING

A management method based on eight core strategies: local governance; intergovernmental cooperation; community partnership; optimum use of resources; integrated social, economic and environmental planning; sustainable change; shared vision and local ownership.

INTERGOVERNMENTAL AGREEMENT ON THE ENVIRONMENT

Aims to provide a basis for a new cooperative approach to the management of environmental issues in Australia. It involves the three spheres of government and delineates the responsibilities and interests of each.

INTERTIDAL ZONE

Pertaining to those areas of land covered by water at high tide but exposed at low tide.

LOCAL ENVIRONMENTAL PLAN

A planning instrument made under the *Environmental Planning and Assessment Act 1979* which takes a wide range of forms, from site specific guidelines to dealing with an entire local government area. The LEP be consistent with any relevant Regional Environmental Plan (REP) or State Environmental Planning Policies (SEPPs) unless the inconsistency is justified.

MARINE

Of or relating to the sea.

NON-POINT SOURCE POLLUTION

Pollution that has no single place of origin.

OBJECTIVES

A component of a goal that, if met, would help ensure that the goal is achieved.

OUTCOME STATEMENTS

An end towards which management efforts are directed, something aimed at, a goal.

PATHOGEN

A disease causing organism.

POINT SOURCE POLLUTION

Pollution that has an identifiable place of origin.

POLICY

A definite course of action adopted as expedient or from other considerations, a course or line of action adopted and pursued by a government, ruler, political party or the like, action or procedure conforming to, or considered with reference to prudence or expediency.

PRECAUTIONARY PRINCIPLE

Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

PRINCIPLES

Statements that guide decision makers by setting out the factors that should form the basis for reasoning when management or resource use decisions are made.

PROTECTED AREA

A geographically defined area which is designated or regulated and managed to achieve specific conservation objectives.

RECOVERY PLAN

A document which identifies the actions to be taken to promote the recovery of a threatened species, population or ecological community.

REGIONAL COASTAL MANAGEMENT STRATEGY

An integrated regional strategic management framework that achieves desired outcomes, that are intended to protect and conserve terrestrial and marine ecosystems and resources in the coastal zone, through the implementation of identified sustainable coastal planning and management practices.



REGIONAL ENVIRONMENT PLANS (REPs) AND STATE ENVIRONMENTAL PLANNING POLICIES (SEPPs)

These instruments can only be made where the Minister of Urban Affairs and Planning is of the opinion that they are concerned with matters of environmental planning significance for a region or for the State respectively. Primarily the domain of the State Government and generally prevails over LEPs. REPs are made by the Minister under section 51 of the *Environmental Planning and Assessment Act, 1979*, SEPPs are made by the Governor under section 39 of the EP&A Act 1979.

REMNANT A small fragmented portion of the former dominant vegetation which once covered the area before being cleared for human land use.

RIPARIAN VEGETATION

Vegetation growing along the banks of rivers, including the brackish upstream reaches of an estuary.

SECTION 90, ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

Specifies matters for consideration by a consent authority, e.g. local councils, in the determination of a development application.

SECTION 117 DIRECTIONS, ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

A direction by the Minister of Urban Affairs and Planning under section 117 of the *Environmental Planning and Assessment Act 1979* to a public authority or a person to carry out their function under the EP&A Act 1979 or an Environmental Planning Instrument.

SEWAGE Household and commercial wastewater that contains human or trade waste.

SEWERAGE The system which facilitates the collection, transport, treatment and discharge of sewage.

STORMWATER Runoff from land during and after rain. Stormwater removes accumulated material including litter, soil, nutrients, pathogens, chemicals, pesticides, oils and grease.

STRATEGIC MANAGEMENT

An approach to management that includes the establishment of desired outcomes and identifies ways of achieving them, and which entails periodic review and amendment of the outcomes and ways to achieve them.

STRATEGY A long term plan for success. Skillful management in getting the better of an adversary or attaining an end, the method of conducting operations especially by the aid of manoeuvring or stratagem.

TERRESTRIAL Belonging to or living on the land.

THREATENED (species, population and ecological communities)

A species, population and ecological community that is vulnerable, endangered or presumed extinct. Specified in the *Threatened Species Conservation Act 1995* as either endangered, vulnerable presumed extinct.

TOTAL CATCHMENT MANAGEMENT

The coordinated and sustainable use and management of land, water, vegetation and other natural resources on a catchment basis so as to balance resource utilisation and conservation.

WETLAND Areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six metres.



6. REFERENCES

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- ◆ Botany Bay, Hornsby, Leichhardt, Manly, Mosman, North Sydney, Pittwater, Randwick, Rockdale, South Sydney, Sutherland, Sydney, Warringah, Waverley, Willoughby and Woollahra Councils, 1997, *1996-97 State of the Environment Reports*.
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COMMUNITY CONSULTATION & PARTICIPATION PROGRAM

1. COMMUNITY CONSULTATION AND PARTICIPATION PROCESS

To ensure that there was continuous community consultation and participation, and to encourage support for the SRCMS, all key stakeholders and relevant community groups were identified and encouraged to participate at key stages of the project. This was achieved by undertaking the following community consultation processes.

1.1 INTRODUCTORY LETTERS OF INVITATION AND COASTAL COMMUNITY SURVEY

Over 600 introductory letters of invitation and surveys were distributed in the study area to: environment groups; precinct, community, resident, and progress associations; chambers of commerce; catchment management committees; industry groups; action groups; recreational groups, clubs and associations; State and national environment groups; Aboriginal groups; flora and fauna societies; bush and dunecare groups; coastcare groups; surf lifesaving clubs; federal, State and local government politicians; local government officers and related committees; State Government agencies; regional organisations of councils; universities; and individuals.

The introductory letters of invitation accompanied the initial coastal community survey to inform the community of the aims and expected outcomes of the strategy, including its importance and opportunities for stakeholder involvement. The letters were designed to encourage ongoing community consultation and participation, and to inform participants of subsequent consultation and participation phases.

The community survey was designed using similar issues that were identified in relevant key past international, national, State and local community and government surveys, inquiries and studies. The aims of the initial community survey were to determine what coastal management and planning issues, problems, constraints and opportunities are important to the community, what coastal features and/or activities in the respondent's area are of special importance and what coastal management activities the individuals or organisations are actively involved in, in the study area.

The survey was distributed in September 1996 with the majority of responses received by the end of March 1997.

Respondents were asked to prioritise, in order of most importance, the key coastal issues listed on the next page. It was highlighted that the issues relate specifically to the coastal zone. The survey contained no additional explanatory information concerning the clarification or definition of the 18 coastal issues. This allowed for unprompted responses and permitted evaluation of what the issues actually meant to survey participants.



List of Key Regional Issues

- ◆ Biodiversity
- ◆ Catchment Management
- ◆ Climate Change
- ◆ Coastal Dynamics
- ◆ Conservation of Cultural Heritage
- ◆ Conservation of Natural Heritage
- ◆ Development
- ◆ Ecologically Sustainable Development
- ◆ Government Administration
- ◆ Government Legislation
- ◆ Government Policy
- ◆ Land Use Planning
- ◆ Natural Resource Management
- ◆ Public Access
- ◆ Sewage Treatment and Disposal
- ◆ Threatened Species
- ◆ Waste Management
- ◆ Water Quality
- ◆ Other(s)

Respondents were also asked to provide details regarding: perceived problems and constraints associated with the 18 identified coastal zone planning and management issues and opportunities that should be considered for trialing in the study area; coastal features and activities of special importance; and coastal management activities that the respondents were involved in.

The study area was divided into five major sub-regions for the survey evaluation, formed approximately along natural catchment boundaries: the Northern Beaches, Sydney Harbour, the Eastern Beaches, Botany Bay and Port Hacking (see Figure 2). These were selected so that major issues and concerns of responding groups could be linked to specific catchment areas allowing a comparison between coastal areas in Sydney and past studies. Groups and organisations not specifically representing or from a subregion but representing or having responsibility for a greater area than the study area, including government agencies, conservation groups and research organisations, were categorised into a "non-region" category. More detailed information is provided in section 2.1 of this Appendix.

1.2 COASTAL COMMUNITY WORKSHOPS

A series of ten coastal community workshops were held during July 1997 in Sydney. Two workshops (day/evening) were held on the Northern Beaches (at Warringah Council), Eastern Beaches (at Waverley Council), Botany Bay (at Rockdale Council), Port Hacking (at Sutherland Council) and Sydney Harbour (at Sydney City Council) facilitated by Professor Bruce Thom (Chairperson of the NSW Coastal Council).

The workshops were designed to formulate an agreed consensus of what the key coastal management issues facing the Sydney Region are and how these should be addressed in the development and implementation of the SRCMS. The workshops also formulated an initial set of associated management actions for the study area. More detail is provided in section 2.2 of this Appendix.

Each of the ten workshops followed a similar agenda consisting of:

Principles of Coastal Zone Management

- ◆ Ecologically Sustainable Development
- ◆ Integrated Coastal Zone Management
- ◆ NSW Coastal Policy
- ◆ Limitations (technical/financial/structural)

Hot Issues

- ◆ Water Quality (Water Management)
- ◆ Nature Conservation (including cultural heritage)
- ◆ Public Access
- ◆ Role of Government
- ◆ Climate Change



Hot Spots

- ◆ Within Sydney coastal subregions
- ◆ Between the Sydney coastal subregions

Strategic Actions

- ◆ Long-term actions
- ◆ Immediate actions

Summary

- ◆ (by the facilitator)

1.3 PUBLIC EXHIBITION PERIOD FOR THE DRAFT STRATEGY

The public exhibition process included the distribution of the draft strategy to approximately 430 community groups and individuals and the distribution of "master copies" to RSC representatives and SCCG member councils for distribution throughout their organisations. Copies of the draft strategy were exhibited at council administration buildings and at the Pittwater Coastal, Manly and Sutherland Environment Centres and the Total Environment Centre. Advertisements were also placed in local print media encouraging submissions.

1.4 ONGOING PARTICIPATION AND INFORMATION EXCHANGE

SRCMS newsletters were distributed to stakeholders at the end of key stages of the project. The newsletters are intended to provide those interested community groups and key stakeholders with progress reports, to inform the community of important coming events, document releases and contact details, and encourage active participation at key stages of the project. Newsletters will continue to be distributed to regularly update interested stakeholders on the implementation progress of the strategic actions and other key activities as they occur.

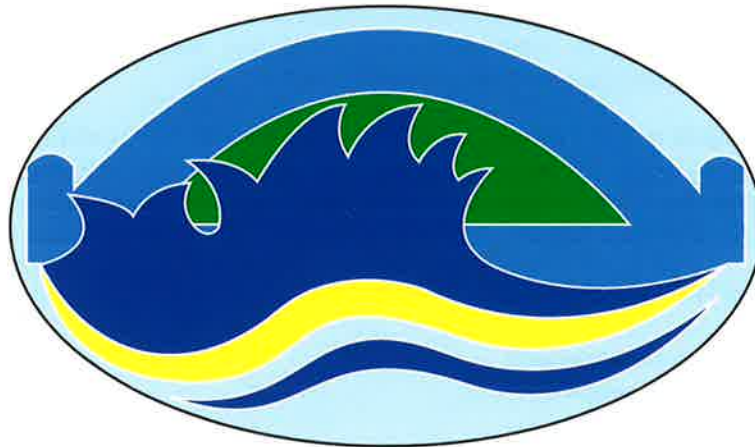
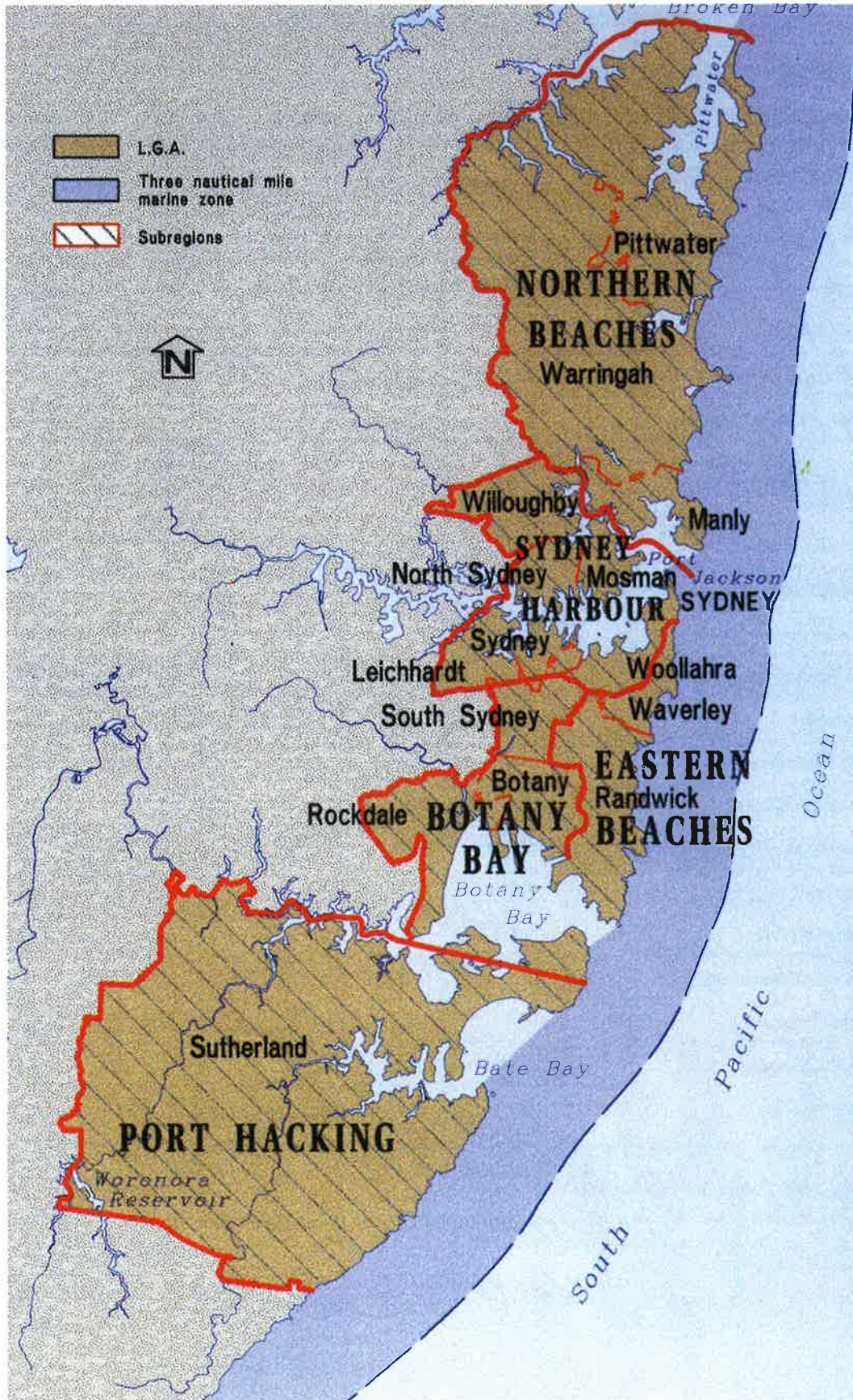


FIGURE 2 - STUDY AREA **SUBREGIONS**



Prepared by DUAP

2. COMMUNITY CONSULTATION AND PARTICIPATION OUTCOMES

2.1 COASTAL COMMUNITY SURVEY

By the end of April 1997, 80 surveys had been received and reviewed, representing a 13% return rate. Respondents were asked to rate 18 identified coastal management issues in order of importance, resulting in the following overall rankings:

ISSUE	Overall Ranking	Northern Beaches	Sydney Harbour	Eastern Beaches	Botany	Port Hacking	Non-Region
Water Quality	1	1	1	2	4	7	1
Conservation of Natural Heritage	2	2	5	1	5	3	6
Sewage Treatment and Disposal	3	3	3	4	8	2	9
ESD ¹	4	5	2	12	6	1	4
Development	5	6	4	7	3	5	4
Land Use Planning	6	7	9	9	1	6	3
Catchment Management	7	4	8	8	2	16	9
Natural Resource Management	8	9	11	10	7	10	2
Public Access	9	11	6	3	15	17	13
Biodiversity	10	0	13	6	9	9	8
Waste Management	11	8	7	11	14	13	17
Threatened Species	12	14	16	5	9	8	13
Conservation of Cultural Heritage	13	16	10	12	11	13	16
Government Legislation	14	15	15	14	11	11	11
Government Policy	15	13	14	16	16	12	7
Government Administration	16	17	12	15	17	15	12
Coastal Dynamics	17	12	17	17	13	4	15
Climate Change	18	18	18	18	18	18	18
Survey Numbers	80	18	21	14	7	6	14

¹ Ecologically Sustainable Development

N.B. The shaded boxes indicate a ranking variation of greater than five, compared to the "overall" ranking.



