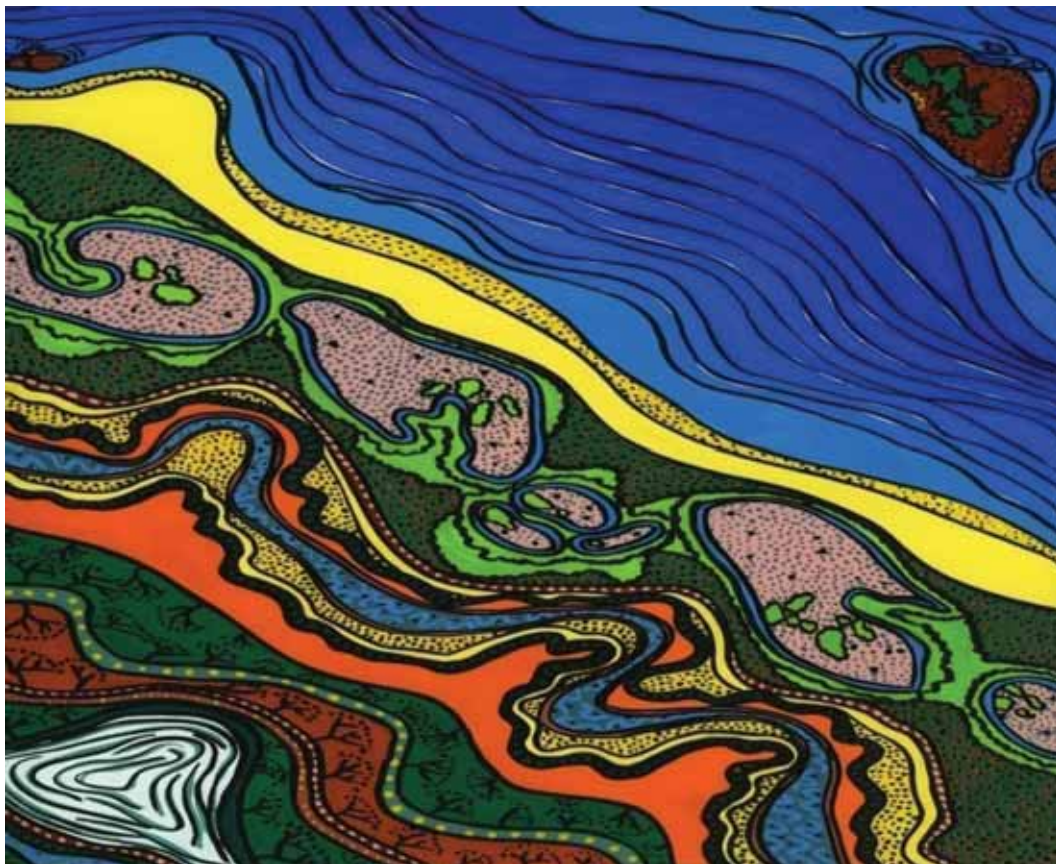




2009 – 2030

SOUTHERN SHORES

A Strategy to Guide Coastal Zone Planning and Management in the South Coast Region of Western Australia



– southcoastnrm.com.au –

Funded by the Western Australian and Australian Governments



Australian Government

Prepared by

coffey environments
SPECIALISTS IN LIVING AND WORKING PLACES

For the South Coast Management Group, 2009

SOUTHERN SHORES 2009-2030

A Strategy to Guide Coastal Zone Planning and Management in the South Coast Region of Western Australia

Prepared by
Coffey Environments
for SOUTH COAST MANAGEMENT GROUP 2009

– **southcoastnrm.com.au** –

Funded by the Western Australian and Australian Governments



Australian Government

Funded through South Coast Natural Resource Management Inc. –
Supported by the Australian Government and the Government of Western Australia.

Project Ref: ENVIALBA00527AA_004_mp_rept_V4 EA2009/012

Written/Submitted by:

A handwritten signature in black ink, appearing to read "Melanie Price".

Melanie Price
Senior Environmental Scientist
Environmental Planning

Reviewed/Approved by:

A handwritten signature in black ink, appearing to read "Paul Zuvela".

Paul Zuvela
Manager
Environmental Planning

The information contained in this publication is intended for general use, to assist public knowledge and discussion and to help improve the sustainable management of the South Coast coastal zone. It includes general statements based on local knowledge and scientific research. Readers are advised and need to be aware that this information may be incomplete or unsuitable for use in specific situations. Before taking any action or decision based on the information in this publication readers should seek expert professional and technical advice.

Cover and other art work by Barb Green

This document is available at: <http://southcoastmanagementgroup.org.au/>

Citation: Coffey Environments and South Coast Management Group (2009) Southern Shores 2009 – 2030. A Strategy to Guide Coastal Zone Planning and Management in the South Coast Region of Western Australia.

Acknowledgments



South Coast Management Group

Southern Shores 2001 - 2020 was originally released in 2001 with the support of a large number of people in the South Coast region, and beyond. The concept for the development of a regional coastal strategy was initiated some years ago by dedicated South Coast Management Group (SCMG) members who were becoming concerned for the future of the coast and seas in their region. It was becoming evident that population and visitation was increasing and that the coast was a focal recreation destination. SCMG members wanted the opportunity to develop a guiding coastal strategy which identified problems and issues associated with this increase in coastal usage and which provided mechanisms for the resolution of problems collectively at a regional scale. The SCMG sought funding for the project and worked with the Regional Coastal Facilitators, Jamie Allnutt and Barb Green to prepare the 2001 Southern Shores document.

The review of Southern Shores 2001 -2020 has been the result of dedication and input of those who care for the coast for all its values.

The SCMG, with the support of Local Government members, State Government agencies, community and South Coast Natural Resource Management Inc (South Coast NRM Inc.) are to be congratulated on their effort to implement actions identified in the original Southern Shores and recognise that emerging issues and increasing pressure on the coastal zone required this review to be carried out. This Review was funded through South Coast Natural Resource Management Inc. - supported by the Australian Government and the Government of Western Australia.



Path view by Sheryn Prior

The continuing work of the SCMG to promote best practice coastal and marine planning and management through community, Local, State and Australian Government input has been a strength of the SCMG. Much has been achieved collectively in coastal zone management since 2001.

Congratulations to members of the SCMG, past and present, who attend meetings in a voluntary capacity. Your dedication and contribution continues to be invaluable. Current members include:

Dale Stewart (CEO)	Shire of Denmark
Yvette Caruso (CEO Proxy)	Shire of Denmark
Helen Heydenrych (CEO Proxy)	Shire of Denmark
George Ebbett (Councillor)	Shire of Denmark
Alex Syme (Councillor)	Shire of Denmark
Jean Brenton (Community Representative)	Shire of Denmark
Jeni Liell-Cock (Community Representative)	Shire of Denmark
Paul Richards (CEO)	City of Albany
Alexandra Tucker (CEO Proxy)	City of Albany
Kim Stanton (Councillor)	City of Albany
John Walker (Councillor)	City of Albany
Brad Kneebone (Community Representative)	City of Albany
Samantha Rayner (Secretary & Community Representative)	City of Albany
Bill Parker (CEO)	Shire of Jerramungup
Corrine Hobbs (Councillor)	Shire of Jerramungup
Rhonda Williams (Treasurer & Councillor)	Shire of Jerramungup
Kelly Flugge (Community Representative)	Shire of Jerramungup
Fred Powell (Community Representative)	Shire of Jerramungup
Pascoe Durtanovich (CEO)	Shire of Ravensthorpe
Don Lansdown (Councillor)	Shire of Ravensthorpe
Jan Field (Councillor)	Shire of Ravensthorpe
Bill Auburn (Chair and Community Representative)	Shire of Ravensthorpe
Mal Osborne (CEO)	Shire of Esperance
Paul Clifton (CEO Proxy)	Shire of Esperance
Kath Little (CEO Proxy)	Shire of Esperance
Brian Pearce (Councillor)	Shire of Esperance
Ron (Doc) Reynolds (Councillor)	Shire of Esperance
Richard Brooks (CEO)	Shire of Dundas

Sincere thanks is also extended to all those who took part in community consultation workshops in coastal towns and to Local and State Government officers who gave their time to assist in the identification and discussion of issues. Particular mention is made of:

Chris Gunby	Department of Water
Bruce Bone	Department of Environment and Conservation
John Watson	Department of Environment and Conservation
Ian Herford	Department of Environment and Conservation
Dylan Gleave	South Coast NRM Inc.
Sheryn Prior	South Coast NRM Inc.
Neil Blake	South Coast NRM Inc.
Rob Edkins	South Coast NRM Inc.
Phil Shaw	Department of Fisheries
Tim Overheu	Department of Agriculture and Food
Nikki Pursell	Department of Planning

The Southern Shores Review 2009 – 2030 was facilitated by Melanie Price of Coffey Environments.