Respondents documented a myriad of coastal zone planning and management opportunities. Some generic opportunities include:

- ◆ The promotion of ecologically sustainable development and its incorporation into local and State planning and management instruments
- ◆ The maintenance, preservation and creation of public open space and public amenity, and appropriate access to foreshore areas
- ◆ The maintenance, preservation and enhancement of remaining natural areas
- ◆ Increased education of user groups and coastal zone management and planning stakeholders
- ◆ Increased policing and enforcement of environmental legislation
- ◆ Rezoning land for the provision of public open space
- ◆ The promotion of community input into coastal zone planning and management activities.

The community survey documented numerous potential and existing coastal management problems and constraints, including:

- ◆ Poorly integrated, uncoordinated and inconsistent planning and development approval systems
- ◆ General lack of integrated and coordinated management of resources within and between government agencies and organisations
- ◆ General insufficient financial resources available to coastal managers
- ◆ Lack of implementation of key coastal zone objectives and policies and the lack of integration with social, economic and environmental goals
- ◆ General lack of sufficient scientific and ecological knowledge
- ◆ General lack of appropriate and sensitive public access to coastal resources
- ◆ Inappropriate and general overdevelopment of many areas, including within coastal hazards zones
- ◆ Lack of enforcement of environmental legislation
- ◆ General lack of commitment to sustainable management practices
- ◆ Political conflict and ideological differences.

The survey respondents highlighted a variety of coastal features and activities which they thought were important.

The generic natural features identified across the study area were (no particular order):

- ◆ lagoons
- ◆ estuaries
- ◆ creeks
- ◆ dune Habitats
- ◆ headlands
- ◆ remnant bushland
- ◆ mangroves
- ◆ wetlands
- ◆ mud Flats
- ◆ seagrass Beds
- ◆ coastal reserves
- ◆ sandy beach habitats
- ◆ aquatic Reserves
- ◆ coastal cliffs
- ◆ national parks and reserves
- ◆ Intertidal Protected Areas
- ◆ foreshore open space areas



Non-natural features of importance identified were:

- ◆ coastal walkways
- ◆ foreshore parks
- ◆ ocean/estuarine pools/baths
- ◆ various cultural heritage items (Aboriginal and non-Aboriginal)

The identified activities of special importance across the study area were (no particular order):

- ◆ recreational (full range)
- ◆ tourism
- ◆ coastal walkways
- ◆ access to foreshore parks/reserves
- ◆ fishing (commercial/recreational)
- ◆ sightseeing
- ◆ boating areas and access
- ◆ access to foreshore areas

The *Sydney Regional Coastal Management Strategy - Coastal Community Survey Summary Report, 1997* is available through the SCCG.

2.2 COASTAL COMMUNITY WORKSHOPS

A total of approximately 200 individuals from more than 100 groups, organisations and agencies participated in the workshops. Workshop participants identified an extensive array of key issues facing the Sydney coastal region as well as a diversity of possible management actions to help address key coastal management and planning issues.

The issue of primary concern to most workshop participants was the urgent need for improved water management. This included concerns regarding the adequacy of the existing sewer and stormwater systems and the identification and management of all key pollution sources. Also of primary concern was the view that governments should be encouraged to protect and conserve (and better manage) natural areas, that is, terrestrial and aquatic remnants and biota.

The increased provision of public access was another primary concern. It was considered that access to existing public areas of the coast should be protected and added to where possible and appropriate. The sell off of public foreshore land was highlighted as a major concern and one which had a direct impact on a community's ability to use and enjoy the many coastal resources along Sydney foreshores. It was further highlighted that there is a need for better communication and cooperation on these matters.

Underlying much of the discussion was the need for increased research regarding a great variety of coastal management issues including ensuring improvements in education and improved information exchange concerning natural, social, historical, political and commercial issues affecting the Sydney coastal zone.

The outcome of the workshops was the development of an extensive list of coastal management issues of concern to the community as well as the identification of a variety of proposed strategic actions to address the diversity of issues and locations where these problems occur. These actions have been incorporated into the Strategic Actions Program where feasible and appropriate.

The workshop report prepared by Professor Bruce Thom, including the overall summary and the details of what was discussed at each workshop, is available through the SCCG.



2.3 PUBLIC EXHIBITION PERIOD FOR THE DRAFT STRATEGY

A total of approximately 620 copies of the draft strategy were distributed to groups and individuals as well as key stakeholders on the RSC and SCCG member councils. A total of 38 submissions were received providing various comments relating to the format, content and implementation of the strategy, and the suitability and appropriateness of the strategic actions. These comments have been incorporated into the strategy where appropriate.

2.4 ONGOING PARTICIPATION AND INFORMATION EXCHANGE - NEWSLETTERS AND DRAFT STRATEGY COMMENTS

A total of 430 individuals from over 135 groups, organisations and agencies contributed to the community consultation and participation program. Each one of these individuals is on the revised mailing list for the SRCMS. Two SRCMS newsletters have been distributed to these stakeholders, to inform them of the activities of the various stages. Newsletters will continue to be distributed to regularly update interested stakeholders about the implementation progress of the Strategic Actions Program and other key outcomes as they occur.



LIST OF PARTICIPATING GROUPS AND INDIVIDUALS

Agenda 21 - Marina Association
Ampol
Anglers Action Group Incorporated
Australian Conservation Foundation
Australian Lab Services
Australian Marine Conservation Society
Australian Underwater Foundation
Australian Water Services
Avalon Preservation Trust
Beachwatch (EPA)
Boat Owners Association of NSW
Botany Bay Council
Botany Bay Environmental Watch
Brightmore Bush Care Group
Bronte Beach Precinct Committee
Cane Factor Holdings
Centennial Bakery Museum - Hurstville Historic Society
Centennial Park and Moore Park Trust
Chinamans Beach Residents Association/Action Group
Clovelly Precinct Committee
Coastal Environment Centre
Coastal and Marine Geosciences
Coastcare
Collaroy Surf Lifesaving Club
Coogee Precinct Committee
Cremorne Point Bushcare Group
Cronulla Dunes and Wetlands Protection Alliance Inc.
Cronulla Precinct Committee
Department of Health - SE Sydney Public Health Unit
Department of Land and Water Conservation
Department of Urban Affairs and Planning
DLWC - Aboriginal Liaison Officer
Dolphin Society
Edward Precinct Committee
Environment Australia - Portfolio Marine Group
Environment Protection Authority
Environmental Geology Group (University of Sydney)
Era Surf Lifesaving Club
Fairy Bower Precinct Committee
Federation of Bushwalking Clubs NSW
Friends of Avalon Dunes
Friends of the Earth
Friends of Wyargine Point
Garie Beach Surf Lifesaving Club
Georges River Catchment Management Committee
Glebe Society
Gordons Bay Amateur Fishing and Volunteer Sea Rescue Club Inc.
Gordons Bay Volunteer Bush Regeneration Project
Hacking River Catchment Management Committee
Headland Preservation Group
Hornsby Council
Ingleside Residents Association
Inner City and Foreshores Community Action Group Inc.
Inner Metropolitan Regional Organisation of Councils
Institute of Marine Ecology
Keep Australia Beautiful Council (NSW)
Kogarah Council
Kurnell Progress and Precinct Committee
La Perouse Precinct Committee
La Perouse United Aboriginal Corporation for Sport and Recreation
Lane Cove Catchment Management Committee
Lane Cove Council
Leichhardt Council
Local Government and Shires Associations
Malabar Bush Regeneration Group
Manly Council
Manly Environment Centre
Manly Hydraulics Laboratory
Marine and Coastal Community Network
Maroubra Chamber of Commerce
Maroubra Precinct Committee
Metropolitan District Professional Fisherman Association
Mill Hill Precinct Committee
Milsons Precinct Committee
Mona Vale Chamber of Commerce
Mosman Council
Narrabeen Lagoon Committee
National Parks and Wildlife Service
National Parks Association of NSW
Natural Allies
Newport Chamber of Commerce
Newport Surf Lifesaving Club
North Bondi Surf Lifesaving Club
North Cronulla Precinct Committee
North Narrabeen Boardriders Club
North Sydney Council
Northern Beaches Women's Boardriders Club
NSW Fisheries
Ocean Beach Precinct Committee
Ocean Watch
Office of Marine Administration
Outdoor Guiding TAFE
Pittwater Council
Pittwater Flora and Fauna Society
Port Hacking Protection Society
Randwick Council
Randwick Precinct Committee
Residents of Balmain East
Rockdale and District Landscape Heritage Committee



Rockdale Council
 Ryde Hunters Hill Flora and Fauna Society
 Save Manly Dam Catchment Committee
 Scotland Island Residents Association
 Snails Bay Resident Group
 South Sydney Council
 South Sydney Regional Organisation of Councils
 Spot Precinct Committee
 Stanton Precinct Committee
 Streamwatch (Sydney Water)
 Surf Lifesaving New South Wales
 Surfrider Foundation
 Sutherland Council
 Sutherland Shire Environment Centre
 Sydney Airport
 Sydney City Council
 Sydney Coastal Councils Group
 Sydney Harbour and Foreshores Committee
 Sydney Northern Beaches Catchment Management
 Committee
 Sydney Ports Corporation
 Sydney Pro-Am Committee
 Sydney Water
 The Glebe Society Incorporated
 The Port Hacking Protection Society
 Unilever-Ampol Action Group
 Unilever Australia Limited
 University of Sydney
 University of Technology Sydney
 Vacluse Progress Association
 Warringah Council
 Waterways Authority of NSW
 Waverley-Charing Cross Precinct Committee
 Waverley Council

West Pittwater Community Association
 Willoughby Council
 Willoughby Environmental Protection Association
 Woollahra Council
 Woollahra History and Heritage Society
 Yachting Association of NSW

Individuals *(not identified as belonging to an organisation)*

Mr Ian Armstrong
 Ms Mary Daish
 Ms Sally Dove
 Mr Peter Finch
 Mr Cedric Holden
 Ms Karen Judd
 Ms Val Leinatars
 Mr Tony Liffin
 Ms Toni McKay
 Ms Anne Mouland
 Mr Patrick Mullins
 Mr Douglas Murray
 Mr Pat Murray
 Ms Mary Lou Outridge
 Mr David Parma
 Ms Elaine Parma
 Mr Neale Philip
 Mr Ian Puckeridge
 Mr A. Rivers
 Ms Claire Sandford
 Ms Ingrid Strewé
 Mr Ian Sutherland
 Ms E.R. Taylor
 Ms Irene Thom



FORMATION OF THE REGIONAL STEERING COMMITTEE

In 1994-1995 the SCCG adopted a position statement and agreed to obtain support and involvement for preparing and implementing a regional coastal management strategy from key stakeholders. This cooperative approach is in line with Integrated Local Area Planning (ILAP) principles recommended during the Coastal Zone Inquiry and incorporated into the Commonwealth Government's *Coastal Policy, 1995*.

To achieve the integration of local needs with national and State coastal planning policies and strategies, and to ensure key stakeholders participation in the process, the SCCG established a RSC.

Present * and Past Members of the Regional Steering Committee

◆ Mr Kendall Banfield	Department of Urban Affairs and Planning
◆ Ms Kym Bilham	Marine and Coastal Community Network
◆ Mr Craig Bohm *	Marine and Coastal Community Network
◆ Mr Michael Chanell *	Sydney Coastal Councils Group
◆ Ms Michelle Chapman *	Local Government and Shires Associations of NSW
◆ Mr John Filocamo *	Department of Land and Water Conservation
◆ Ms Rebecca Fisher	Marine and Coastal Community Network
◆ Mr Mark Flanagan	DEST-Coastal and Marine Section
◆ Mr Glenn Ford	Department of Housing and Regional Development-Strategic Coastal Management
◆ Mr Greg Foster	Department of Land and Water Conservation
◆ Mr Mike Geary	Department of Land and Water Conservation
◆ Mr Greg Greene *	Sydney Water Corporation
◆ Ms Erica Griffiths *	Warringah Council
◆ Mr Graham Harding	Department of Conservation and Land Management
◆ Dr Graham Harris	CSIRO
◆ Cr Patricia Harvey *	Sydney Coastal Council Group - Chairperson
◆ Mr Kevin Hibbert *	Department of Land and Water Conservation
◆ Mr John Hickey *	Waterways Authority of NSW
◆ Dr Ross Higginson *	NSW Environment Protection Authority
◆ Ms Mandy Hillson *	Environment Australia-Portfolio Marine Group
◆ Mr Joe Ibbitson	Local Government and Shires Associations
◆ Mr Mark Matchett *	Office of Marine Administration
◆ Mr Tony Middleton	Waterways Authority of NSW
◆ Ms Rhonda Neuhold	Department of Housing and Regional Development
◆ Mr David Osborn	DEST-Coastal and Marine Section
◆ Ms Wendy Parsons	CSIRO
◆ Mr Richard Pearson *	Department of Urban Affairs and Planning
◆ Ms Joy Quindat	Sydney Water Corporation
◆ Mr Andy Raeburn	Sydney Water Corporation
◆ Mr Peter Shadie *	National Parks and Wildlife Service
◆ Ms Maria Simonelli	DEST-Coastal Strategy Section
◆ Mr Adam Smith *	NSW Fisheries
◆ Ms Fay Sutton *	Australian Conservation Foundation; Nature Conservation Council of NSW
◆ Mr Bob Verhey	Local Government and Shires Associations of NSW
◆ Dr Ian Webster *	CSIRO
◆ Mr Geoff Withycombe *	Sydney Coastal Councils Group and Project Officer



APPENDIX 3

ENDANGERED SPECIES, POPULATIONS AND ECOLOGICAL COMMUNITIES OF THE SYDNEY REGION

Source: NSW National Parks and Wildlife Service,
Atlas of NSW Wildlife - Species List Codings

KEY

FAUNA

SCIENTIFIC NAME Refers to the genus and species name according to the Census of Australian Vertebrate Species (CAVS)

COMMON NAME Refers to the common name of the species

LEGAL STATUS This identifies the legal status of the species within NSW, under the *Threatened Species Conservation Act 1995*

- V** Vulnerable (Schedule 2)
- E1** Endangered (Schedule 1 - part 1)
- E4** Endangered (Schedule 1 - part 4)
- P** Protected
- U** Unprotected

SIGHTINGS/SPECIES This gives the number of records for this species in the search area

FLORA

SCIENTIFIC NAME Refers to the genus and species name according to the Census of Australian Plant Species (CAPS)

FAMILY NAME Refers to family name according to the CAPS

LEGAL STATUS This identifies the legal status of the species within NSW, under the *Threatened Species Conservation Act 1995* and the *National Parks and Wildlife Act 1974*.