Contents

Acknowledgments	4
1 INTRODUCTION	8
1.1 The South Coast	8
1.2 Purpose of this Document.....	9
2 VISION – GUIDING SOUTHERN SHORES 2009 - 2030	10
2.1 Vision Statement.....	10
3 DEVELOPING SOUTHERN SHORES 2009 - 2030	11
3.1 The South Coast Management Group.....	11
3.2 Implementing Southern Shores 2009 - 2030.....	12
3.3 Measuring Success	12
3.4 Study Area	13
3.5 Emerging Issues.....	13
Study Area	14
4 EXISTING AUSTRALIAN GOVERNMENT, STATE GOVERNMENT, REGIONAL & LOCAL PLANNING AND POLICY INITIATIVES	15
4.1 Australian Government Initiatives	15
4.2 State Government Initiatives	16
4.2.1 Department of Environment and Conservation.....	17
4.2.2 Environmental Protection Authority	17
4.2.3 Western Australian Planning Commission/Department of Planning	18
4.2.4 Department of Regional Development and Lands	18
4.2.5 Department of Local Government	18
4.2.6 Department of Fisheries, Western Australia	19
4.2.7 Department of Water.....	20
4.2.8 Department of Agriculture and Food.....	20
4.3 Regional Initiatives	20
4.4 Local Initiatives	21
4.4.1 Community Initiatives.....	22
4.4.2 Initiatives by Local Government Area.....	22
4.4.2.1 Shire of Denmark	22
4.4.2.2 City of Albany	23
4.4.2.3 Shire of Jerramungup.....	24
4.4.2.4 Shire of Ravensthorpe.....	25
4.4.2.5 Shire of Esperance	26
4.4.2.6 Shire of Dundas	27
4.4.3 Local Planning Strategies & Town Planning Schemes	27
5 PLANNING & MANAGEMENT PATHWAYS TO IMPLEMENTATION	28
6 COMMUNITY PARTICIPATION	29
6.1 Education and Awareness Raising.....	30
6.2 Coastal Community Support.....	32
6.3 Indigenous Involvement	34
7 COASTAL ZONE PLANNING, DEVELOPMENT & MANAGEMENT	36
7.1 Coastal Zone Management Planning.....	37
7.2 Marine Planning and Management	39
7.3 Climate Change	42
7.4 On-Ground Management of Coastal Locations.....	44
7.5 Man-Modified Shorelines.....	47
7.6 Coastal Development.....	48

7.7	Catchment Management Planning.....	50
7.8	Stormwater Management & Nutrient Enrichment	52
7.9	Pollutants, Debris and Rubbish	54
7.10	Industry & Mineral Extraction.....	57
7.11	Preservation of Aboriginal and European Heritage	58
7.12	Native Title.....	59
7.13	Protection of Coastal Landscapes and Views	60
7.14	Commercial Fishing & Shore-Based Operations.....	61
7.15	Marine Aquarium Species Collection	62
7.16	Aquaculture and Mariculture	64
8	ENVIRONMENT & BIODIVERSITY	66
8.1	Maintenance of Ecosystem Health and Connectivity.....	67
8.2	Biological and Geological Diversity.....	69
8.3	Invasive Species Management.....	72
8.4	Coastal Rehabilitation	75
8.5	Fire Management.....	77
8.6	Island Management	78
8.7	Coastal Wetland & Estuary Protection.....	79
8.8	Protection of Roosting, Foraging and Nesting Shorebirds on Mainland Shores	81
8.9	Protection of Intertidal Organisms	83
8.10	Vessel Anchoring	84
9	COASTAL RECREATION AND HUMAN USE	85
9.1	Pedestrian and Dual Use Access to the Coast.....	86
9.2	Coastal Infrastructure and Facilities	87
9.3	Management of Recreational Activities.....	89
9.4	Management of Vehicles on the Coast	91
9.5	Visitor Safety	93
9.6	Camping.....	95
9.7	Rubbish Disposal.....	97
9.8	Coastal Tourism	98
10	REFERENCES AND BIBLIOGRAPHY	101
	ACRONYMS & STAKEHOLDERS.....	112
	FIGURES	114
	Figure 1 - Southern Shores Study Area.....	115
	Figure 2 - Coastal Locations Index Map	116
	Figure 3 - Shire of Esperance East - Coastal Locations.....	117
	Figure 4 - Duke of Orleans Bay - Coastal Locations.....	118
	Figure 5 - Esperance Town - Coastal Locations	119
	Figure 6 - Shire of Esperance West - Coastal Locations	120
	Figure 7 - Shire of Ravensthorpe East - Coastal Locations	121
	Figure 8 - Shire of Ravensthorpe West - Coastal Locations.....	122
	Figure 9 - Shire of Jerramungup East - Coastal Locations	123
	Figure 10 - Shire of Jerramungup West - Coastal Locations	124
	Figure 11 - City of Albany East - Coastal Locations	125
	Figure 12 - City of Albany Central - Coastal Locations.....	126
	Figure 13 - Princess Royal Harbour King George Sound - Coastal Locations	127
	Figure 14 - City of Albany West - Coastal Locations.....	128
	Figure 15 - Shire of Denmark - Coastal Locations.....	129
	Figure 16 - Wilson Inlet - Coastal Locations.....	130



1 INTRODUCTION

1.1 The South Coast

The Australian coastal zone comprises a wide range of climatic, geological and oceanographic regimes and interacting mix of terrestrial, estuarine and marine ecosystems which support a wealth of biodiversity and significant human related activities.

In the South Coast Region of Western Australia, the coastal zone is amongst the most pristine and scenic in Australia. The area offers a unique experience for all who visit and all who choose to live and recreate on the coast. People are drawn to the South Coast for its awe inspiring scenery, unique environmental values, intact natural systems and for a lifestyle not found elsewhere.

While many areas of the South Coast are relatively sparsely populated, the towns of Albany and Esperance have developed into bustling economic centres. The smaller coastal towns of Bremer Bay and Denmark provide a different level of economic activity relying heavily on seasonal tourism. Hopetoun has, until recently been the subject of unprecedented growth due to the nearby construction of a nickel mine. All towns provide a variety of experiences for the people who live in them and those who visit the area and are each unique in their own way. This uniqueness also allows locals and visitors enormous scope for choosing the experience they wish to have and is a valuable asset in itself.

The coastline of the Region consists of some of the most spectacular beaches and waters found in Australia. Beaches are most often a brilliant white and provide a magnificent contrast to the clear aqua waters of the near shore Southern Ocean. Tall and steep dunes, vegetated with colourful and hardy flora extend along much of the coastline providing spectacular view-sheds, with rivers and inlets meandering through the granite based topography to create a multi-coloured landscape. Off shore, the blue hues of the ocean constantly change and contrast with wind blown white caps. Whales, dolphins, seals and sea birds are common sights and an amazing diversity of marine life exists below the surface.

The South Coast coastal zone is an important asset environmentally; economically; and socially, to the people of the South Coast region and of Western Australia. It has, however, been recognised that pressures on the coastal environments are increasing. In 2001 'Southern Shores' was prepared by the South Coast Management Group to guide coastal planning and management in the South Coast Region.

This document, Southern Shores 2009 - 2030, has been prepared as a review of Southern Shores 2001 - 2020. It allows us to recognise achievements in coastal management over the last eight years and identify the future needs of the coastal zone and the communities that it supports. This review will contribute to the maintenance of our natural assets and lifestyle values and promote development that is carried out in a sustainable manner, so that the coast is protected for current and future generations to enjoy.

The South Coast Management Group has a proven track record of forging partnerships, securing funding, leading planning processes and facilitating on ground outcomes. By leveraging on past investment, the South Coast Management Group seeks the continuing support of the community, State and Federal Government and other key organisations to add value, communicate effectively and work in partnership to link groups and individuals to manage the coast sustainably.

1.2 Purpose of this Document

The purpose of Southern Shores 2009-2030 is to:

Revisit the vision for the coast to direct future planning and management efforts;

Re-emphasise the principles which guide the management of the coast;

Celebrate management achievements on the coast;

Revisit community identified issues affecting the coast and seas of the South Coast Region, and identify any emerging issues;

Encourage cooperative involvement by community, Local, State and Australian Government and relevant organisations in solution seeking and issue resolution; and

Provide guiding principles, strategic objectives and actions upon which to base future planning and management efforts.