- V** Vulnerable (Schedule 2)
- E1** Endangered (Schedule 1 - part 1)
- E4** Endangered (Schedule 1 - part 4)
- P** Protected
- U** Unprotected

SIGHTINGS/SPECIES This gives the number of records for this species in the search area

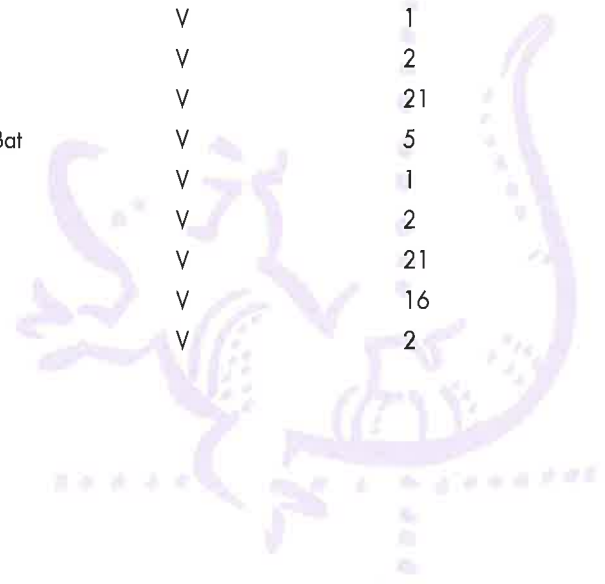


ENDANGERED FAUNA OF THE SYDNEY REGION

SCIENTIFIC NAME (Latest Taxon)	COMMON NAME (Latest Taxon)	LEGAL STATUS	SIGHTINGS/SPECIES
◆ <i>Crinia tinnula</i>	Wallum Froglet	V	18
◆ <i>Heleioporus australiacus</i>	Giant Burrowing Frog	V	50
◆ <i>Pseudophryne australis</i>	Red - Crowned Toadlet	V	96
◆ <i>Litoria aurea</i>	Green and Golden Bell Frog	E1	75
◆ <i>Chelonia mydas</i>	Green Turtle	V	7
◆ <i>Dermochelys coriacea</i>	Leathery Turtle	V	6
◆ <i>Varanus rosenbergi</i>	Heath Monitor	V	3
◆ <i>Anseranas semipalmata</i>	Magpie Goose	V	9
◆ <i>Nettapus coromandelianus</i>	Cotton Pygmy - Goose	E1	4
◆ <i>Oxyura australis</i>	Blue - Billed Duck	V	1
◆ <i>Stictonetta naevosa</i>	Freckled Duck	V	1
◆ <i>Pterodroma leuoptera</i>	Gould's Petrel	V	23
◆ <i>Pterodroma neglecta</i>	Kermadec Petrel	V	8
◆ <i>Pterodroma nigripennis</i>	Black - Winged Petrel	V	6
◆ <i>Pterodroma solandri</i>	Providence Petrel	V	17
◆ <i>Puffinus assimilus</i>	Little Shearwater	V	8
◆ <i>Puffinus carneipes</i>	Flesh - Footed Shearwater	V	9
◆ <i>Diomedea cauta</i>	Shy Albatros	V	14
◆ <i>Diomedea exulans</i>	Wandering Albatross	E1	22
◆ <i>Diomedea melanophrys</i>	Black - Browed Albatross	V	18
◆ <i>Phoebastria fusca</i>	Sooty Albatross	V	3
◆ <i>Fregetta grallaria</i>	White - Bellied Storm-Petrel	V	5
◆ <i>Phaethon rubicauda</i>	Red - Tailed Tropic - bird	V	3
◆ <i>Botaurus poiciloptilus</i>	Australasian Bittern	V	12
◆ <i>Ixobrychus flavicollis</i>	Black Bittern	V	8
◆ <i>Erythrorhynchus radiatus</i>	Red Goshawk	E1	2
◆ <i>Lophoictinia isura</i>	Square - Tailed Kite	V	1
◆ <i>Pandion haliaetus</i>	Osprey	V	25
◆ <i>Falco hypoleucos</i>	Grey Falcon	V	3
◆ <i>Calidris alba</i>	Sanderling	V	14
◆ <i>Calidris tenuirostris</i>	Great Knot	V	28
◆ <i>Limicola falcinellus</i>	Broad - Billed Sandpiper	V	14
◆ <i>Limosa limosa</i>	Black - tailed Godwit	V	11
◆ <i>Xenus cinereus</i>	Terek Sandpiper	V	14
◆ <i>Burhinus grallarius</i>	Bush Stone - Curlew	E1	10
◆ <i>Esacus neglectus</i>	Beach Stone - Curlew	E1	1
◆ <i>Haematopus fuliginosus</i>	Sooty Oystercatcher	V	30
◆ <i>Haematopus longirostris</i>	Pied Oystercatcher	V	43
◆ <i>Charadrius leschenaultii</i>	Great Sand Plover	V	12
◆ <i>Charadrius mongolus</i>	Lesser Sand Plover	V	15
◆ <i>Gygis alba</i>	White Tern	V	7



SCIENTIFIC NAME (Latest Taxon)	COMMON NAME (Latest Taxon)	LEGAL STATUS	SIGHTINGS/SPECIES
◆ <i>Procelsterna cerulea</i>	Grey Ternlet	V	5
◆ <i>Sterna albifrons</i>	Little Tern	E1	35
◆ <i>Sterna fuscata</i>	Sooty Tern	V	11
◆ <i>Ptilinopus magnificus</i>	Wompoo Fruit - Dove	V	2
◆ <i>Ptilinopus regina</i>	Rose - Crowned Fruit - Dove	V	1
◆ <i>Ptilinopus superbus</i>	Superb Fruit - Dove	V	38
◆ <i>Cacatua leadbeateri</i>	Major Mitchell's Cockatoo	V	2
◆ <i>Calyptorhynchus lathami</i>	Glossy Black - Cockatoo	V	77
◆ <i>Glossopsitta porphyrocephala</i>	Purple - Crowed Lorikeet	V	1
◆ <i>Lathamus discolor</i>	Swift Parrot	V	20
◆ <i>Neophema pulchella</i>	Turquoise Parrot	V	10
◆ <i>Polytelis swainsonii</i>	Superb Parrot	V	4
◆ <i>Ninox strenua</i>	Powerful Owl	V	99
◆ <i>Tyto novaehollandiae</i>	Masked Owl	V	13
◆ <i>Tyto tenebricosa</i>	Sooty Owl	V	26
◆ <i>Calamanthus fuliginosus</i>	Striated Fieldwren	V	1
◆ <i>Dasyornis brachypterus</i>	Eastern Bristlebird	E1	1
◆ <i>Xanthomyza phrygia</i>	Regent Honeyeater	E1	22
◆ <i>Drymodes brunneopygia</i>	Southern Scrub - Robin	V	1
◆ <i>Petroica rodinogaster</i>	Pink Robin	V	2
◆ <i>Neochmia ruficauda</i>	Star Finch	E4	1
◆ <i>Dasyurus maculatus</i>	Tiger Quoll	V	20
◆ <i>Dasyurus viverrinus</i>	Eastern Quoll	E1	3
◆ <i>Isoodon obesulus</i>	Southern Brown Bandicoot	E1	32
◆ <i>Phascolarctos cinereus</i>	Koala	V	204
◆ <i>Petaurus australis</i>	Yellow - Bellied Glider	V	11
◆ <i>Petaurus norfolcensis</i>	Squirrel Gilder	V	2
◆ <i>Aepyprymnus rufescens</i>	Rufous Bettong	V	1
◆ <i>Saccolaimus flaviventris</i>	Yellow - Bellied Sheathtail - Bat	V	1
◆ <i>Chalinolobus dwyeri</i>	Larga Pied Bat	V	1
◆ <i>Miniopterus australis</i>	Little Bent - Wing Bat	V	2
◆ <i>Miniopterus schreibersii</i>	Common Bent - Wing Bat	V	21
◆ <i>Myotis adversus</i>	Large - Footed Mouse-eared Bat	V	5
◆ <i>Scoteanax rueppellii</i>	Greater Broad - Nosed Bat	V	1
◆ <i>Pseudomys gracilicaudatus</i>	Eastern Chestnut Mouse	V	2
◆ <i>Megaptera novaeangliae</i>	Humpback Whale	V	21
◆ <i>Eubalaena australis</i>	Southern Right Whale	V	16
◆ <i>Physeter Macrocephalus</i>	Sperm Whale	V	2



ENDANGERED FLORA OF THE SYDNEY REGION

SCIENTIFIC NAME (Latest Taxon)	FAMILY NAME (Latest Taxon)	LEGAL STATUS	SIGHTINGS / SPECIES
◆ <i>Allocasuarina portuensis</i>	Casuarinaceae	E1	6
◆ <i>Acacia bynoeana</i>	Fabaceae (Mimosoideae)	V	16
◆ <i>Acacia gordonii</i>	Fabaceae (Mimosoideae)	E1	5
◆ <i>Acacia pubescens</i>	Fabaceae (Mimosoideae)	V	55
◆ <i>Haloragis exalata</i>	Haloragaceae	V	1
◆ <i>Haloragodendron lucaslii</i>	Haloragaceae	V	17
◆ <i>Darwinia biflora</i>	Myrtaceae	V	80
◆ <i>Eucalyptus camfieldii</i>	Myrtaceae	V	48
◆ <i>Eucalyptus pulvenlenta</i>	Myrtaceae	V	1
◆ <i>Kunzea rupestris</i>	Myrtaceae	E1	6
◆ <i>Leptospermum deanei</i>	Myrtaceae	V	12
◆ <i>Micromyrtus blakelii</i>	Myrtaceae	V	9
◆ <i>Syzygium paniculatum</i>	Myrtaceae	V	6
◆ <i>Caladenia tessellata</i>	Orchidaceae	V	15
◆ <i>Cryptostylis hunteriana</i>	Orchidaceae	V	1
◆ <i>Diuris aequalis</i>	Orchidaceae	V	1
◆ <i>Microtis angusii</i>	Orchidaceae	E1	1
◆ <i>Pterostylis saxicola</i>	Orchidaceae	E1	1
◆ <i>Bothriochloa biloba</i>	Poaceae	V	2
◆ <i>Deyeuxia appressa</i>	Poaceae	E1	2
◆ <i>Grevillea caleyi</i>	Proteaceae	E1	25
◆ <i>Persoonia mollis</i> ssp. <i>maxima</i>	Proteaceae	E1	26
◆ <i>Zieria involucrata</i>	Rutaceae	V	1
◆ <i>Thesium australe</i>	Santalaceae	V	1
◆ <i>Tetratheca glandulosa</i>	Tremandraceae	V	88
◆ <i>Tetratheca juncea</i>	Tremandraceae	V	8



ENDANGERED POPULATIONS AND ECOLOGICAL COMMUNITIES OF THE SYDNEY REGION

ANIMALS	FAMILY	LOCATION
Birds		
◆ Eudyptula minor	Spheniscidae	Little Penguin at Manly Point
Mammals		
◆ Petaurus norfolcensis	Petauridae	Squirrel Glider on Barrenjoey Peninsula
◆ Perameles nasuta	Peramelidae	Long-nose Bandicoot, North Head
Communities		
◆ Eastern Suburbs Banksia Scrub	(as described in the final determination of the Scientific Committee to list the ecological community)	
◆ Cooks River Clay Plain Scrub Forest	(as described in the final determination of the Scientific Committee to list the ecological community)	



STUDY AREA DESCRIPTIONS - SUBREGIONAL AND LOCAL GOVERNMENT AREAS DESCRIPTIONS

(See Appendix 6 for detailed maps of the coastal area)

THE NORTHERN BEACHES

◆ Pittwater Council LGA

Pittwater's coastline is approximately 18 km long, extending from Barrenjoey headland in the north to Narrabeen lagoon entrance to the south. The area comprises of eight distinct embayments tied by rocky headlands and contains 10 ocean beaches: Palm, Whale, Avalon, Bilgola, Newport, Bungan, Bongin Bongin, Mona Vale, Warriewood and Turimetta. There are also 12 estuarine beaches in Pittwater: Barrenjoey, Snapperman, Sandy, Paradise, Clareville, South, The Basin, Currawong, Great Mackerel, Resolute, Flint and Steel, and Hungry. There are 10 rock platforms, the most number in any LGA in Sydney, four of which are gazetted IPAs. The dune vegetation on the beaches is generally well established with all beaches having dune restoration areas and community Dunecare groups helping to minimise the impacts to these very popular beach areas. Cliff stabilisation works have also been initiated in parts of the coastal zone, including at South Bilgola headland.

The main coastal feature of the Pittwater Council area is the drowned river valley of the Pittwater estuary. With a surface area of 17.5 km², this waterway is bounded by 77 km of foreshore consisting of sandy beaches, inlets, steep embankments, rocky shores, tidal flats and an island (Scotland Island). The area also contains extensive mangrove and seagrass areas, such as those found in Careel Bay, providing important habitat for many aquatic, marine and terrestrial species. The Barrenjoey Peninsula to the northern end of the LGA is another significant feature of Pittwater's coastal zone. At the northern end of the peninsula, a well defined sand spit or tombolo links South Palm Beach to the headland.

◆ Warringah Council LGA

Warringah Council's coastal zone contains nine beaches extending from Queenscliff headland on the southern border to North Narrabeen, and is approximately 10 km long. Estuarine areas include parts of the Lane Cove River extending approximately 9.5 km. The ocean beaches are: North and South Narrabeen, Collaroy, Fishermans, Long Reef, Dee Why, Curl Curl, and North and South Freshwater. The coastal zone has significant bluffs and several rock platforms. Dee Why rock platform was gazetted as an IPA in 1993. The Long Reef headland is also protected as an Aquatic Reserve established in 1980. Warringah Council manages four coastal lagoons of varying size that periodically discharge to the ocean; these are Narrabeen, Curl Curl, Dee Why and Manly. Manly and Narrabeen lagoons are managed jointly with Manly/Warringah and Warringah/Pittwater Councils respectively. These lagoons and their surrounding areas contain environmentally sensitive areas, including seagrass beds, and Dee Why contains an area of saltmarsh. Dee Why Lagoon has recently been listed for registration on the National Estate. The Council's foredune areas have been protected by revegetation with native vegetation and controlled access points.



◆ Manly Council LGA

Manly is located on the southern end of the Manly-Warringah Peninsula. The coastline is approximately 30 km in length with both Pacific Ocean and North Harbour frontages. The ocean beaches include Queenscliff, North Steyne, Manly and Shelly Beaches. The harbour beaches include Stores, Collins, Little Manly, Manly Cove, Fairlight, Washaway, Forty Baskets and Clontarf Beaches. In 1991 the ocean beachfront and promenade were listed with the Register of the National Heritage. These areas were central in the introduction of daylight swimming, surf lifesaving and board riding into Australian culture. Manly Council maintains 81 park and reserve areas, many of which directly front onto the ocean and harbour beach foreshores. The Manly Scenic Walkway extends from the Spit Bridge to Manly Beach. This recreational facility takes in many of the cultural and natural coastal features of the harbour and surrounding areas providing panoramic views of the harbour areas, including the Sydney Harbour National Park. Manly has several IPAs including Shelly Beach and portions of the land forming Sydney Harbour. The area south of North Harbour has been declared an Aquatic Reserve.