Cheyne West

2 VISION – GUIDING SOUTHERN SHORES 2009 - 2030

A shared vision is often the binding link between people wishing to form workable partnerships. The vision statement should clearly outline a holistic view of where efforts can be directed. It should encompass environmental, economic, social and aesthetic values and provide a basis upon which to lay a foundation for the building of confidence between all parties. Most importantly, it should be attractive to any party involved in coastal and marine planning and management.

2.1 Vision Statement

The South Coast Region, extending from the western edge of the Shire of Denmark to the eastern edge of the Shire of Esperance, is a region of outstanding natural beauty and diversity, encompassing a healthy, resilient and well managed coastal zone.

Dedicated people of all ages and backgrounds, from community, Local, State and Australian Governments and other organisations, are committed to cooperatively maintaining and improving the coastal zone with consideration of environmental, social and economic values, for future public benefit.

The South Coast community promotes best practice coastal management, underpinned by sound and sustainable planning and considers impacts from a changing climate over many generations.

The South Coast community is recognised as a leader in Australia for the protection of the coastal environment, balancing cultural, social, recreational, educational and economic vitality.



Community site meeting by Melanie Price

3 DEVELOPING SOUTHERN SHORES 2009 - 2030

3.1 The South Coast Management Group

The South Coast Management Group (SCMG) is a regional representative body of coastal planners, managers and community delegates along the South Coast of Western Australia.

The vision of the SCMG is to bring together people, organisations and information, so that communities in the South Coast region are able to work in partnership, to improve the quality of the coastal zone environment, resulting in environmental, social and economic sustainability.

SCMG provides a forum for the discussion of issues relating to coastal and marine planning and management and also actively promotes best practice coastal management in the South Coast Region. The objectives of the SCMG are to:

- Create an environment that encourages sustainable development;
 - Promote economic, community and environmental well being in the region;
 - Foster co-operative and collaborative arrangements;
 - Promote the protection of coastal and marine environment;
 - Involve the community in coastal planning and management;
 - Consider matters of common interest to members and where practicable to establish common policy;
-
- Facilitate co-operative activities of members at a regional level;
 - Identify priorities for promotion of regional initiatives; and;
 - Sponsor or engage in publishing educational material and research in coastal initiatives.

The group comprises the Chief Executive Officer, two Councillors and two community members from the Local Governments (LGs) of the Shires of Esperance, Ravensthorpe, Jerramungup, Denmark and the City of Albany in the South Coast Region.

The SCMG receives advice and input from:

- South Coast NRM Inc.;
- Department of Planning (DoP) and Coastwest;
- Department of Environment and Conservation (DEC);
- Department of Water (DoW);
- Department of Indigenous Affairs (DIA);
- Department of Fisheries (DoF), and;
- Other Agencies, processes and individuals as required.

SCMG is supported by a Regional Coastal and Marine Facilitator (South Coast NRM Inc.) and a Coastal and Marine Implementation Officer (South Coast NRM Inc.) who work in partnership with Local Government, State Government agencies, key coastal zone stakeholders and many community groups that work in the region. Projects facilitated are around the key areas of coastal zone planning, coastal and marine research, provision of coastal infrastructure and coastal protection works and awareness raising campaigns, including educational components. Groups along the coast are provided with technical and material support by relevant government agencies, and work to enhance the resilience of the coastal and marine environment to be used sustainably into the future.

The review process has included:

- A SCMG forum;
- Community consultation meetings in Esperance, Hopetoun, Bremer Bay, Albany and Denmark;
- Meetings with Agencies, organisations and other stakeholders;
- Site visits to coastal locations managed by Local Government and the community; and;
- Preparation of a draft document for public comment.

3.2 Implementing Southern Shores 2009 - 2030

Southern Shores 2009 - 2030 contains a series of strategic objectives and actions, with a list of key parties (e.g. LG's, DEC, DoW, community) suggested in brackets. These key players are suggestions only and do not place formal responsibility on the individuals and organisations listed. Rather, their attention is drawn to the important contribution that they may be able to make within their own policy and financial priorities as well as highlighting the areas where potential for collaboration exists.

The time has been taken however, to discuss the development of Southern Shores 2009 – 2030 with all organisations listed, directly and/or through invitations to comment on Pre-Draft and Draft documents. Many have taken the time to enhance the workability of some actions so that they may assume responsibility or involvement in implementation where their presence may be appropriate.

Suggested actions are prioritised according to the categories listed in Table 1.

Table 1. Prioritisation categories assigned to actions in Southern Shores 2009 - 2030.

PRIORITY	DEFINITION
HIGH	Essential in the short term and achievable within 0-5 years.
MEDIUM	Essential in the long term and achievable within 0-10 years.
LOW	Desirable in the long term and achievable within 0-20 years.
ONGOING	Desirable in the short and long term and will require ongoing effort to be achieved.

An Implementation Plan with a 3-5 year time frame will be produced to help guide priorities and the involvement of those who wish to begin implementing actions. The implementation plan may assist land and sea managers to access funding for essential works, and potentially to attract more resources for coastal and marine planning and management to the Region. It may also help managers focus on where and how best to spend their limited resources. The implementation plan will provide cost and labour estimates where possible and suggest possible sources of funding.

It is proposed that the SCMG will facilitate the implementation, wherever appropriate, at a regional level. However, implementation can also be facilitated by any organisation or group who has a strong interest in action, particularly those who have been suggested for involvement.

3.3 Measuring Success

Southern Shores 2009 - 2030 involved the incorporation of a Report Card (see 'Existing Actions') so that the effectiveness of the original strategy could be determined.

In addition, sites along the coast have been visited and assessed as part of a 'Coastal Familiarisation' process. Visits in 2000 and in 2008/2009 have allowed for the comparison of the condition and management of coastal areas. The results of this review are included in separate reports grouped by Local Government areas.

Southern Shores 2009 – 2030 also allows for the consideration of emerging issues and priorities in coastal management. It is recommended that reviews be undertaken at 5 year intervals.

3.4 Study Area

The area covered by this strategy stretches along the coast from the western edge of the Shire of Denmark, to the eastern boundary of the Shire of Esperance (Figure 1). While the Eucla coast within the Shire of Dundas is not specifically included, similar issues are likely to apply for that area and where appropriate, aspects of the document could be applied to the Shire of Dundas.

The area encompassed by Southern Shores 2009 – 2030 varies in width along the length of the coast. The northern boundary generally coincides with the South Coast Highway from Denmark to Esperance. However, notionally the coast zone is considered to be approximately 5 kilometres from the low water mark landward and seaward to the three nautical mile State limit (Figure 1).

Southern Shores 2009 - 2030 focuses on Local Government reserves, urban areas and Unallocated Crown Land (UCL). However, issues affecting DEC managed estate are discussed and comments on these areas have been collated to assist DEC in future plan revision and/or the generation of new statutory management plans. The strategy also has its focus on the land and near shore coastal areas, rather than the marine environment as the State Government is currently compiling an overview of marine use and interests across the South Coast to facilitate planning for marine areas in a separate process.

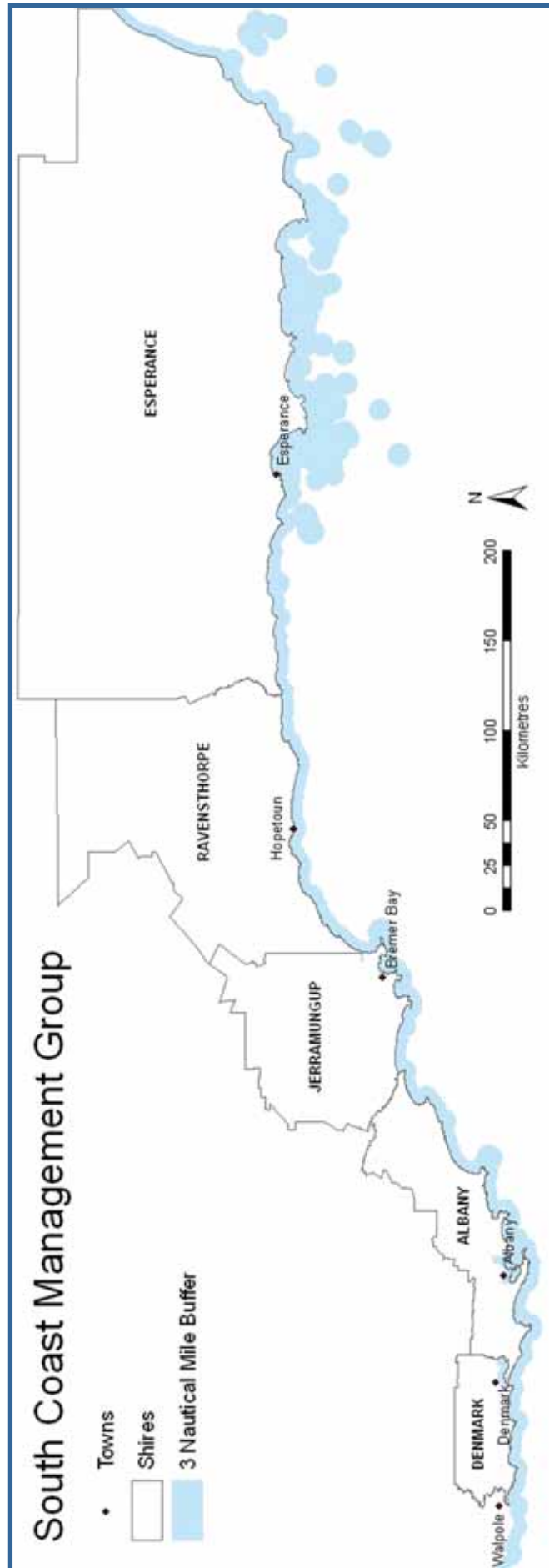
3.5 Emerging Issues

The original Southern Shores contained a diverse range of issues that were considered to be the most relevant at that point of time. To build on these issues and to review their relevance, community consultation was held as part of this review. Groups, individual and agencies were asked what they felt were the most significant issues facing coastal zone management. In terms of emerging issues or issues that continue to be of particular concern, the following were identified as the most significant:

- Climate Change;
- Lack of funding for maintenance;
- Increased population in coastal areas;
- Increased and indiscriminate use of off road vehicles; and
- The need for provision of facilities.



Study Area



4 EXISTING AUSTRALIAN GOVERNMENT, STATE GOVERNMENT, REGIONAL & LOCAL PLANNING AND POLICY INITIATIVES

It is important when developing strategies that there is a full understanding of initiatives which have been undertaken at the Australian Government, State, Regional and Local level. This then allows all of us to become involved in informed decision-making when seeking solutions for problems. The following information is coastal and marine specific, with further information provided where considered relevant.

4.1 Australian Government Initiatives

The Australian Government, at the international level has become a signatory to many international environmental initiatives. These initiatives are often the impetus for specific planning and management to occur throughout the country. The initiatives of most importance to Southern Shores 2009 – 2030 are:

Caring for our Country – is an Australian Government program with a goal of planning and implementing projects with the goal of creating ‘an environment that is healthy, better protected, well managed, resilient and provides essential ecosystem services in a changing climate’. This program commenced on July 1, 2008.

Integrated Coastal Zone Management Framework and Implementation Plan (Natural Resource Management Ministerial Council, 2006) – This plan sets the scene for national cooperation in managing coastal issues and achieving ecologically sustainable development outcomes.

Australia's Oceans Policy (Environment Australia, 1999) – This document provides broad statements and recommendations on the planning and management of ocean resources for which Australia has responsibility.

Living on the Coast – The Commonwealth Coastal Policy (Department of the Environment, Sport and Territories, 1995) – this document provides broad statements and recommendations for coastal planning and management on an Australia wide basis.

Wetlands Policy of the Commonwealth Government of Australia (Environment Australia, 1997).

Japan-Australia Migratory Bird Agreement (JAMBA, 1974).

China-Australia Migratory Bird Agreement (CAMBA, 1988).

Environmental Protection and Biodiversity Conservation Act, 1999.

The Republic of Korea and Australia Migratory Bird Agreement (ROKAMBA) came into force in July 2007 and complements JAMBA and CAMBA.

South-west Marine Bioregional Planning (Department of Environment, Water, Heritage and the Arts, 2008) – This process has developed a bioregional profile for the Commonwealth marine waters of the south-west marine region (Kalbarri, W.A. to Adelaide, S.A.) with a plan to outline a framework for sustainable use.

The Australian Government is responsible for the management of the Exclusive Economic Zone which extends 200 nautical miles offshore, excluding 3 nautical miles of inshore State waters.



4.2 State Government Initiatives

The State Government of Western Australia has:

In 1998, the State Government developed the State's first marine conservation policy: *New Horizons – the way ahead in marine conservation and management* (Government of Western Australia, 1998). This policy continues to guide marine conservation planning and management in Western Australia.

Facilitated the development of a Draft Natural Resource Management Plan for Western Australia (Government of Western Australia, 2008) which focuses on the linkages between the environment and human well being and service provided by the environment (e.g. sustenance, climate and aesthetic services). The State Government has recently agreed to adopt a new WA NRM Policy (Western Australian Government, 2009).

Prepared a State of the Environment Report Western Australia (Government of Western Australia, 2007) which highlights the key environmental threats facing Western Australia and provides a number of responses to address these.

Developed the Western Australian State Sustainability Strategy (Government of Western Australia, 2003).

The Wetlands Conservation Policy for Western Australia (Government of Western Australia, 1997) which recognises and commits to the protection and maintenance of wetland areas and associated flora and fauna throughout the State.

In 2003, a discussion paper outlined the State Government's intention to introduce legislation for Biodiversity Conservation in WA, to address the protection of ecological communities, threatened species and facilitate sustainable use of biodiversity resources.

The State Government, led by the Department of Environment and Conservation has worked towards the preparation of the draft South Coast Regional Marine Strategic Plan. The study area for the draft strategic plan extends from Cape Leeuwin to the South Australian/Western Australian border.

The draft strategic plan aims to:

- Enhance cooperation and integration between sectors,
- Recognise the importance of social, cultural and economic values that the marine environment can provide for current and future generations, and;
- Protect and maintain ecological integrity and biological diversity.

The draft plan is currently under consideration by the Western Australian Government.

4.2.1 Department of Environment and Conservation

The Department of Environment and Conservation (DEC) (formerly Department of Conservation and Land Management) is responsible for the management of a considerable area of public estate within the South Coast Region. The estate also includes the majority of islands found along the South Coast. With DEC managing approximately 70% of the coast in the South Coast Region it is important that Southern Shores 2009 – 2030 develops in harmony with, and considers many of the DEC recommendations for coastal planning and management.

DEC has developed a Regional Management Plan (CALM, 1992a) which sets priorities for the production of specific management plans for DEC managed estate throughout the Region. DEC manages these areas on behalf of the Conservation Commission of Western Australia in whom they are vested. Plans completed to date include:

- Fitzgerald River National Park (CALM, 1991),
- Walpole-Nornalup National Park (CALM, 1992b),
- West Cape Howe National Park (CALM, 1995),
- Two Peoples Bay Nature Reserve (CALM, 1995a),
- Esperance Lakes Nature Reserves (CALM, 1999),
- Walpole Wilderness Area Draft Management Plan (2009), and;
- Indicative Management Plan for the proposed Walpole and Nornalup Inlets Marine Park (2006).

The DEC is currently undertaking the preparation of area management plans under the provisions of the Conservation and Land Management Act 1984 for Esperance (Esperance Coastal Reserves Management Plan) and includes all DEC managed estate along the Esperance Shire coastline and a short distance inland. The equivalent planning process is also occurring for the Conservation Reserves of the Albany Coastline (CRAC). This approach will ensure that significant coastal areas are covered by a statutory plan as groups of reserves, which is a more efficient process than planning for individual reserves. The Draft Nature Conservation Strategy (CALM, 1992) which has a fundamental objective to 'conserve in perpetuity the widest possible diversity of indigenous landscapes, ecosystems and species (including their genetic variability) in natural habitats in Western Australia' and to 'establish and maintain a Statewide reserve system that is broadly representative of the State's natural habitats and forms a network of natural lands and waters that are sufficiently large and appropriately located to provide a refuge for migratory and other species'.

4.2.2 Environmental Protection Authority

The Environmental Protection Authority (EPA) has:

Released Guidance Statement 33 – Environmental Guidance for Planning and Development (EPA 2008) which provides information and advice to assist participants in land use planning and development processes to protect, conserve and enhance the environment.

Position Statement 8, Environmental Protection in Natural Resource Management (EPA, 2005) outlines an adaptive management framework. Adaptive management is proposed as a major principle to underpin NRM in Western Australia.