Manly lagoon is situated on the northern boundary of Manly LGA. It has a catchment area of 18 km² fed by three major creeks including Burnt, Bridge and Manly Creeks. This lagoon periodically opens to the ocean. This waterway is constantly under pressure from the impacts of stormwater runoff and sewage overflows.

SYDNEY HARBOUR

◆ Mosman Council LGA

The Mosman LGA is located approximately 7 km north of the Sydney Central Business District. It is primarily a residential and commercial area surrounded by the very irregular coastline of Middle and Sydney Harbours. The coastline extending approximately 16 km contains many headlands and points projecting into Port Jackson, Middle Harbour and Long Bay to the west of Beauty Point. In all there are approximately 13 headlands with some prominence. Between these headlands are many popular swimming and recreation beaches, bays and coves including Chinamans Beach, The Spit, Edwards, Balmoral, Cobblers and Obelisk Beaches, Clifton Gardens and Little Sirius Cove. Other foreshore areas include significant rocky foreshore areas, wooded bushland including many protected areas, and reserves, such as Sydney Harbour National Park. The foreshore areas also include several significant Aboriginal and non - Aboriginal heritage items, such as middens, rock art, defence structures including gun emplacements and fortifications and marine heritage items such as shipwrecks, wooden and stone wharves, navigation aids, baths, sandstone pillars and sea walls.

◆ North Sydney Council LGA

North Sydney LGA has an 18.6 km stretch of foreshore area and is bounded by the waters of Port Jackson in the south and the waters of Middle Harbour to the north east. These areas are of national significance as they make up a part of the amenity of Sydney Harbour, a drowned river valley. The areas are characterised by recreational areas, native bushland, pedestrian areas, waterfront industry and private property. The area contains several heritage items including navigation aids, wooden and stone wharves, shipyards and slipways, sea walls and baths. The remnant bushland of North Sydney totals approximately 47 hectares and is generally restricted to the Sydney Harbour and Middle Harbour foreshores making these foreshore areas an integral component of the harbour foreshore scenery which is predominantly Hawkesbury sandstone vegetation with some pockets of shale soils associated with wet sclerophyll forests (e.g. Berry's Creek, Gore Cove, Primrose Park, Robertson Point, Balls Head Reserve and Berry Island Reserve).



◆ Willoughby Council LGA

Willoughby City LGA is located 7 km north of the Sydney Central Business District. It is bounded in the north by Ku-ring-gai Council, in the south by North Sydney Council, in the west by Lane Cove Council and in the east by Middle Harbour. Willoughby City contains a diverse mix of land uses including retail, commercial, industrial, residential, institutional, and recreational uses. Willoughby has the largest retail centre outside of the Sydney CBD, and is ranked among the fastest growing metropolitan office centres. The City is relatively well served with open space and recreational facilities. The Council foreshore areas are located on the western side of the upper Middle Harbour catchment and Lane Cove River covering approximately 13 km and 2.5 km respectively. These areas contain the largest and most pristine bushland reserves (261 hectares) and open space areas within the LGA. The major foreshore bushland areas cover from Robb Reserve, Castle Cove in the north to Sailors Bay Creek, Castlecrag and Clive Park, Northbridge in the south of Middle Harbour contains key bushland areas and mangrove forest. The area also contains several marina facilities and wharves. The entire intertidal area is covered by IPAs. The key bays in Middle Harbour are Long Bay and Willoughby Bays and in Port Jackson, Balls Head, Berrys, Lavender and Neutral Bays.

◆ Leichhardt Council LGA

Most of the 17 km of foreshore land within Leichhardt LGA has been urbanised and built up from its original foreshore line and level. The foreshores are the most ecologically sensitive and rich areas and are the most popular outdoor recreation locations within the LGA. Seawalls have been erected in most areas to stop erosion and enable the public to utilise all available land. The foreshore areas were the location for many of Sydney's waterfront industries although only a few of these industries remain today. In recent years industrial premises have relocated from the inner city to the outer suburbs and near Botany Bay. Slowly the vacant foreshore areas have become available for residential redevelopment. Council has adopted a policy of developing a continuous public open space network along the foreshore to provide access for invaluable public recreational areas. Remnant bushland exists at Callan Point, Rozelle. There are several heritage items located along the foreshores including wharves, jetties, docks and depots. Aboriginal middens and remnant native vegetation have been identified at Callan Point within the grounds of the Rozelle Hospital. A Coastcare grant was obtained in 1997 to manage and conserve these resources.

◆ Sydney City Council LGA

Natural waterways are a major geographical feature of the Sydney area, with more than 50% of the City's boundaries bordered by the waters of Sydney Harbour, totalling approximately 13 km. Sydney is a key port for leisure, trade and defence vessels. Circular Quay and Darling Harbour provide facilities for sea passengers, the bays around Pyrmont receive container cargo and Garden Island is one of the major naval bases on Australia's eastern seaboard.

The foreshore areas of the Sydney LGA have been urbanised and built up from the original foreshore line and level. They are characterised by the use of seawalls to stop erosion and to maximise the amount of useable land. These areas of the harbour are used by millions of tourists, visitors and commuters each year, providing panoramic views of the harbour and famous landmarks such as the Sydney Harbour Bridge and the Sydney Opera House. Heritage items in the Sydney Harbour area include wharfs, baths and pools. The Botanic Gardens and the Domain are located in the LGA, providing significant parklands and passive recreation areas.

The City of Sydney is one of many LGAs which has streams draining into Sydney Harbour, however, these have been gradually piped. Over time, the waters of the harbour have suffered environmental degradation due to the inflow of pollutants from different sources. Council cleans and maintains the stormwater drains in the City. The City of Sydney has historically installed trapped gully pits on all of its stormwater drainage systems. These trapped gullies are regularly cleaned and significant quantities of sediment are removed before stormwater reaches the harbour.





◆ South Sydney Council LGA

The water features within the South Sydney Council area include approximately 1 km of harbour foreshore area from Elizabeth Bay to Rushcutters Bay and the water catchment areas of the Alexandra Canal (1.5 km in length) and its tributary, Shea's Creek. These water features provide, and have the potential to provide, attractive passive and active recreation areas.

The Rushcutters Bay catchment area drains into Sydney Harbour. Beare Park and Rushcutters Bay Park are the only harbour recreational areas within Council's area. These areas provide excellent locations for recreation with panoramic views of the harbour and access to a variety of marinas and wharves as well as other recreational facilities.

The Alexandra Canal, with the planned change in surrounding land use, is an

example of a water feature which has the potential to provide a unique recreational opportunity and to form an open space corridor with the Cooks River. An important issue surrounding the water features, and the remaining areas of the Council, is the existing and future levels of urbanisation and the subsequent effect this will have on water quality. South Sydney City Council covers an area of 17 km² and the existing levels of urbanisation are quite high.

◆ Woollahra Council LGA

Woollahra's foreshore areas extend from the eastern side of Rushcutters Bay in the harbour around to South Head. The length of foreshore in Port Jackson is approximately 14 km and the ocean cliff face frontage is approximately 2.9 km. Key shallow bays include Double, Rose, Vaucluse and Parsley Bays. Much of the area has been extensively urbanised. There are many small areas of natural foreshore in private ownership while other foreshore areas and bushland are within public ownership under Council or federal and State Government responsibility.

The close proximity to the harbour and its panoramic views has led to a high demand for land which consequently has resulted in the area having some of the most expensive residential and commercial property in the Sydney region. Heritage items include navigation aids, ferry piers, wharves, jetties, baths and pools, and the Shark Beach promenade.

The eastern side of the Woollahra LGA is characterised by rugged sandstone cliffs dropping dramatically to rock shelves or the ocean itself. There is very little or no access to the foreshore areas in these locations though they provide great aesthetic value to the LGA and Sydney Harbour itself.

Remnant vegetation covers approximately 55 hectares (45%) of total area and can be found at Nielsen Park, Hermitage Foreshore Reserve, Cooper Park, Parsley Bay, Vaucluse Bay, The Gap Bluff, Gap Park, South Head, Royal Sydney Golf Course and numerous foreshore areas and reserves such as Laings Point Reserve. The Vaucluse sewage outfall discharges raw sewage at the ocean shoreline on the southern boundary with Waverley Council.





THE EASTERN BEACHES

◆ Waverley Council LGA

Waverley's coastline stretches approximately 7.5 km. The area contains three popular beaches, Bondi, Tamarama and Bronte, and is dominated by cliffs and headlands comprised largely of Hawkesbury sandstone imbedded with layers of softer shale. The constant force of erosion has led to the formation of four significant rock platforms. Two of these sites have been declared IPAs. One is from Bondi Beach, through Mackenzies Bay to Tamarama Beach; the other extends from Bronte Beach to the Waverley Cemetery. A coastal walkway from Bondi Beach to the southern edge of the LGA takes full advantage of the aesthetics of the coastal area and provides the public with many recreational opportunities. There are four remnant vegetation areas existing in the coastal zone: Diamond Bay, Hugh Bamford Reserve, the southern side of Tamarama Marine Drive and the cliff area at the southern end of Bronte Beach. The LGA also contains three ocean pools.

The sewage outfalls discharge to the ocean: two release raw sewage at Diamond Bay/Vaucluse and the Bondi sewage treatment plant releases primary treated effluent 2 km offshore via a deep water ocean outfall.

◆ Randwick Council LGA

Randwick Council LGA has a total foreshore length of 25 km extending from Clovelly at its northern border with Waverley Council, to the northern beaches of Botany Bay where it borders with Botany Bay City Council. The coastline comprises 10 beaches including: Clovelly, Gordons Bay, Coogee, Maroubra, Long Bay, Little Bay, Little Longwong, Longwong Bay, Frenchmans and Yarra Beach. There are also a number of rocky headlands (including the significant Malabar Headland), the Botany Bay National Park, and several bays and rock platforms. Many of the rock platforms are protected as IPAs; these cover Clovelly Beach and Coogee Beach, around Long Bay (Malabar) and Cape Banks on the northern headland of Botany Bay.

La Perouse has significant indigenous and non-indigenous heritage value: it is associated with Captain Cook's voyage of discovery in 1770; it is where the French Fleet of Laperouse landed; and it is the location where the First Fleet established the first penal colony in 1788. Malabar headland on the east of the City of Randwick is an area of outstanding beauty and is host to some of the threatened "Eastern Suburbs Banksia Scrub" vegetation community.

Approximately 15% of Randwick's coastline is in its near original state prior to European settlement. Parkland reserves comprise approximately 65% of the coastline, including Botany Bay National Park, while residential and road developments make up approximately 10%. The remaining 25% is comprised of restricted access areas such as golf courses, the port of Botany Bay and Commonwealth land. Approximately 2% of the coastline has been reclaimed in the Bay area for port and shipping facilities at Port Botany.

The South Western Ocean Outfall Sewer (SWOOS) system discharges primary treated effluent 3 km offshore via a deep ocean outfall at Malabar.



BOTANY BAY

◆ Botany Bay Council LGA

The City of Botany Bay is located on the northern side of Botany Bay and includes several hundred hectares of Botany Bay, with approximately 4 km of foreshores. The Botany Bay City Council area is located within the Botany Basin which is a natural topographical basin surrounding Botany Bay. The northern portion of the basin is drained by the Cooks River. Alexandra Canal and the Botany Wetland ponds flow southwards through Botany before discharging into the bay. The foreshore area has been manipulated substantially during the last 20 years due to reclamation for the construction of Port Botany and the parallel runway at Sydney Airport.

Botany Bay LGA is a heavily urbanised and built up area which has been an important industrial base for Sydney for over 100 years. Botany Bay is a significant economic area with Australia's busiest airport, a major port and some of Australia's major petroleum and chemical plants and storage areas. Botany Bay is also a significant commercial fishing area, particularly for prawns, oysters and various fish species. It is an important recreational area, containing internationally significant wetlands and nature reserves.

◆ Rockdale Council LGA

Rockdale Council is located in the southern Sydney region on the shores of historic Botany Bay between the Georges and Cooks Rivers, 10 km from the Sydney Central Business District. Rockdale's coastal foreshores, and tidal and littoral zones, represent approximately half of the boundaries of the LGA. These areas form an important recreational and tourism resource, and are extensively used for much of the year. They also provide a significant recreational and commercial fishing area which is widely utilised by a diversity of boating activities. The coast contains large areas of open space including the internationally significant Rockdale Wetland Corridor which is subject to international migratory bird treaties. Council has and is developing several plans of management and rehabilitation programs to ensure the long term, sustainable use of these resources.

Along the approximate 7 km of foreshore in Botany Bay, the Council and Sydney Ports Corporation are continuing to undertake works to improve and protect the beach amenity. There are eight groynes along Lady Robinson Beach to protect the sandy beaches and public facilities from erosive wave action amplified by the construction of the Third Runway at Sydney Airport. Works have also included extensive beach nourishment.

The northern border of Rockdale is rimmed by 4.5 km of waterways in the Cooks River and Wollie Creek. The key recreational beaches on Botany Bay are Brighton Le Sands and Lady Robinsons Beaches scattered along which are six historical baths.





PORT HACKING

◆ Sutherland Council LGA

Sutherland's coastal zone extends from within Botany Bay along the southern banks of the Georges River, around the Kurnell Peninsula to the southern ends of the Royal National Park at Garie Beach, a total length of approximately 96 km. The area also includes the drowned river valley estuary of Port Hacking. The beaches of the area serve as an important recreational resource for residents of the shire and greater Sydney. Estuarine beaches in Botany Bay include Towra and Silver Beaches, and in Port Hacking they include Deeban Spit, Hordens, Gunyah and Jibbon Beaches. There are 12 groynes along Silver Beach. The ocean beaches include Cronulla, Wanda, Elouera, North and South Cronulla, Marley, Little Marley, Wattamolla, Little Garie, Garie, Burning Palms, Werrong and Bulgo. The coastal zone varies from sand dunes to high rise apartments and cliff areas.

There are many areas of significant vegetation within the LGA, including the Royal, Heathcote, Georges River and Botany Bay National Parks and the Towra Point Nature Reserve. The Kurnell Peninsula contains the latter, which covers approximately 50% of the Shire. The Towra Point Nature Reserve is inhabited by numerous migratory birds, protected under the international agreements CAMBA and JAMBA. Sutherland has two Aquatic Reserves under the management of NSW Fisheries: Towra Point and Shiprock reserves. There are also three IPAs in the LGA located at Inscription Point, Kurnell; Boat Harbour, Kurnell; and Cabbage Tree Point, Bundeena.

Sutherland LGA has approximately 34 km of water frontage along the Georges and Woronora Rivers not including the canal estates at Sylvania Waters.

The Cronulla sewage treatment plant (Cronulla Ocean Outfall Sewer - COOS) currently discharges primary treated effluent at the cliff line at Potter Point. The sewage treatment plant is to be upgraded to a tertiary plant in the near future.

BROKEN BAY/HAWKESBURY

◆ Hornsby Council LGA

Hornsby Shire is located approximately 24 km north west of the Sydney Central Business District. The Shire has a area of approximately 510 km² and is bounded in a triangular shape by Epping in the south, Wiseman's Ferry in the north and Brooklyn in the east. The Hornsby Shire is unique with its contrasting environments reflecting urban, rural, bushland and riverine settings. There is also a diverse range of retail, commercial, industrial, residential and recreational uses within the shire. There are three islands in the shire Milson, Danger and Long Islands.

There are five main drainage catchments in the LGA: the Hawkesbury-Nepean; Berowra Creek; Lane Cove River; Marramorra Creek; and Cowan Creek. Associated with the drainage catchments are marinas, ferries, boat sheds, boating, fishing and oyster farming industry. Heritage items are located along the foreshores with Aboriginal middens and remnant vegetation throughout the Shire. It is an important recreational area and contains wetlands and National Parks.