Issued the Draft Environmental Protection (State Marine Waters) Policy (EPA, 1998). The purpose of this policy is to preserve, enhance and protect the environmental values of the State's marine waters.

Issued guiding documents for the assessment of environmental factors, specifically Benthic Primary Producer Habitat Protection (EPA, 1998a) and Seagrass Habitat Protection (EPA, 1998b). The purpose of these guiding statements is 'To maintain the ecological integrity and biodiversity of marine ecosystems of Western Australia'.

4.2.3 Western Australian Planning Commission/Department of Planning

The Western Australian Planning Commission (WAPC) is the peak representative land use planning and development body in the State. The Department of Planning (DoP) provides technical advice and support to the WAPC.

The WAPC:

Guides planning and development with the State Planning Strategy (WAPC, 1996a). This strategy, while not being coastal specific, provides a framework for planning throughout the State. The strategy is aimed at developing a land use planning system to help the State achieve a number of key goals. These include generating wealth, preserving and enhancing the environment, and building vibrant and safe communities for the enjoyment of this and subsequent generations of Western Australians (WAPC, 1996a).

Prepared a Draft Coastal Zone Management Policy for Western Australia (WAPC, 2001), which outlines a whole of government approach to coastal planning.

Prepares State Planning Policies (SPP) under the Planning and Development Act 2005. SPP 2.6 State Coastal Planning Strategy was gazetted in 2003 to address land use planning and development issues specifically relating to the protection and management of the coast. The policy provides high order guidance for decision-making on coastal planning matters and applies statewide. SPP 2.6 requires the formulation of strategic plans to guide local planning, development setbacks for protection against coastal processes such as erosion and storms, and the provision of coastal foreshore reserves. Implementation of the objectives of SPP 2.6 is through Local Government town planning schemes, and regional and local strategies. SPP 2.6 is currently being reviewed.

4.2.4 Department of Regional Development and Lands

The Department of Regional Development and Lands (DRDL) has developed a Regional Development Policy (Government of Western Australia, 2003) and subsequent highlight documents (Department of Local Government and Regional Development, 2005, 2006, 2007) to ensure a whole of government approach to the provision of planning and support to provide improved programs and services, crucial to sustainable development.

The Department also addresses land tenure issues of Crown Land. Lands held in public ownership are either Class "A" reserves, Unallocated Crown land, unmanaged or managed reserves. The Land Administration Act 1997 is the State's legislation providing for the disposition and management of Crown land. On 1 July 2003, responsibility for managing some aspects of fire as well as declared plants and animals on unallocated Crown land and unmanaged reserves outside the metropolitan area, regional centres and town sites was transferred to DEC through a Memorandum of Understanding.

DRDL is responsible for discharging Crown land administration, management and disposition functions. State Land Services conducts inspections of Crown land to detect illegal occupation, offences or hazards. It is an offence to reside on any public land or erect any structure on public land and the Act provides a penalty for such an offence. In addition to illegal occupation it is also an offence to clear, cultivate, enclose or remove anything from public land without the consent of the Minister for Lands. It is also an offence to discharge firearms on Crown land without approval or reasonable excuse.

4.2.5 Department of Local Government

The Department of Local Government (DLG) provides support to the 141 Local Governments in Western Australia to increase their capacity to respond to community needs and expectations, while improving levels of accountability. The Department provides overarching support for creation and review of Local and State laws that relate to Local Government responsibilities.

4.2.6 Department of Fisheries, Western Australia

The purpose of the Department of Fisheries (DoF) is to conserve, sustainably develop and share the use of the State's aquatic resources and their ecosystems for the benefit of present and future generations. To meet this objective the Department uses an Integrated Fisheries Management (IFM) regime. IFM is aimed not only at addressing the issue of how fish resources can be best shared between competing users (commercial, recreational – including charter, and customary Indigenous fishers), but also at managing the take by these sectors within the broader context of Ecologically Sustainable Development (ESD). Stakeholders are encouraged to participate in the decision making processes that are undertaken when considering submissions for the allocation of fish resources.

The Recreational Fishing Advisory Committees have assisted DoF in creating an evolving 'Fish for the Future' code of practice for recreational fishers. The code encourages sustainable recreational fishing where fish caught are for family and individual use, fish breeding stocks are conserved (releasing excess or undersize fish), rubbish is disposed of appropriately and fishing areas, camps and tracks are cared for.

In order to commence discussion and consultation, DoF has recently released the following Fisheries Management Policy papers:

- A Strategy for Managing the Recreational catch of Demersal Scalefish in the West Coast Bioregion. (Fisheries Management Paper Number 228, March 2008);

- Integrated Fisheries Management Report – Allocation Report – Western Rock Lobster (Fisheries Management paper 218, February 2007);

- A Five Year Management Strategy for Recreational Marron Fishery (Fisheries Management Paper 217, June 2006);

- Recovery of pilchard (*Sardinop Sagax*) stocks off southern WA following the mass mortality event of 1998/99. Final FRDC Report – Project 2000/135 (Fisheries Research paper 176, 2008).

Fisheries Papers are used to inform or gain public comment on items being considered by the DoF. Regularly, the results of these papers are amendments or introduction of new legislation. The South Coast Estuarine Fishery is one such commercial fishery that went through an extensive consultation process, resulting in a management plan that seeks to best focus effort on the South Coast estuaries. DoF has undertaken a South Coast Estuarine Recreational Fisheries Assessment to identify the impacts of recreational fishing activities. The development of the Estuarine Fisheries Environmental Management Strategy and Code of Conduct has also been undertaken in consultation with commercial fishermen and the Western Australian Fishing Industry Council (WAFIC).





4.2.7 Department of Water

The Department of Water (DoW) has responsibilities for the protection and management of water resources throughout the State, including surface and ground water. The DoW has extensive involvement in waterways management in the South Coast region, though historical involvement in Wilson Inlet and Albany Harbours as Management Areas under the Waterways Conservation Act 1976 and since 1996, a more general involvement in estuary and river management in the region. This involvement has included the preparation of management plans for high priority estuaries (Wilson Inlet, Torbay, Albany Harbours, Stokes Inlet, Wellstead Estuary and Culham Inlet) rivers and wetlands. The DoW has legal powers in relation to the management of Wilson Inlet and the Albany Harbours.

DoW have developed a Statewide Waterways Initiative (2008) which identifies actions for improving waterways planning and management, priorities for waterways management, supporting measures to protect environmentally significant waterways and supporting waterway restoration.

4.2.8 Department of Agriculture and Food

The Department of Agriculture and Food (DAFWA) has an interest in the sustainable use and productivity of farm land. This includes the health of catchments and downstream impacts on wetlands and estuaries. DAFWA uses tools such as the Soil and Land Conservation Act 1945 to prevent further land degradation, acidity and salinity risk. The 'Farming for the Future' program encourages the establishment of environmental management and quality assurance system so that impacts on the surrounding environment, including the coast, are minimised.

4.3 Regional Initiatives

Southern Shores 2001 – 2020; A Strategy to Guide Coastal and Marine Planning and Management which was prepared by the South Coast Management Group (2001), has achieved strategic and on ground outcomes in terms of specific coastal zone planning and implementation. This review provides a Report Card for achievement by regional participants in coastal areas.

South Coast Natural Resource Management Inc. is the regional group for NRM and is guided by 'Southern Prospects 2004 - 2009: the South Coast Strategy for NRM' (SCRIPT, 2004) and associated NRM Investment Plans and status reports for the South Coast NRM region. This has provided assistance in the implementation of Southern Shores 2001 – 2020 and will also be one of the main conduits for funding of Southern Shores 2009 – 2030.

4.4 Local Initiatives

There are five coastal Local Governments within the South Coast Region: Shire of Esperance, Shire of Ravensthorpe, Shire of Jerramungup, City of Albany and Shire of Denmark. Each has a responsibility to care for the coast where they have management responsibility for coastal crown land. Local Government also often assume informal management of Unallocated Crown Land in partnership with DEC and DRDL, particularly where it has become important recreational space for local communities. Coastal reserves can be managed by Local Government for a variety of purposes, often for the purpose of recreation.

Local government has a role in the planning and implementation of coastal infrastructure in consultation with developers, industry, commerce and community. They also work closely with State Government agencies in the cohesive management of Local Government reserves which abut or are contiguous with State reserves.

State Government Agencies also take a lead role in local planning of some areas of the coast within their legislative jurisdiction. Individual management and collective plans for DEC managed estate are a relevant example.

The presence of large unmanaged areas of Unallocated Crown Land (UCL) on the South Coast presents a challenge, especially in remote areas. Often the community and Local Government care for UCL in popular areas. Some UCL is proposed to be included in the Conservation Estate (e.g. Gull Rock, Albany is now managed as a National Park).



4.4.1 Community Initiatives

The importance of the coast to the community is reflected in the number of people and groups involved in planning and management for the coastal and marine areas in the South Coast Region.

Most coastal towns have a community based organisation which assumes some responsibility for the sustainable planning and management and/or development of the coastal zone. The opportunity exists for these groups to access funds to undertake works through State and Australian Government programs such as the regional delivery of natural resource management initiatives in partnership with South Coast NRM Inc., Coastwest, Caring for our Country, Fishcare, Community Conservation Grants and Lotteries Commission grants. Some Local Governments also offer community grants for projects undertaken by the community within their boundary. (Refer to Directory of Financial Assistance available annually from Department of Local Government and Regional Development).

The work of the community in partnership with land, waterways, coastal and marine managers has played an important role in regional and local decision making and the implementation of coastal works. Community have also been involved with the development of all coastal management plans, the original Southern Shores 2001 – 2020 and Southern Shores 2009 - 2030.

4.4.2 Initiatives by Local Government Area

The following sections outline activities carried out in LG areas by LGs, other organisations and/or the community.

4.4.2.1 Shire of Denmark

A number of coastal planning and management initiatives have been undertaken for the Denmark coast by the LG, other organisations and community. These include:

- Shire of Denmark Coastal Management Plan (Shire of Denmark, 2003),
- Wilson Inlet Bar opening - Memorandum of Understanding,
- Research on Wilson Inlet has lead to international recognition of shorebird values,
- Wilson Inlet Foreshore Reserves Management Plan (Green Skills, 2008),
- Review of boat launching facilities,
- Code of Conduct for Surfing,
- Site planning for Peaceful Bay, Boat Harbour, Parry's Beach, Light's Beach, Back Beach and Ocean Beach,
- Implementation of access improvement (car parks, steps, paths), signage, rubbish management, weed control, infrastructure installation (toilets and fencing),
- Installation of information signs that comply with the National Aquatic & Recreational Signage Style Manual (Australian Water Safety Council et al., 2006),
- Weed management in key areas (William Bay, Peaceful Bay and Parry Beach with the Denmark Weed Action Group (DWAG)),
- Long term involvement of community in coastal management and caretaker arrangements at Parry's Beach and Peaceful Bay,
- Photo point monitoring of coastline and coastal structures in Shire of Denmark Coastal reserves conducted bi-annually by NRM officer.

4.4.2.2 City of Albany

A number of coastal planning and management initiatives have been undertaken for the Albany coast by the LG, other organisations and community. These include:

- Draft Coastal Strategy for the City of Albany (City of Albany, 2002),
- Sand Patch Environmental Management Plan (Western Power, City of Albany, Department of Environment and Conservation, 2001),
- Woolstores to Frenchman Bay Foreshore Management Plan (AWMA & City of Albany, 2000),
- Albany Trails Master Plan (Maher Brampton Associates, 1999),
- Flood plain mapping for Yakamia Creek and Lake Seppings,
- Vancouver Waterways Project (Great Southern Development Commission, 2000),
- Albany Harbours Planning Strategy and Albany Harbours Planning Strategy Guidelines (AWMA & City of Albany, 1997 & 1999 respectively),
- Cosy Corner Management Plan (City of Albany, 2000; 2007),
- Nanarup Beach Coastal Management Plan (City of Albany, 1999),
- Mount Martin Regional Botanic Park Management Plan (City of Albany 1999b),
- Cheyne Bay Management Plan (Marlok Consulting, 1999),
- Nullaki Foreshore Management Plan (City of Albany et al., 1998),
- Nullaki Coastal Foreshore and Blowout Management Plan (City of Albany et al., 1998b),
- Dedicated Reserves Officers and Bushcare assistants at the City of Albany,
- Management of Torbay and Oyster Harbour catchments,
- Albany Wind Farm at Sandpatch,
- Establishment of Off Road Vehicle – Prohibited Area (Cheyne Beach),
- Albany Seabird Rescue Group,
- Research on Wilson Inlet (Morley Beach) has lead to international recognition of shorebird values,
- Lowlands Reserve Management Plan (City of Albany, 2003) and subsequent community implementation,
- Cat Control Policy,
- Community management of UCL (e.g. Boat Harbour by the Wellstead community),
- Dieback mapping in coastal reserves,
- Implementation of firebreaks program (including maintenance and rejuvenation) in coastal reserves,
- Installation of composting toilets in high use coastal areas,
- Jetty upgrade at Emu Beach,
- Weed control works,
- Installation of fish offal disposal units at Emu Point Marina and Cape Riche,
- Albany Senior High School (ASHS) Marine Science Program,
- Seagrass re-establishment in Oyster Harbour,
- Establishment of boardwalks and bird hides at Lake Seppings and;
- Employment of 6 rangers to allow for more of a presence on the coast.

4.4.2.3 Shire of Jerramungup

A number of coastal planning and management initiatives have been undertaken for the Jerramungup coast by the LG, other organisations and community. These include:

- Jerramungup Coastal Management Plan (Shire of Jerramungup, 2005),
- Beaufort Inlet and Wellstead Estuary Coastal Plan (Craig, 1994),
- Bremer Bay Coast Aquaculture Feasibility Study (Ecologia, 1996),
- Wellstead Estuary Management Plan (Department of Environment, 2006), and creation of the Friends of the Wellstead Estuary,
- Preparation of Bremer Bay Trails Master Plan,
- Site planning for Fisheries Beach,
- Protection of nesting plovers through use of fences and bollards,
- Installation of viewing platforms, signs, fish cleaning stations, toilets, steps and shelters,
- Installation of information signs that comply with the National Aquatic & Recreational Signage Style Manual (Australian Water Safety Council et al., 2006),
- Implementation of Bremer Bay walk trail (Fisheries Beach),
- Bird surveys in riparian zones,
- Flora and condition survey of Wellstead Estuary Riparian Zone,
- Revegetation (e.g. Johns Cove, Townscape Committee) and native garden guide (Friends of Wellstead Estuary),
- Publication of Fitzgerald Biosphere promotional map,
- Establishment of a NRM trailer and tools (Fitzgerald Biosphere Group),
- Doubtful Islands Area Coastal Plan, Stage 1 (Craig, 1994),
- Bremer Bay Aquaculture Project Ocean Water Circulation System (MP Rodgers & Associates, 1998), and
- Summer Ranger (2008-2009).



Jerramungup by Helen Heydenrych

4.4.2.4 Shire of Ravensthorpe

A number of coastal planning and management initiatives have been undertaken for the Ravensthorpe coast by the LG, other organisations and community. These include:

- Ravensthorpe Coastal Management Plan (Field, 2001a),
- Ravensthorpe District Draft Coastal Management Plan (Craig et al., 1984),
- Starvation Boat Harbour Coastal Management Plan (Van Steveninck & Burkin, 1984) and installation of infrastructure,
- Culham Inlet Management Plan (DoW, 2008),
- Hamersley Inlet Reserve Management Plan (Shire of Ravensthorpe, 1988),
- Hopetoun Foreshore Management Plan (Craig, 1992),
- Powell Point Draft Site Plan (Department of Planning and Urban Development, 1991),
- Shire of Ravensthorpe Coastal Site Development Plans (Craig, 1997),
- Hopetoun Foreshore Site Development Plan (Bennett, 2001),
- Guidance in the Shire of Ravensthorpe Town Planning Scheme for colour of structures,
- Investment in a full time Council Ranger position to oversee camping fee collection, rubbish removal and supervision,
- Installation of information signs that comply with the National Aquatic & Recreational Signage, Style Manual (Australian Water Safety Council et al., 2006),
- Community management of Mason and Starvation Bay,
- Squatter shack removal at Mason Bay, and;
- Coastal management and facilities at West Beach (including access and planting of local native species).