FIVE

APPENDIX 5

RELEVANT STATE AND LOCAL GOVERNMENT PLANNING INSTRUMENTS

State Government Regional Environmental Planning Instruments for the Sydney Region

- ◆ Regional Environmental Plan 14 Eastern Beaches
- ◆ Regional Environmental Plan 16 Walsh Bay
- ◆ Regional Environmental Plan 17 Kurnell Peninsula
- ◆ Regional Environmental Plan 20 Hawkesbury-Nepean *
- ◆ Regional Environmental Plan 21 Warringah Urban Release Areas
- ◆ Regional Environmental Plan 22 Parramatta River
- ◆ Regional Environmental Plan 23 Sydney and Middle Harbour
- ◆ Regional Environmental Plan 24 Homebush Bay
- ◆ Regional Environmental Plan 26 City West
- ◆ Draft Georges River Regional Environmental Plan (in preparation)
- ◆ Botany Bay Regional Policy Guidelines

* REP 20 applies to both Sydney and the Central Coast

State Environmental Planning Policies Affecting the Sydney Region

- ◆ State Environmental Planning Policy No. 1 Development Standards
- ◆ State Environmental Planning Policy No. 3 Castlereagh Liquid Waste Disposal Depot
- ◆ State Environmental Planning Policy No. 4 Development Without Consent
- ◆ State Environmental Planning Policy No. 5 Housing for Aged or Disabled Persons
- ◆ State Environmental Planning Policy No. 6 Number of Storeys in a Building
- ◆ State Environmental Planning Policy No. 8 Surplus Public Land
- ◆ State Environmental Planning Policy No. 9 Group Homes
- ◆ State Environmental Planning Policy No. 10 Retention of Low-Cost Rental Accommodation
- ◆ State Environmental Planning Policy No. 11 Traffic Generating Developments
- ◆ State Environmental Planning Policy No. 12 Public Housing (Dwelling Houses)
- ◆ State Environmental Planning Policy No. 16 Tertiary Institutions
- ◆ State Environmental Planning Policy No. 19 Bushland in Urban Areas
- ◆ State Environmental Planning Policy No. 20 Minimum Standards for Residential Flat Development
- ◆ State Environmental Planning Policy No. 21 Caravan Parks
- ◆ State Environmental Planning Policy No. 22 Shops and Commercial Premises
- ◆ State Environmental Planning Policy No. 25 Residential Allotment Sizes
- ◆ State Environmental Planning Policy No. 26 Littoral Rainforests
- ◆ State Environmental Planning Policy No. 27 Prison Sites
- ◆ State Environmental Planning Policy No. 31 Sydney (Kingsford Smith) Airport
- ◆ State Environmental Planning Policy No. 32 Urban Consolidation-Redevelopment of Urban Land
- ◆ State Environmental Planning Policy No. 33 Hazardous and Offensive Development
- ◆ State Environmental Planning Policy No. 34 Major Employment Generating Industrial Development
- ◆ State Environmental Planning Policy No. 35 Maintenance Dredging of Tidal Waterways
- ◆ State Environmental Planning Policy No. 38 Olympic Games Projects
- ◆ State Environmental Planning Policy No. 39 Spit Island Bird Habitat
- ◆ State Environmental Planning Policy No. 41 Casino/Entertainment Complex
- ◆ State Environmental Planning Policy No. 43 New Southern Railway
- ◆ State Environmental Planning Policy No. 44 Koala Habitat Protection
- ◆ State Environmental Planning Policy No. 46 Protection and Management of Native Vegetation
- ◆ State Environmental Planning Policy No. 47 Moore Park Showground
- ◆ State Environmental Planning Policy No. 48 Major Putrescible Landfill Sites
- ◆ State Environmental Planning Policy No. 50 Canal Estate Development
- ◆ State Environmental Planning Policy No. 53 Metropolitan Residential Development
- ◆ Draft State Environmental Planning Policy No. 55 Remediation of Land



LOCAL GOVERNMENT PLANNING INSTRUMENTS

BOTANY BAY COUNCIL

Local Environment Plans

- ◆ Botany Local Environmental Plan, 1995
- ◆ Botany Local Environmental Plan (Amendment No. 7) 132 O’Riordan Street
- ◆ Botany Local Environmental Plan (Amendment No. 12) 4-10 Fabry Street, Botany

Development Control Plans

- ◆ Development Control Plan No. 1 Code for Industrial Development, 1993
- ◆ Development Control Plan Off Street Parking, 1993
- ◆ Development Control Plan Dual Occupancy Residential, 1992
- ◆ Development Control Plan Amusement Centres, 1994
- ◆ Development Control Plan 6-22 High Street, Mascot, 1994
- ◆ Development Control Plan 5-15 William Street, Botany, 1992
- ◆ Development Control Plan 125-127 Banksia Street and 16-18 Morgan Street, Botany, 1993
- ◆ Development Control Plan 104-110 High Street, Mascot, 1993
- ◆ Development Control Plan Extended Public House Trading Hours, 1997
- ◆ Development Control Plan Container Terminals and Similar Facilities Handling Containers, 1997

Draft Development Control Plans

- ◆ Draft Development Control Plan Medium Density Housing
- ◆ Draft Development Control Plan Advertising Signs and Structures
- ◆ Draft Development Control Plan Access
- ◆ Draft Development Control Plan Energy Efficiency
- ◆ Draft Development Control Plan Multi Unit Housing
- ◆ Draft Development Control Plan “Waste Not”

HORNSBY COUNCIL

Local Environment Plans

- ◆ Hornsby Shire Local Environmental Plan, 1994

Development Control Plans

- ◆ Development Control Plan Low Density Multi-Unit Housing - Residential A
- ◆ Development Control Plan Medium Density Multi-Unit Housing - Residential B
- ◆ Development Control Plan Medium Density Multi-Unit Housing - Residential C
- ◆ Development Control Plan High Density Multi-Unit Housing - Residential D
- ◆ Development Control Plan Residential Subdivisions - Residential A
- ◆ Development Control Plan Car Parking
- ◆ Development Control Plan Heritage
- ◆ Development Control Plan Community Uses
- ◆ Development Control Plan Business Lands - A,B,C
- ◆ Development Control Plan Industrial Lands - A,B



- ◆ Development Control Plan Outdoor Advertising
- ◆ Development Control Plan Residential AM (Medical Centres)
- ◆ Development Control Plan Single Dwelling
- ◆ Development Control Plan Access and Mobility
- ◆ Development Control Plan Sustainable Water (draft)
- ◆ Development Control Plan Cherrybrook Release Area
- ◆ Development Control Plan Rural Lands-Rural A, B
- ◆ Development Control Plan Dural Village Centre
- ◆ Development Control Plan Pennant Hills Commercial Centre
- ◆ Development Control Plan Berowra Cowan
- ◆ Development Control Plan River Settlements
- ◆ Development Control Plan Dangar Island
- ◆ Development Control Plan Dural Service Centre-(Business E)
- ◆ Development Control Plan Brooklyn
- ◆ Development Control Plan Hornsby Town Centre (revised version being prepared)
- ◆ Development Control Plan Extractive Industries - Maroota (draft exhibited)
- ◆ Development Control Plan Rural Lands
- ◆ Development Control Plan Byles Creek, Beecroft

LEICHHARDT COUNCIL

Local Environment Plans

- ◆ Local Environmental Plan No. 20
- ◆ Draft Leichhardt Town Plan, 1998

Development Control Plans

- ◆ Development Control Plan No. 1 Residential Development Guidelines
- ◆ Development Control Plan No. 2 Non-Residential Development in Residential Zones
- ◆ Development Control Plan No. 3 Open Space
- ◆ Development Control Plan No. 4 Development on Land Exceeding 1000 m²
- ◆ Development Control Plan No. 5 Posted Verandahs
- ◆ Development Control Plan No. 6 Car Parking Policy
- ◆ Development Control Plan No. 7 Amendments to Parking Code
- ◆ Development Control Plan No. 8 Mort Bay Development (Incorporated in DCP 1)
- ◆ Development Control Plan No. 9 Leichhardt Town Centre (to be reviewed in DCP 19)
- ◆ Development Control Plan No. 10 Protection of Sunlight to Dwellings adjacent to Business
- ◆ Development Control Plan No. D12 Outdoor Advertising Signs
- ◆ Development Control Plan No. 16 Cyclops and North Street, Leichhardt
- ◆ Development Control Plan No. 17 Interim Energy Efficient Housing
- ◆ Development Control Plan No. 18 Grace Brothers, Broadway
- ◆ Development Control Plan No. 20 Conservation of Small Detached Houses
- ◆ Development Control Plan No. 21 Wharf Road (Birchgrove)
- ◆ Development Control Plan No. 22 461-465 Glebe Point Road - Glebe
- ◆ Development Control Plan No. 23 Orphan School Creek (Forest Lodge)
- ◆ Development Control Plan No. 24 Elliott's Cove (Rozelle)
- ◆ Development Control Plan No. 25 Colgate Palmolive (Balmain)
- ◆ Development Control Plan No. D27 Balmain Power Station (Rozelle)



Draft Development Control Plans

- ◆ Draft Development Control Plan No. 11 Advertising Requirements for BAs and DAs
- ◆ Draft Development Control Plan No. 13 Lilyfield Rd and Hornsey Street
- ◆ Draft Development Control Plan No. 14 29-31 Cook Street, Glebe
- ◆ Draft Development Control Plan No. 15 165-169 Allen Street, Leichhardt
- ◆ Draft Development Control Plan No. D19 Leichhardt Town Centre (deferred to working party)
- ◆ Draft Development Control Plan No. D28 Unilever (White Bay)
- ◆ Draft Development Control Plan No. D29 Fletchers (Glebe)
- ◆ Draft Development Control Plan No. D30 The Abbey (156-160 Bridge Road, Glebe)
- ◆ Draft Development Control Plan No. D31 Ampol (White Bay)

MANLY COUNCIL

Local Environmental Plans

- ◆ Manly Local Environment Plan 1988

Development Control Plans

- ◆ Development Control Plan Residential Zoning Amendments
- ◆ Development Control Plan Business Zoning
- ◆ Development Control Plan Industrial Zoning
- ◆ Development Control Plan Advertising Signs
- ◆ Development Control Plan Section 94 Contributions

MOSMAN COUNCIL

Local Environmental Plans

- ◆ Mosman Local Environment Plan No. 1 Mosman Town Plan

Development Control Plans

- ◆ Development Control Plan No. 1 Residential Development
- ◆ Development Control Plan for Consolidated Sydney Water, Mosman Council and Telstra-Brady Street Sites
- ◆ Development Control Plan Harbour Street Sites

NORTH SYDNEY COUNCIL

Local Environmental Plans

- ◆ North Sydney Local Environmental Plan, 1989 (Amendments to 1995)

Development Control Plans

- ◆ Development Control Plan No. 1 Residential, Industrial, Special Places, Heritage, Car Parking, Public Facilities, Section 94 Contributions



PITTWATER COUNCIL

Local Environment Plans

- ◆ Pittwater Local Environmental Plan, 1993

Development Control Plans

- ◆ Development Control Plan No. 1 Bassett and Darley Street, Mona Vale
- ◆ Development Control Plan No. 2 Car Parking
- ◆ Development Control Plan No. 3 Crystal Bay
- ◆ Development Control Plan No. 4 Development of Seawalls-Basin Beach
- ◆ Development Control Plan No. 5 Light Industrial Land
- ◆ Development Control Plan No. 6 Bayview Heights Escarpment Area
- ◆ Development Control Plan No. 8 Height of Buildings
- ◆ Development Control Plan No. 9 Warriewood Valley Stage One Release
- ◆ Development Control Plan No. 10 Subdivisions and Code for Subdivision
- ◆ Development Control Plan No. 11 Landfill/EarthWorks
- ◆ Development Control Plan No. 12 Residential Development in the Blue Hatched Area
- ◆ Development Control Plan No. 13 Avalon Beach Commercial Area
- ◆ Development Control Plan No. 14 Pittwater Waterways
- ◆ Development Control Plan No. 15 Heritage Conservation
- ◆ Development Control Plan No. 16 Hamilton Estate
- ◆ Development Control Plan No. 17 Newport Commercial Centre
- ◆ Development Control Plan No. 18 Outdoor Advertising
- ◆ Development Control Plan No. R1 Residential Flat Buildings and Group Buildings
- ◆ Development Control Plan No. R2 Dual Occupancy
- ◆ Development Control Plan No. R4 Mixed Development
- ◆ Development Control Plan No. E3 Driveways and Internal Roadways

RANDWICK COUNCIL

Local Environmental Plans

- ◆ Local Environmental Plans Nos. 2 and 4 to 119

Development Control Plans

- ◆ Development Control Plan No. 1 4-8 Edgecumbe Avenue
- ◆ Development Control Plan No. 2 Car Parking Controls
- ◆ Development Control Plan No. 3 Studio Dwellings
- ◆ Development Control Plan No. 4 Dwelling Houses
- ◆ Development Control Plan No. 5 Wassell Street
- ◆ Development Control Plan No. 6 Kemmis Street
- ◆ Development Control Plan No. 7 114-116 Brook Street, Coogee
- ◆ Development Control Plan No. 8 Military Road and Bunnerong Road, Matraville
- ◆ Development Control Plan No. 9 238-246 Arden Street, Coogee (Oceanic Hotel Site)
- ◆ Development Control Plan No. 10 Belmore Road, Avoca Street and Short Street, Randwick
- ◆ Development Control Plan No. 11 Building Line (3-21 Wolseley Road)
- ◆ Development Control Plan No. 12 Coogee Bay Road, Dudley Street and Carrington Road, Coogee



- ◆ Development Control Plan No. 13 Bunnerong Power Station
- ◆ Development Control Plan No. 14 Town Houses and Villa Houses (SEPP 98)
- ◆ Development Control Plan No. 15 Maroubra Junction Community Centre
- ◆ Development Control Plan No. 18 Corner of King and Dangar Streets, Randwick (Old Bus Depot Site)
- ◆ Development Control Plan No. 19 Matraville Town Centre
- ◆ Development Control Plan No. 20 Restaurants on Public Road Footpaths
Airspace Above Roads and Public Land
- ◆ Development Control Plan No. 21 Amusement Centres
- ◆ Development Control Plan No. 22 "The Spot" and Surrounds
- ◆ Development Control Plan No. 23 2D Frenchmans Road, Randwick
- ◆ Draft Development Control Plan No. 16 Kingsford Community Centre

General Development Control Plans

- ◆ Section 101 Industrial Land
- ◆ Section 101 Industrial Land and Port Botany
- ◆ Section 101 Netherleigh Hospital Site
- ◆ 101 Directions 42-46 St Marks Road, Randwick
- ◆ Management Plan No. 1 Glebe Gully

ROCKDALE COUNCIL

Local Environmental Plans

- ◆ Rockdale Planning Scheme Ordinance, 1973 (currently being revised)