Cape Arid

4.4.2.5 Shire of Esperance

A number of coastal planning and management initiatives have been undertaken for the Esperance coast by the LG, other organisations and community. These include:

- Esperance Coastal Management Plan (Field, 2001),
- Dempster Headland Management Plan (Shire of Esperance, 2003), and joint partnership between Indigenous groups and the Shire of Esperance,
- Riches of the Recherche (Recherche Advisory Group, 1996),
- Duke of Orleans Bay Regional Park Plan of Development and Management (Chalmers, 1983),
- Israelite Bay Management Plan (Esperance Shire Council, 1984),
- Esperance Eastern Coast Planning and Management Report (Craig & Oma, 1984),
- Coastal Management Plan – Munghlinup Inlet Area (Chalmers, 1984),
- Benwenerup Stokes Inlet Management Plan (DoW, 2008),
- Stockyards Reserve Management Plan (in preparation) for use by the Indigenous community,
- Israelite Bay Management Plan (in preparation) and removal of squatters shacks,
- Development of a dieback management strategy (South Coast NRM Inc. in preparation),
- Preparation of a Coastal Projects Plan 2007-2008 (Mitchell, 2007) which forms a basis for project work to help engage Indigenous people in land and marine management,
- Assessment of Quagi Beach (CP Services, 2002),
- Development of Lake Warden Wetlands Curriculum package (Shire of Esperance, Landholders, DEC and South Coast NRM Inc.),
- Involvement of School in monitoring of beaches (e.g. Port Beach, Curtin University and South Coast NRM Inc.),
- Work with local fishing group to manage Kennedys Beach,
- Established caretaker arrangements for Munghlinup and Thomas River,
- Strategic catchment management for the Young River, Stokes, Lake Warden and Bandy Creek catchments,
- Community events, tree planting days (Local Environment Action Forum, Esperance Senior High School Bushrangers and Castletown Primary School), Clean Up Australia Days, Greenie Gobfest at Woody Island,
- Research for Marine Futures as predictive tools,
- Surf Lifesaving Coastal Risk Assessment and installation of standard information and safety signs that meet the Australian Standard Z535,
- Esperance Foreshore Master Plan (Shire of Esperance, 2005),
- Shire of Esperance Trails Master Plan (Transplan, 1999), and
- Shire of Esperance Environmental Weed Strategy (in preparation).

4.4.2.6 Shire of Dundas

The Shire of Dundas does not formally fall under the South Coast Management Group area. However, the SCMG supports consistent planning and management of areas within Dundas. The Dundas coast is remote and relatively inaccessible but has high values in terms of heritage and natural values. A coastal assessment was undertaken in 1989 (Carmen-Brown, 1989). This assessment contributed to the development of the Goldfields-Esperance Regional Planning Strategy (WAPC, 1999). More recently, the Shire of Dundas has completed a Coastal Management Plan (Field, 2001).

4.4.3 Local Planning Strategies & Town Planning Schemes

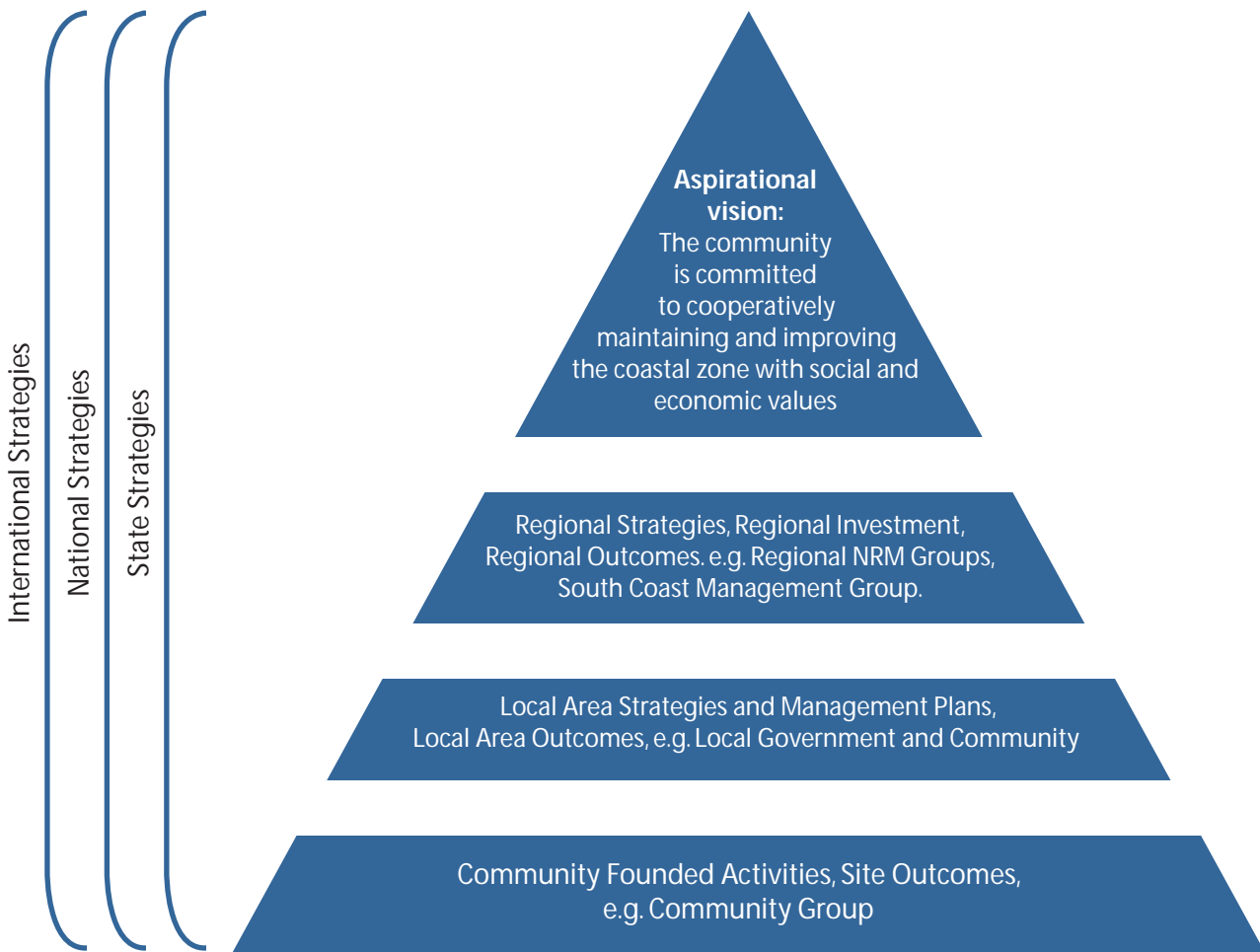
Local Planning Strategies (LPS) are strategic (non statutory) documents which provide a long term planning framework to guide the future development of Local Government areas. These plans are prepared with input from Agencies, organisations and the community.

All Local Governments within the study area have Town Planning Schemes. Town Planning Schemes are statutory documents and maps which guide councils and administrative staff in land-use decision-making within their boundaries. They are based on 'zones', 'reserves' and associated definitions and help reduce the risk of conflict during land use planning. Local Planning Strategies and Town Planning Schemes can provide a conduit for recommendations contained in non-statutory coastal management plans to become either statutory or integrated policy.



Jetty West Foreshore, Esperance

5 PLANNING & MANAGEMENT PATHWAYS TO IMPLEMENTATION



To ensure that our actions have lasting positive impact 'on the ground' in the coastal zone, we need to identify as a community what our vision is for our coastal areas (see section 2).

The vision gives us a common goal to consistently work towards, and needs to be supported by local planning, regional, State, National and International strategies.

Sound strategies, community involvement and appropriate investment lead to positive outcomes for environmental, social and economic values.

Southern Shores 2009 - 2030 contains a series of strategic objectives and actions, with a list of key parties (e.g. LG's, DEC, DoW, community) suggested in brackets. These key players are suggestions only and do not place formal responsibility on the individuals and organisations listed. Rather, their attention is drawn to the important contribution that they may be able to make within their own policy and financial priorities as well as highlighting the areas where potential for collaboration exists.

6 COMMUNITY PARTICIPATION



6.1 Education and Awareness Raising

KEY CONCERNS

'The coastal and marine environment of the South Coast is utilised for a wide range of recreational and commercial purposes and the best custodians of this environment are the communities that use it'

Education has been identified as the key to improving knowledge and creating appreciation in the community of the coastal environment and related management issues.

Coastal education/awareness raising programs are often geographically limited or only possible with the support of a 'local champion'.

Awareness raising plays a key role in the community. Education encourages appreciation and empowerment which is then reflected in improved human behaviour in coastal areas.

Youth need to be empowered so that they are prepared for the challenges that face them and future generations to plan for and manage the coast. Building awareness and confidence will improve attitudes to the coast, behaviour on the coast and in the long term, could improve community and environmental health.