Development Control Plans / Codes

- ◆ Development Control Plan No. 15 Industrial Development
- ◆ Development Control Plan No. 16 Medium Density Housing
- ◆ Development Control Plan No. 18 Brighton Town Centre
- ◆ Development Control Plan No. 20 Residential Flat Buildings
- ◆ Development Control Plan No. 21 Dual Occupancy
- ◆ Development Control Plan No. 23 Single Unit Dwelling Code (Draft)
- ◆ Development Control Plan No. 25 Heritage (Draft)
- ◆ Development Control Plan No. 28 Requirements for Access
- ◆ Development Control Plan No. 29 Outdoor Advertising
- ◆ Development Control Plan No. 31 Requirements for Child Care Centres
- ◆ Development Control Plan No. 34 Medium Density Housing (Draft)
- ◆ Development Control Plan No. 35 Residential Flat Buildings (Draft)
- ◆ Development Control Plan No. 39 Dual Occupancy and Granny Flat Development (Draft)
- ◆ Development Control Plan No. 40 Housing of Aged and Disabled Persons Code (Draft)
- ◆ Development Control Plan No. 42 Boarding Houses, Hostels and People with Disability (Draft)
- ◆ Development Control Plan No. 45 North Arncliffe Development Area (Draft)
- ◆ Development Control Plan No. 46 Amusement Centres

Codes

- ◆ Residential Subdivision
- ◆ Parking and Loading Code



SOUTH SYDNEY COUNCIL

Local Environmental Plans

- ◆ Draft South Sydney Local Environment Plan, 1997

Development Control Plans

- ◆ Development Control Plan No. 1 Design Controls (Whole Area)
- ◆ Development Control Plan No. 2 Moore College
- ◆ Development Control Plan No. 3 Newtown Railway
- ◆ Development Control Plan No. 4 Waterloo
- ◆ Development Control Plan No. 5 Elizabeth Bay Site (Draft)
- ◆ Development Control Plan No. 6 St John's Church
- ◆ Development Control Plan No. 7 Sign Code
- ◆ Development Control Plan No. 8 RPAH Campus
- ◆ Development Control Plan No. 9 LEP 71 (Draft)
- ◆ Development Control Plan No. 10 Disabled Access
- ◆ Development Control Plan No. 11 Transport Guidelines (Draft)
- ◆ Development Control Plan No. 12 Energy Efficiency (Draft)

SUTHERLAND COUNCIL

Local Environmental Plans

- ◆ Sutherland Local Environmental Plan, 1993

Development Control Plans

- ◆ Development Control Plan Amusement Centres, Edition (Ed) 4
- ◆ Development Control Plan Brothels, Ed 1
- ◆ Development Control Plan Bus Shelters and Seats, Ed 2
- ◆ Development Control Plan Child Care Centres, Ed 2
- ◆ Development Control Plan Identities, Ed 2
- ◆ Development Control Plan Carparking, Ed 2
- ◆ Development Control Plan Advertising Structures and Signs, Ed 2
- ◆ Development Control Plan Bushfire, Ed 2
- ◆ Development Control Plan Caravan Park, Ed 2
- ◆ Development Control Plan Industrial Development, Ed 4
- ◆ Development Control Plan Menai Town Centre, Ed 2-3
- ◆ Development Control Plan Menai Park, Ed
- ◆ Development Control Plan Housing in Residential B Area-Ed 3
- ◆ Development Control Plan Residential Flat, Ed 6
- ◆ Development Control Plan Medium Density Housing in 2(b) Zones, Ed 5
- ◆ Development Control Plan Medium Density Housing in 2(a1) Zones, Ed 3
- ◆ Development Control Plan Foreshore Development, Ed 6
- ◆ Development Control Plan Dual Occupancy Housing, Ed 3
- ◆ Development Control Plan Cluster Housing, Ed 3
- ◆ Development Control Plan Housing for Aged and Disabled Persons, Ed 5
- ◆ Development Control Plan Keeping of Horses, Ed 2
- ◆ Development Control Plan Private Tennis Courts, Ed 2



- ◆ Development Control Plan Bed and Breakfast, Ed 1
- ◆ Development Control Plan Waterfront Properties
- ◆ Development Control Plan Engadine Centre
- ◆ Development Control Plan Caringbah Centre
- ◆ Development Control Plan Sutherland Centre
- ◆ Development Control Plan Cronulla Centre

SYDNEY COUNCIL

Local Environmental Plans

- ◆ Local Environmental Plan 1996 Central Sydney
- ◆ Local Environmental Plan 1992 Central Sydney-Conservation of Heritage Items (under review)

Development Control Plans

- ◆ Central Sydney Development Control Plan The City Plan (1996)
- ◆ Urban Development Plan Ultimo/Pyrmont

WARRINGAH COUNCIL

Local Environmental Plans

- ◆ Local Environmental Plan, 1985

Development Control Plans

- ◆ Development Control Plan No. 2 Car Parking
- ◆ Development Control Plan No. 5 Campbell Ave and Fisher Road
- ◆ Development Control Plan No. 9 Residential Flat Buildings and Group Buildings
- ◆ Development Control Plan No. 10 The Strand, Dee Why
- ◆ Development Control Plan No. 11 Heights of Buildings
- ◆ Development Control Plan No. 12 Warriewood Valley Stage One Release
- ◆ Development Control Plan No. 13 Special Business
- ◆ Development Control Plan No. 14 Cottage Point
- ◆ Development Control Plan No. 15 Subdivisions
- ◆ Development Control Plan No. 16 Landfill
- ◆ Development Control Plan No. 17 Expansion of Forestville Shopping Centre



WAVERLEY COUNCIL

Local Environmental Plans

- ◆ Local Environmental Plan, 1985
- ◆ Local Environmental Plans 1991 (Joint Waverley and Woollahra Councils), Bondi Junction Commercial Centre

Development Control Plans

- ◆ Development Control Plan No. 1 Town House Code
- ◆ Development Control Plan No. 2 Residential Flat Building Code
- ◆ Development Control Plan No. 4 Design Guidelines for Extensions to Terraces and Semi-Detached Dwellings
- ◆ Development Control Plan No. 5 Child Care Centres
- ◆ Development Control Plan No. 6 Charing Cross Conservation Area
- ◆ Development Control Plan No. 7 Residential Development Guidelines for 6-38 Blenheim Street and 167-171 Bronte Road
- ◆ Development Control Plan No. 8 Advertising Signs and Structures
- ◆ Development Control Plan No. 9 Community Crime Prevention
- ◆ Development Control Plan No. 10 Residential Development Guidelines for 25-29 Hollywood Avenue
- ◆ Development Control Plan No. 11 Residential Development Guidelines for 6 Paul St.
- ◆ Development Control Plan No. 12 Boarding House, Backpacker Accommodation and Bed and Breakfast Establishments
- ◆ Development Control Plan No. 14 Bicycle and Car Parking
- ◆ Development Control Plan No. 15 Footpath Restaurants
- ◆ Development Control Plan No. 17 Development Guidelines for 91 Roscoe Street
- ◆ Development Control Plan No. 18 Heritage
- ◆ Development Control Plan No. 19 Site Waste Minimisation and Management

Draft Development Control Plans

- ◆ Draft Development Control Plan No. 3 Draft Guidelines Detached Dwellings
- ◆ Draft Development Control Plan No. 13 Energy Efficiency (Draft)
- ◆ Draft Development Control Plan No. 16 Bronte Road and Ebley Street
- ◆ Draft Development Control Plan No. 20 Dual Occupancy
- ◆ Draft Development Control Plan No. 21 Development Guidelines for 197 Birrell Street
- ◆ Draft Development Control Plan No. 22 Brothels
- ◆ Draft Development Control Plan No. 23 Dover Heights Bowling Club

General Development Control Plans

- ◆ Section 94 Contributions Plan
- ◆ Contributions Plan 1996
- ◆ Waverley and Woollahra Councils Bondi Junction Commercial Centre Urban Design Plan
- ◆ Draft Section 94 Plan for Bondi Junction
- ◆ Draft Multi Unit Housing
- ◆ Draft Bondi Beach Urban Design



WILLOUGHBY COUNCIL

Local Environmental Plan

- ◆ Local Environmental Plan, 1995

Development Control Plans

- ◆ Development Control Plan No. 1 (Repealed) Residential Flat Code
- ◆ Development Control Plan No. 2 Off-Street Car Parking, Loading Facilities and Vehicular Access Code
- ◆ Development Control Plan No. 3 Castlecrag
- ◆ Development Control Plan No. 4 Chatswood Fringe Area
- ◆ Development Control Plan No. 5 Professional Consulting Rooms in Residential Areas
- ◆ Development Control Plan No. 6 Naremburn Lot Consolidation
- ◆ Development Control Plan No. 7 (Repealed) St Leonards Railway Land
- ◆ Development Control Plan No. 8 West Artarmon-Naremburn-St Leonards
- ◆ Development Control Plan No. 9 Castle Cove
- ◆ Development Control Plan No. 10 (Repealed) Medium Density Housing
- ◆ Development Control Plan No. 11 Gore Hill Interchange
- ◆ Development Control Plan No. 12 St Leonards Surplus Hospital Land
- ◆ Development Control Plan No. 13 Amusement Centres in the Mandarin Centre
- ◆ Development Control Plan No. 14 Access and Mobility
- ◆ Development Control Plan No. 15 Multi-Unit Residential 2(b), 2(c) and 2(d) Zones
- ◆ Development Control Plan No. 17 St Leonards Station Site
- ◆ Development Control Plan No. 18 Chatswood Connection Site Bounded by Railway St, O'Brian St, Cambridge Lane and Help St
- ◆ Development Control Plan No. 19 Heritage and Conservation
- ◆ Development Control Plan No. 20 Development Control Plan for Advertisements
- ◆ Development Control Plan No. 21 Regulations of Brothels
- ◆ Development Control Plan No. 22 Residential Development Business Zones 3(a), 3(b), 3(c3), 3(d), 3(e), 3(e2)
- ◆ Development Control Plan Former naremburn Public School and Professional Services Centre, Willoughby Rd and Dalleys Rd, Naremburn

WOOLLAHRA COUNCIL

Local Environmental Plans

- ◆ Local Environmental Plan, 1995
- ◆ Local Environmental Plan, 1991 (Joint Waverley / Woollahra Councils) Bondi Junction Commercial Centre

Development Control Plans

- ◆ Development Control Plan Residential
- ◆ Development Control Plan Bondi Junction Commercial Centre Urban Design
- ◆ Development Control Plan Double Bay Commercial Centre
- ◆ Development Control Plan Edgecliff Commercial Centre
- ◆ Development Control Plan Access to and Within Buildings
- ◆ Development Control Plan Off-Street Car Parking and Serving Facilities
- ◆ Development Control Plan Schools and College Development



NATURAL FEATURES MAPS

- ◆ **6a** Northern Beaches
- ◆ **6b** Sydney Harbour
- ◆ **6c** Eastern Beaches
- ◆ **6d** Botany Bay
- ◆ **6e** Port Hacking

The natural features maps prepared by the DUAP for the strategy provide details of:

- ◆ Urban Areas
- ◆ Urban Development Program (U.D.P) Areas
- ◆ National Parks and Reserves
- ◆ Significant Open Space Areas
- ◆ Other areas (rural, commercial, industrial)
- ◆ Aquatic Reserves
- ◆ Recreational Fishing restrictions/closures
- ◆ Intertidal Protected Areas
- ◆ Coastal Walkways
- ◆ Local Government Area boundaries
- ◆ Major roads or highways
- ◆ Railway lines.

CATCHMENT MANAGEMENT COMMITTEES AND TRUSTS

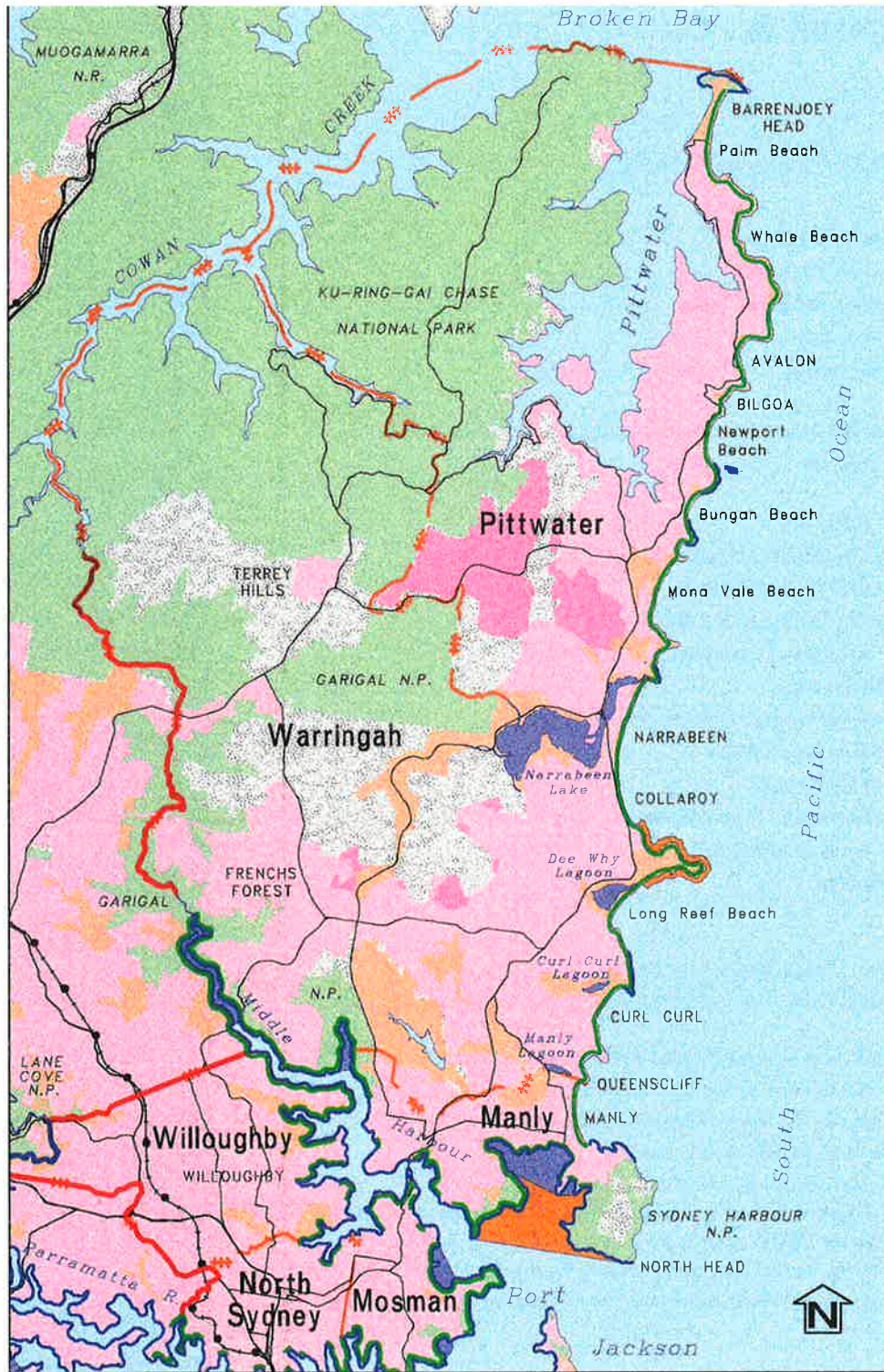
- ◆ **6f** Coastal Zone* and Catchment Management Committee and Trusts.












*The Coastal Zone as defined by the *NSW Coastal Policy 1997*:

- ◆ Three nautical miles seaward of the mainland and offshore islands,
- ◆ One kilometre landward of the open coast high water mark
- ◆ a distance of one kilometre around:
 - all bays, estuaries, coastal lakes, lagoons and islands,
 - tidal waters of coastal rivers to the limit of mangroves, as defined by NSW Fisheries' (1985) maps or the tidal limit whichever is closer to the sea.
- ◆ With the line on the maps being taken to the nearest cadastral boundary and/or easily recognised physical boundary, in consultation with local councils.



FIGURE 6a - NORTHERN BEACHES **NATURAL FEATURES**
















- | | | | |
|---|--|---|--|
|  | URBAN AREAS |  | AQUATIC RESERVES |
|  | U.D.P. AREAS |  | RECREATION FISHING RESTRICTIONS/
CLOSURES |
|  | NATIONAL PARKS/RESERVES |  | INTERTIDAL PROTECTED AREAS |
|  | OPEN SPACE AREAS |  | COASTAL WALKWAYS |
|  | OTHER (Commercial,
Industrial, Rural, etc.) |  | STUDY AREA BOUNDARY |
|  | RAILWAY LINE |  | L.G.A. |
|  | MAJOR ROADS or HWYS | | |

Prepared by DUAP

FIGURE 6b - SYDNEY HARBOUR **NATURAL FEATURES**

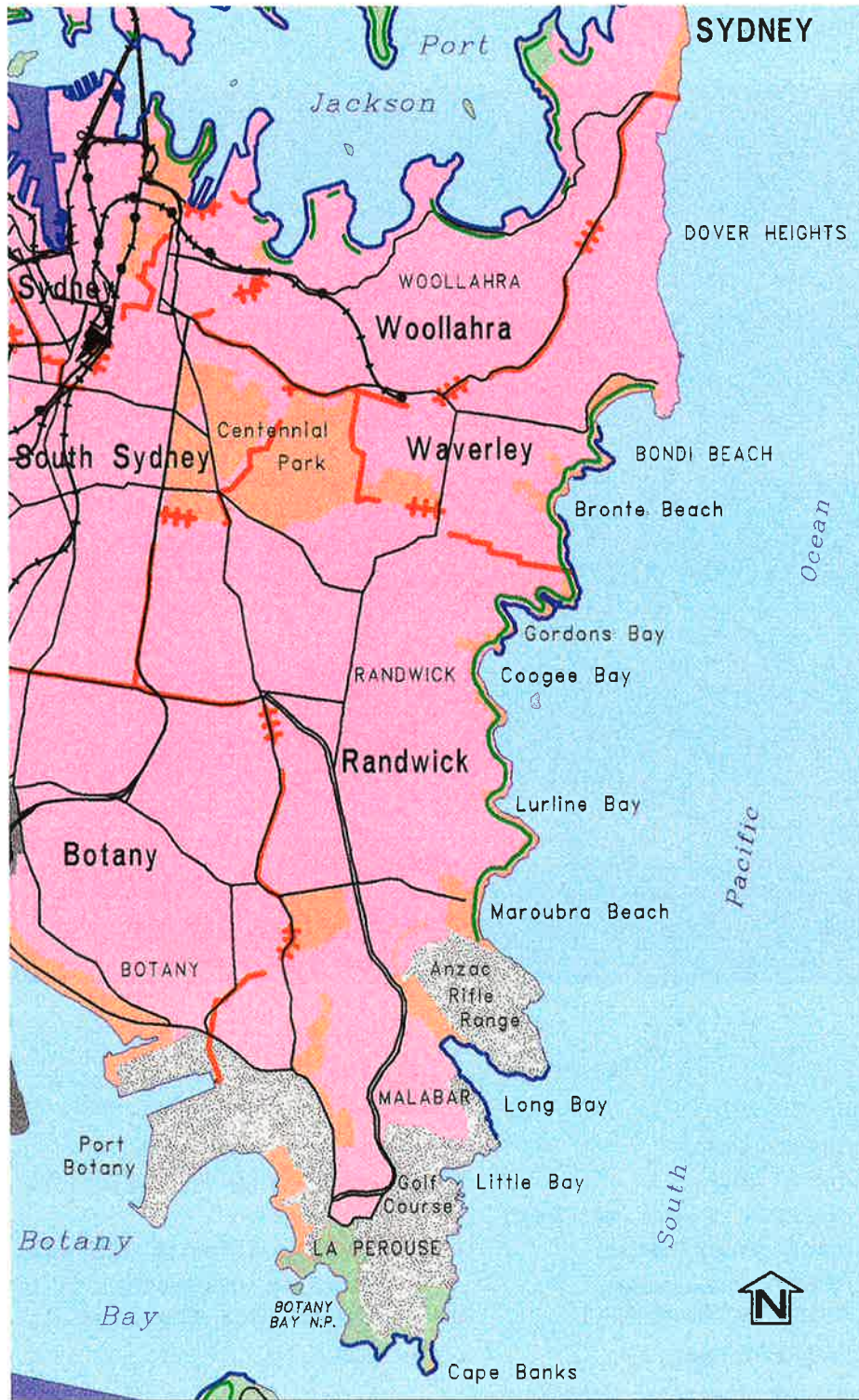















LEGEND

- | | |
|--|--|
|  URBAN AREAS |  AQUATIC RESERVES |
|  U.D.P. AREAS |  RECREATION FISHING RESTRICTIONS/
CLOSURES |
|  NATIONAL PARKS/RESERVES |  INTERTIDAL PROTECTED AREAS |
|  OPEN SPACE AREAS |  COASTAL WALKWAYS |
|  OTHER (Commercial,
Industrial, Rural, etc.) |  STUDY AREA BOUNDARY |
|  RAILWAY LINE |  L.G.A. |
|  MAJOR ROADS or HWYS | |

Prepared by DUAP

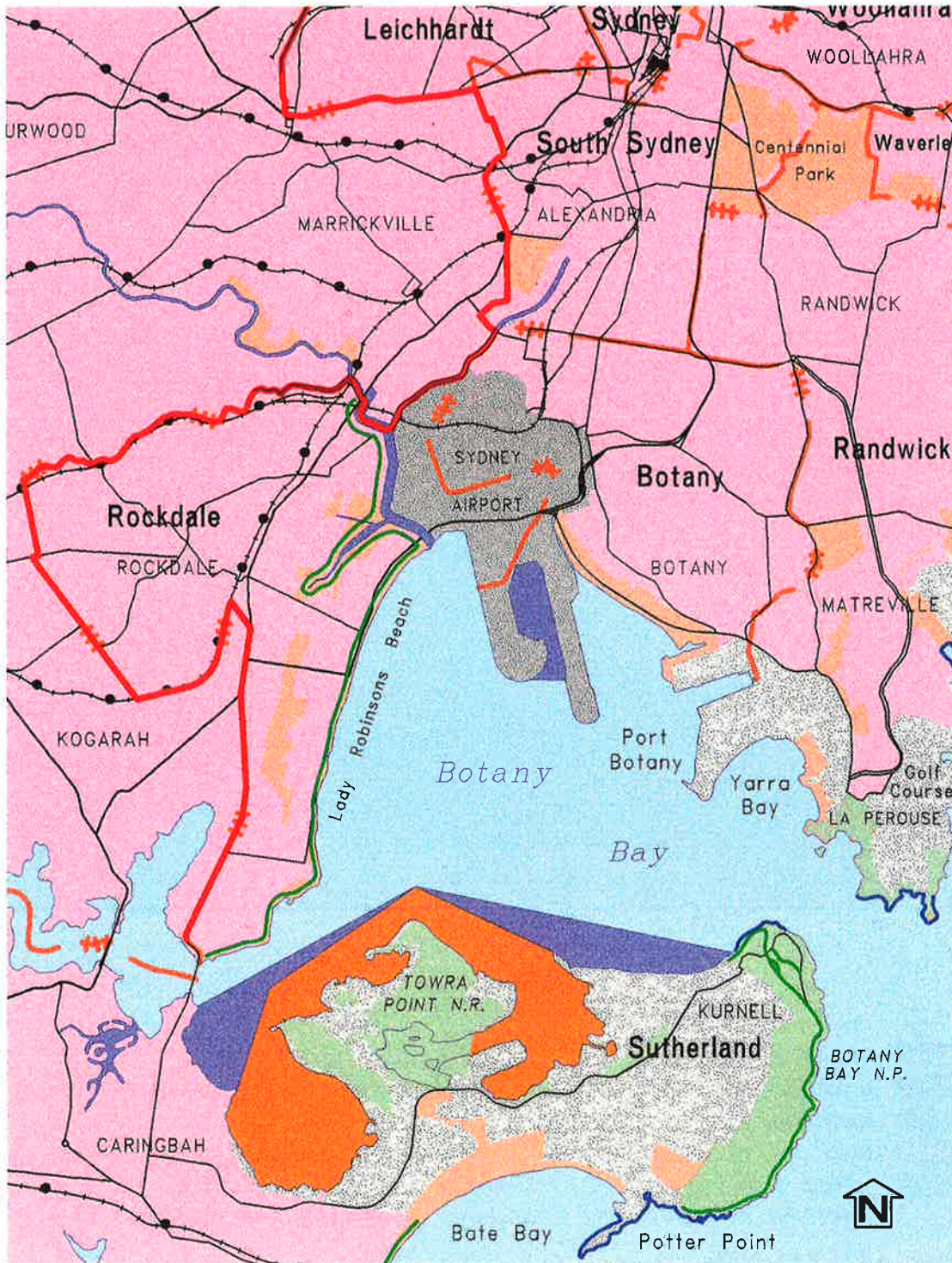
FIGURE 6c - EASTERN BEACHES **NATURAL FEATURES**
















- | | | | |
|---|---|---|--|
|  | URBAN AREAS |  | AQUATIC RESERVES |
|  | U.D.P. AREAS |  | RECREATION FISHING RESTRICTIONS CLOSURES |
|  | NATIONAL PARKS/RESERVES |  | INTERTIDAL PROTECTED AREAS |
|  | OPEN SPACE AREAS |  | COASTAL WALKWAYS |
|  | OTHER (Commercial, Industrial, Rural, etc.) |  | STUDY AREA BOUNDARY |
|  | RAILWAY LINE |  | L.G.A. |
|  | MAJOR ROADS or HWYS | | |

Prepared by DUAP

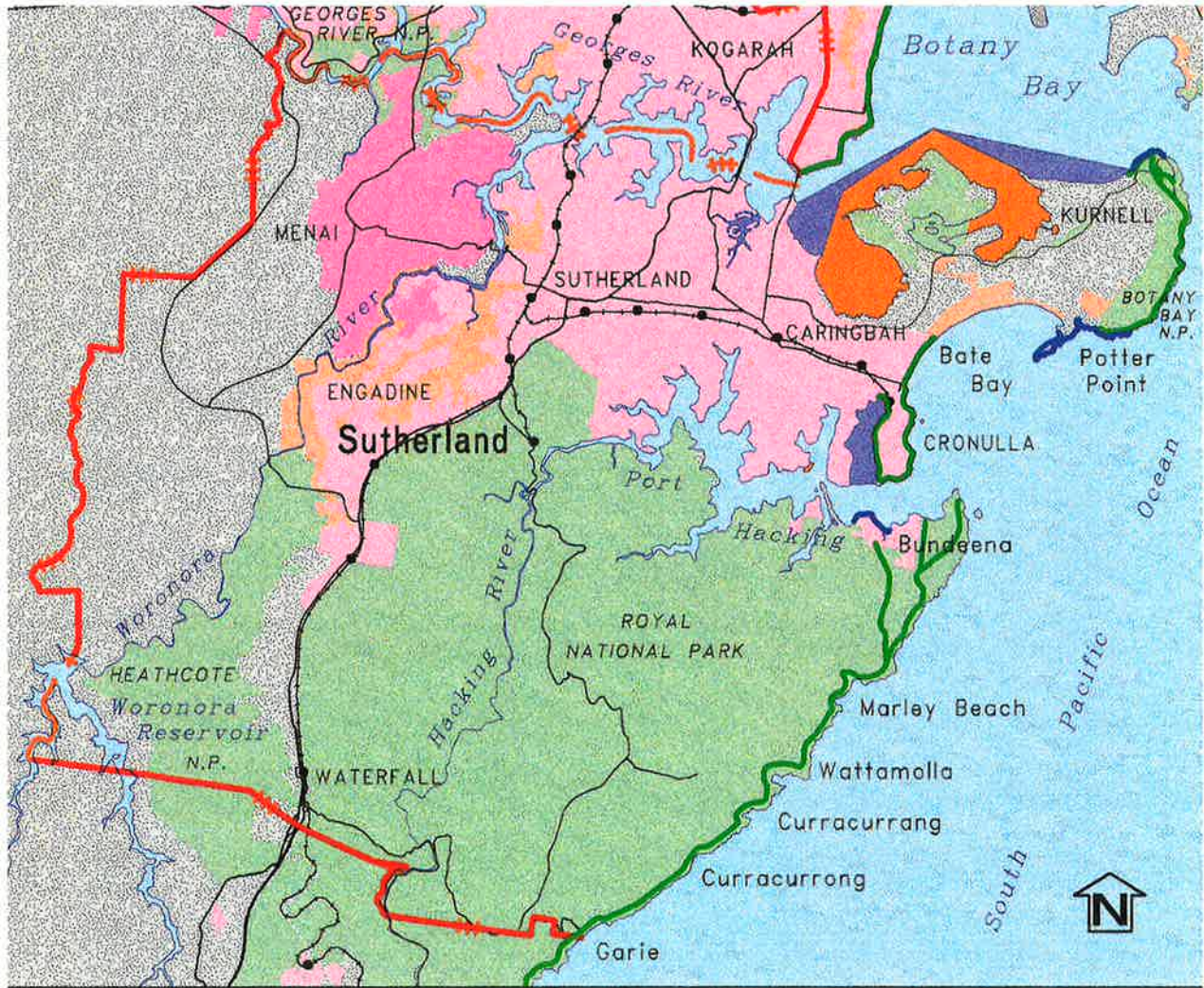
FIGURE 6d - BOTANY BAY **NATURAL FEATURES**
















- | | | | |
|---|--|---|--|
|  | URBAN AREAS |  | AQUATIC RESERVES |
|  | U.D.P. AREAS |  | RECREATION FISHING RESTRICTIONS/
CLOSURES |
|  | NATIONAL PARKS/RESERVES |  | INTERTIDAL PROTECTED AREAS |
|  | OPEN SPACE AREAS |  | COASTAL WALKWAYS |
|  | OTHER (Commercial,
Industrial, Rural, etc.) |  | STUDY AREA BOUNDARY |
|  | RAILWAY LINE |  | L.G.A. |
|  | MAJOR ROADS or HWYS | | |

Prepared by DUAP

FIGURE 6e - PORT HACKING **NATURAL FEATURES**

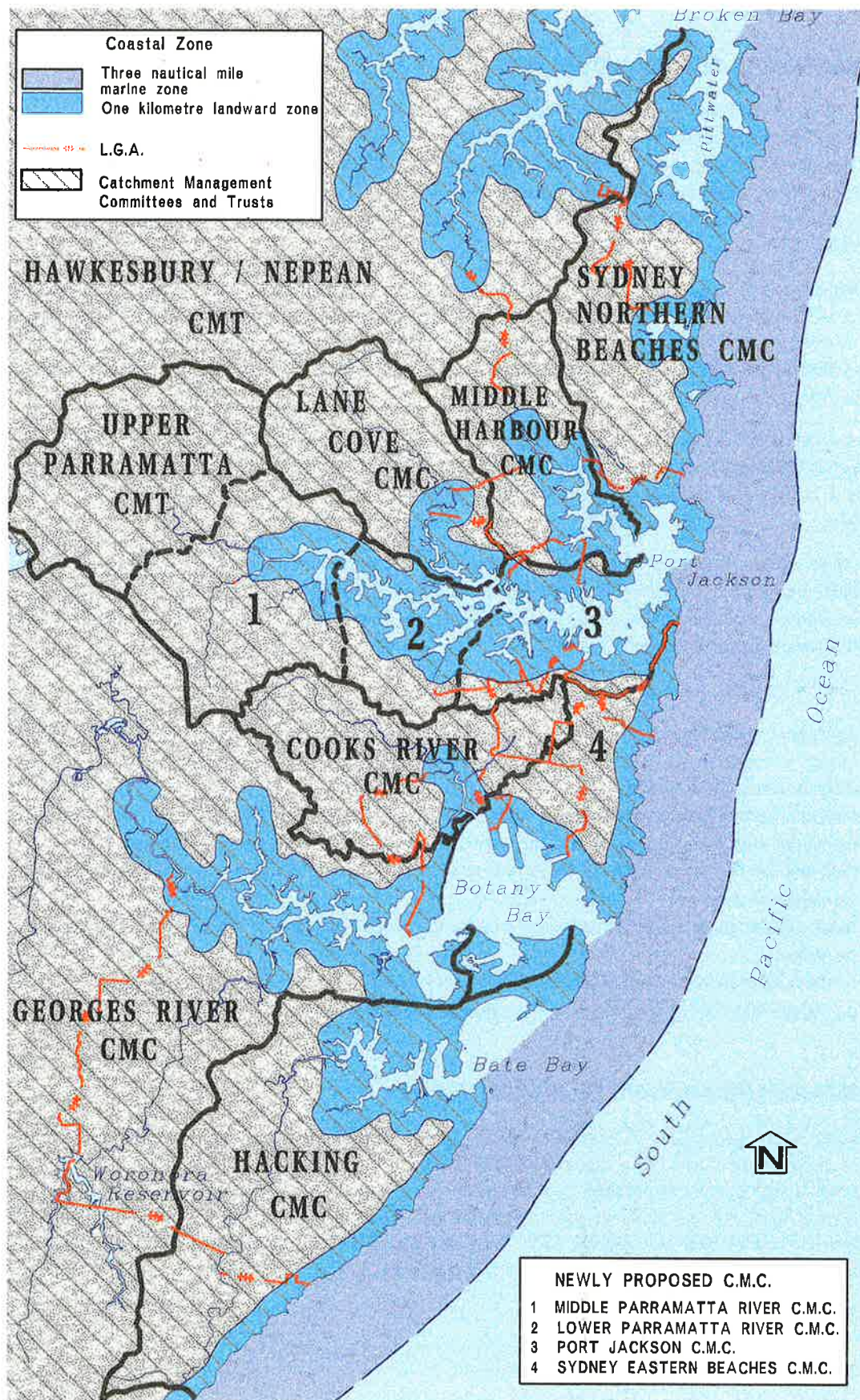


LEGEND

- | | | | |
|---|--|---|--|
|  | URBAN AREAS |  | AQUATIC RESERVES |
|  | U.D.P. AREAS |  | RECREATION FISHING RESTRICTIONS/
CLOSURES |
|  | NATIONAL PARKS/RESERVES |  | INTERTIDAL PROTECTED AREAS |
|  | OPEN SPACE AREAS |  | COASTAL WALKWAYS |
|  | OTHER (Commercial,
Industrial, Rural, etc.) |  | STUDY AREA BOUNDARY |
|  | RAILWAY LINE |  | L.G.A. |
|  | MAJOR ROADS or HWYS | | |

Prepared by DUAP

FIGURE 6F- COASTAL ZONE & **CATCHMENT MANAGEMENT COMMITTEES & TRUSTS**



Prepared by DUAP

SEVEN

APPENDIX 7

1. MONITORING AND EVALUATION PROGRAM

It is well recognised that an effective monitoring and evaluation framework cannot be added onto the end of the process as an afterthought. A literature search undertaken during the preliminary study highlighted the absence of any true monitoring and evaluation program for regional natural resource management plans and strategies prepared in Australia. Effective evaluation of management activities requires the initiation of clear performance measures and the establishment of a monitoring and evaluation framework during the development and initial stages of implementation.

It is imperative that a suitable and practical monitoring system is developed for the SRCMS to ensure ongoing evaluation of its implementation and to determine the ongoing appropriateness of the strategic actions for stakeholders. A monitoring system must also estimate progress towards the achievement of the management outcome statements identified in the SRCMS for each of the six key themes (Water Cycle Management, Nature Conservation, Public Access, Role of Government, Climate Change, Cultural Heritage) and sub themes.

The monitoring and evaluation program is to build on and utilise the regional monitoring program prepared by the Australian Local Government Association (ALGA, 1997) which adopts the pressure-state-response model and provides a SMART filter for choosing core indicators for monitoring the implementation progress of the strategic actions.

The ALGA model will be used to identify and incorporate NSW studies on core indicators to develop a simple and practical approach to evaluating the effectiveness, efficiency and implementation progress of the strategy. This model program should also help identify the benefits and any adverse impacts associated with the implementation of the Strategic Actions Program.

The desired outcomes of the program include:

- ◆ a practical monitoring and evaluation system for natural resource management plans that can be used by coastal managers to accurately monitor and evaluate the implementation of the Strategic Actions Program and assist stakeholders in reporting their relevant implementation activities
- ◆ core and general indicators that directly identify the performance of, and impacts on the environment associated with, the implementation of allotted actions by primary responsible organisations
- ◆ data that can be incorporated into SoERs and used as feedback for corporate and natural resource management plans
- ◆ better understanding of the implications of management actions designed to protect and conserve natural resources
- ◆ a model for application to other regions in NSW and Australia
- ◆ a program that will facilitate information exchange and raised community awareness.

1.1 ESTABLISHING AN INITIAL EVALUATION SYSTEM

To facilitate this process the RSC, including SCCG member councils, is to establish working groups to develop appropriate core environmental and performance indicators, and to refine the reporting processes and procedures assigned to each primary responsible organisation. These working groups made up of key stakeholders will also incorporate local and organisational requirements for each of the relevant strategic actions (see monitoring and evaluation proforma example on page 134). The working groups will also consider and build on current work undertaken by the Commonwealth, State and local governments.



Existing indicators and proven evaluation models and techniques will be considered and incorporated wherever possible. The Regional State of the Environment Indicators Report undertaken by ALGA throughout 1997 will be utilised extensively by the working groups developing the indicator selection criteria model and evaluating the many pressure-state-response indicators that exist. The working groups will also evaluate State and local monitoring and evaluation investigations and studies to develop a compatible and consistent model system able to be used by RSC representative organisations and wider afield. The development of the monitoring framework will also consider relevant existing and proposed data sources, general data collection and storage issues, and resource requirements and availability issues. A peer review will be conducted once a draft monitoring program has been established to assist in the refinement of the process and ensure that proposed indicators, monitoring methods and data storage and dissemination issues are meaningful and achievable.

1.2 INDICATORS

Indicators are aspects of the natural, social, economic and cultural environment that can be monitored to provide information on current conditions and trends. When monitored over time, indicators produce data that can show subtle changes in the environmental state and the achievement of performance targets. For the SRCMS this involves the development of indicators that can evaluate the implementation performance of the strategic actions; identify changes and trends in environmental health; and provide an early warning system of any negative impacts and improvements.

It is proposed to develop core indicators to cover all strategic outcomes, which are linked to existing reporting and evaluation processes wherever possible and can be combined to develop indices to report on the achievement of ESD, management goals, objectives and outcome statements.

1.2.1 Selection Criteria for Indicators

The report prepared by the Department of Environment, Sport and Territories in 1994 entitled *State of the Environment Reporting - Framework for Australia* and the document recently released by the NSW Department of Local Government entitled *Environmental Guidelines: State of the Environment Reporting by Local Government promoting Ecological Sustainable Development, 1998* provide selection criteria that the developed indicators should satisfy. They should:

- ◆ serve as a robust indicator of environmental change
- ◆ reflect a fundamental or highly valued aspect of the environment
- ◆ be applicable to local and regional issues
- ◆ be sensitive and provide an early warning of potential problems
- ◆ be capable of being monitored at reasonable cost (cost effective), to provide statistically verifiable and reproducible data that shows changes in the environment
- ◆ be scientifically credible
- ◆ be consistent as far as possible with indicators used in other SoER and related frameworks
- ◆ be monitored regularly with relative ease
- ◆ be as aggregative as possible (that is amenable to combination with other indicators to produce more general information about environmental conditions)
- ◆ have relevance to policy and management needs
- ◆ be readily interpretable and understandable by the general community
- ◆ be useful in educating the community about environmental conditions and trends.



1.2.2 Where possible indicators should be SMART

The SMART filter is a check list which organises the criteria for indicator selection according to five key criteria: Simple, Measurable, Accessible, Reliable and Timely.

SMART FILTER

SIMPLE	MEASURABLE	ACCESSIBLE	RELEVANT	TIMELY
1. easily interpreted (i.e. used by all RSC organisation including SCCG member councils)	5. statistically verifiable, reproducible and comparable	8. regularly monitored (i.e. annually - financial year)	12. indicative of fundamental environmental functions (i.e. linked to implementation performance, environment condition and health to provide an early warning system of problems and improvements)	
2. easily monitored (i.e. no significant increase in necessary resources)	6. able to be combined with others to form indices	9. currently used by public and private managers (i.e. linked to State and local reporting methods and programs)	13. related to a highly valued environmental aspect (e.g. waterways, remnant bushland, threatened species)	17. early warning of potential problems (e.g. is affected directly and not masked by other interactions)
3. appropriate for community use	7. able to show trends over time	10. cost-effective (i.e. linked to existing reporting processes and procedures wherever possible - business and management plans and SoERs)	14. related to regional environmental policies and management goals	
4. mappable (data linked to Geographical Information Systems)		11. consistent with other regions, States/ Territories and nations (i.e. linked to Commonwealth, State, ALGA and Local Govt. reporting processes and procedures)	15. related to State/Territory and national environmental policies and management goals	
			16. relevant to international treaty reporting obligations (e.g. CAMBA, JAMBA, BURRA Agreement)	



A SMART Filter Proforma

SMART Criteria	Indicators	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Ideal Rating (high, medium, low)		H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
Water Cycle Management	1. 2. 3. etc.																	
Nature Conservation																		
Public Access																		
Role of Government																		
Climate Change																		
Cultural Heritage																		

1.3 STRATEGY REVIEW AND REPORTING REQUIREMENTS

The SRCMS will be reviewed as set out in Section 3. The reporting requirements for participating stakeholders include the preparation of brief annual reports (financial year) detailing the implementation progress, success of identified strategic actions under their responsibilities and the resultant environmental impacts. The SRCMS will be comprehensively reviewed five years after its adoption to reassess the practicality and to define the key regional issues and actions that require focused attention.

1.4 ANNUAL REPORTS

Once indicators have been established to cover all or relevant strategic outcomes, those stakeholders with a priority responsibility for implementation will report annually. Work groups will be established for each of the representative organisations to develop an implementation strategy for their organisation

An action tracking spreadsheet/database will be used to assist primary responsible organisations to report on the progress of their strategic actions. An example of this spreadsheet is provided on the next page.

MONITORING AND EVALUATION ANNUAL REPORT PROFORMA (EXAMPLE ONLY)

Primary Stakeholder	Action Indicator(s)	Indicator Result	Current Program Response	Required Program Response	Dept/Branch	Budget Funding
<p>Warringah Council</p>	<p>1.1.1 % catchments audited</p> <p>No. of inspections</p> <p>No. of education programs and/or</p> <p>No. of education packages sent out</p> <p>No. of premises whose potential stormwater pollution has been identified as (high, medium, low)</p>	<p>30% of catchments audited</p> <p>80% (of industrial premises audited)</p> <p>1250</p> <p>(As part of premises inspection)</p> <p>(ongoing pollution assessments)</p>	<p>Undertaken industrial catchment audits for Curl Curl, Manly, and Dee Why catchments</p> <p>Development of the Environmental Education Package for Industry (information sheets, stormwater drain stencilling, best practice information, signage)</p> <p>Developing Commercial / Retail Education Programs</p> <p>Developing Soil & Sediment Control Education Program</p> <p>Ongoing implementation of the Stormwater Stencilling Program</p> <p>Pilot Project "Don't Dump on Narrabeen Lagoon" (EPA Solutions to Pollution)</p>	<p>Continue catchment auditing of Narrabeen and Manly Dam Catchments and the Frenchs Forest Area</p> <p>Develop water/stormwater pollution education programs focusing on developers, residents and waterway users</p>	<p>Community & Cultural Services</p> <p>Health and Safety Services</p> <p>Education and Promotion team</p> <p>Catchment Liaison Officer</p>	<p>Approx. Budget 1997/98 \$50,000</p> <p>Approx. Stormwater Trust Grant \$100,000 (Council & Oz Green)</p>



STRATEGIC ACTIONS PROGRAM IMPLEMENTATION PRIORITIES MATRIX

ASSESSMENT CRITERIA	ESSENTIAL	HIGHLY DESIRABLE	DESIRABLE
1. Is a sustainable coastal management practice or contributes to one	*	*	*
2. Can be easily incorporated into the existing planning & management system	*	*	
3. Requires little or no new resource allocation	*	*	
4. Where applicable requires minimal maintenance	*	*	
5. Has the greatest cost benefit outcome for the key themes	*		
6. Is a legislative responsibility	*		
7. Is easily measurable in terms of performance and outcomes (statistically verifiable and clearly shows trends)	*		
8. Results of monitoring will be made widely available	*		
9. Does not address regionally significant issues			*
10. Is not consistent with the <i>NSW Coastal Policy</i>			*



PHOTOGRAPHIC ACKNOWLEDGMENTS

PAGE	DESCRIPTION	SOURCE
i	Narrabeen - Collaroy Beach	DLWC
ii	Collaroy Beach	DLWC
iii	Pittwater	SCCG
iv	St Michael's Cave - Avalon	SCCG
v	Bondi Beach	DUAP
vi	Avalon Beach	SCCG
	Lady Robinsons Beach - Botany Bay	SCCG
	Sydney Harbour Bridge	DUAP
1	Port Hacking - Bate Bay	DLWC
	Collaroy Beach	DLWC
3	Circular Quay - Port Jackson	DUAP
5	Gap Park - Watsons Bay	DUAPs
	Narrabeen - Collaroy Beach with Narrabeen Lagoon entrance in the foreground	DLWC
6	Riverine Park Wetlands - Rockdale	SCCG
	Towra Point - Kurnell Sand Dunes - Botany Bay	SCCG
7	Aboriginal drawings on cave walls	Robyn & John Hodge
	Newport - Mona Vale - Pittwater	DLWC
8	Bondi Beach	DUAP
10	Coogee Beach	DUAP
	Bondi Beach	DUAP
11	Botany Bay National Park - Kurnell	SCCG
12	South Coogee - Eastern Suburbs Coastal Walkway	DLWC
13	"Bangalley Head" with Avalon Beach on the left, Careel Bay on the right and Scotland Island and Pittwater in the background.	DLWC
14	Sydney Harbour	DUAP
15	Coogee Beach	DUAP
16	Cronulla	DLWC
17	Bondi Beach	DUAP
	Lady Robinsons Beach - Botany Bay	SCCG
18	Sunset	Tourism NSW
37,123	Parsley Bay Reserve	DUAP
53	Balls Head Reserve	DUAP
73	Collaroy Beach	DLWC
92	Logo	Simon Ruwald
97	Barrenjoey Head - Pittwater	DLWC



PAGE	DESCRIPTION	SOURCE
99	Eve Street Wetlands - Rockdale	SCCG
105	Botany Bay	DLWC
106	Long Reef - Dee Why (Dee Why Lagoon top centre)	DLWC
110	Eastern Beaches	DLWC
111	Bare Island, La Perouse - Botany Bay National Park	SCCG
112	Port Hacking with Towra Point and the city in the background	DLWC



Notes







Prepared by the
Sydney Coastal Councils Group Inc.
in conjunction with the Regional Steering Committee
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