EXISTING ACTIONS

Regional Coastal and Marine Facilitators and Implementation Officers coordinate projects and liaise with community across the South Coast (South Coast NRM Inc.).

South Coast NRM Inc. in partnership with the Department of Fisheries fund a Marine Education Officer to increase general awareness about fisheries and aquatic resource management in Schools and with the broader community including the support in the delivery of the Fisheries Volunteer Program.

South Coast Management Group (SCMG) has successfully operated as a forum for coastal and marine management issues and provided community workshops on coastal management.

Holiday activities for young people are held by South Coast NRM Inc. and the Department of Fisheries to promote coastal and marine awareness.

Coastal and marine community conferences have been held on the South Coast. Southern Ocean Wonders, Wealth and Wisdom – 1998 Torbay; Riches of the Recherche – 1999, Woody Island; Inaugural WA State Coastal Conference – 2001, Esperance; 4th WA State Coastal Conference: Connecting Land Shores and Oceans – 2007, Denmark.

The Western Australian Tourism Commission (WATC) provides information in brochures for visitors on coastal areas and issues, including safety.

Green Skills and Land for Wildlife provide discussion forums and training programs for young participants.

The Albany Senior High School (ASHS) Marine Science Program has been investigating fish and shellfish in the Albany Harbours since 2001. Other high schools (e.g. Esperance Senior High School) also study the coastal and marine environment through biology and outdoor education subjects. School Adopt a Beach and Monitoring Programs in Esperance.

STRATEGIC OBJECTIVE

Education and awareness raising programs will be developed which specifically target the South Coast community and coastal visitors, including youth and indigenous people.

ACTIONS

- A** Develop a South Coast specific coastal and marine interpretation education program and educational resource toolkit, designed to facilitate knowledge transfer to all sectors of the community (SCMG, DoF, South Coast NRM Inc.). **HIGH**
- B** Involve the community in coastal and marine planning and management discussions to facilitate knowledge transfer, awareness raising and promoting stewardship of the coast (AG, DEC, DoW, DoF, LG's, DoP, SCMG, South Coast NRM Inc., Community). **ONGOING**
- C** Involve enforcement staff in training programs which empower them to deal with the public in a positive educational and awareness raising role (LG's, DEC, DoF). **HIGH**
- D** Install robust interpretive and directional signage at appropriate locations to enhance visitor experience and raise awareness (DEC, LG's, Community). **ONGOING**
- E** Investigate the possibility of on-line 'Virtual Coastal and Marine Discovery Centres' to enhance education and awareness of the marine and coastal environments (GEDC, GSDC, SCMG, South Coast NRM Inc., DoF, DEC, WATC, ERTA, GSTA, Educational Institutions, Industry, Community). **MEDIUM**
- F** Financially support the positions of Regional Coastal and Marine Facilitator, Implementation Officers and Marine Education officers) on an annual basis to assist in the perpetuation of coastal and marine education and awareness raising initiatives (AG, State, South Coast NRM Inc., SCMG, LG's, Community, CfoC). **ONGOING**
- G** Positively nurture the awareness that youth have concerning the environment and continue to promote positive involvement of youth in resolution of coastal and marine planning and management issues through educational institutions including primary, secondary and tertiary institutions (DoET, AG, CfoC, DEC, DoF, DoW, DAFWA, SCMG, South Coast NRM Inc., LG's, Community). **ONGOING**
- H** Develop an awareness raising campaign and educational resource toolkit aimed at school children. The focus will be on positive outcomes associated with coastal and marine management (AG, DoET, CfoC, SCMG, South Coast NRM Inc., LG's, DoF, DEC, DoW, Community). **HIGH**
- I** Encourage the publication of informative material which enhances visitor awareness of coastal and marine issues and location attributes (SCMG, South Coast NRM Inc., LG's, Community, AG, CfoC). **ONGOING**





6.2 Coastal Community Support

KEY CONCERNS

To ensure that Coastal Land Managers and the community are able to effectively focus efforts on coastal planning and management, coastal officers such as Regional Coastal and Marine Facilitators and Implementation Officers must be available to provide advice, expertise and support across all coastal lands.

Many coastal support roles are temporary and based on short term contracts.

Community groups are often driven by a 'local champion' and local focus may wane in the absence of dedicated individuals.

Community groups and individuals suffer from 'burn out' and are lost to coastal planning and management.

Community involvement in planning, consultation and implementation is integral to sustainable management of the coastal zone.

Community groups rely on the provision of quality programs such as 'Green Corp' teams to supervise and carry out implementation.

Community groups are daunted by complex grant application processes and onerous reporting requirements.

EXISTING ACTIONS

The Regional Coastal and Marine Facilitator and Implementation Officers promote community awareness of coastal and marine issues and facilitate liaison between community, industry, Local and State Government.

The Regional Coastal and Marine Facilitator and Implementation Officers support community involvement in planning and management of the coast.

Publication of Coastal Planning and Management Manual (WAPC, 2003).

Update of an existing Coastal Specification and Design Manual for coastal infrastructure (South Coast Management Group, Green Skills Inc., CfoC).

The community is active in managing many coastal locations through planning, advocacy and implementing on ground works.

STRATEGIC OBJECTIVE

The community will be supported and encouraged to have greater involvement in coastal zone planning and management.

ACTIONS

- A** Facilitate meaningful public participation and consultation which promotes partnerships between Commonwealth, State and Local Government, industry, commercial enterprise and community to foster co-responsibility in managing the coast (AG, State, SCMG, South Coast NRM Inc., LG's, industry, business, community). **ONGOING**
- B** Lobby Commonwealth and State departments responsible for coastal and marine natural resource management programs such as Caring for our Country and Coastwest, to continue coastal and marine facilitator and support roles on the South Coast (SCMG, South Coast NRM Inc., LG's, Community). **ONGOING**
- C** Provide support to community groups requiring assistance (e.g. technical and legal advice, insurance and administrative costs) where the community group is Incorporated and/or actively undertaking coastal/marine management works on behalf of a land manager (SCMG, South Coast NRM Inc., LG's, DoP, DoW, funding programs). **HIGH/ONGOING**
- D** Encourage funding organisations to review their qualification criteria for coastal towns which may have a small population but high visitor numbers, reduce the lag time between submission and approval to less than 6 months, recognise that employment of project leaders is crucial to success, ensure timing of grants is compatible with LG annual financial timelines and other time critical activities (SCMG, LG's, Community). **HIGH/ONGOING**
- E** Support localised action and empowerment of community groups in coastal management activities with a regional context (SCMG, South Coast NRM Inc., LG's). **HIGH/ONGOING**
- F** Promote opportunities for cross linkages between community groups both locally and regionally to enhance sharing of experiences and information (SCMG, South Coast NRM Inc., LG's). **HIGH**
- G** Clarify participatory roles of stakeholders on a case by case basis (SCMG, South Coast NRM Inc., LGs, Community). **HIGH**
- H** Support the engagement of existing and new volunteers through support of self determination, dissemination of information, education, training and celebration of achievements (SCMG, South Coast NRM Inc. LG's, community). **HIGH**
- I** Advocate for the continued provision of quality labour market programs such as Green Corp teams to assist the community in implementing coastal management (SCMG, LGs, community). **HIGH**
- J** Assist community groups by simplifying funding applications and the application process (AG, State, South Coast NRM Inc.). **HIGH**
- K** Explore networking function for SCMG website (SCMG). **MEDIUM**

6.3 Indigenous Involvement

KEY CONCERNS

Aboriginal people have a strong and ongoing connection to the South Coast's coast and hinterland.

Aboriginal people are respectfully protective of their culture and may not want to share parts of it with the wider community.

The public generally knows little about Aboriginal culture in the South Coast.

Aboriginal groups are concerned that they are not always consulted about plans and activities.

Local initiatives are underway to share and appropriately document Aboriginal culture.

To ensure that the Indigenous community are able to effectively focus efforts on coastal planning and management, cultural and NRM facilitators must be available to provide advice, expertise and support.

Many Aboriginal and coastal support roles are temporary and based on short term contracts.

Aboriginal youth unemployment is significantly high in the South Coast region. This issue is a whole of community concern but many people remain unaware of the difficulties facing Aboriginal youth in the region.

EXISTING ACTIONS

Development of Aboriginal NRM reference groups (Albany Heritage Reference Group Aboriginal Corporation and Esperance Nyungar Aboriginal Corporation).

South Coast NRM Inc. with the Restoring Connections Program and the Aboriginal Coastal and Marine Officers, actively involve Aboriginal people in coastal zone planning and management activities across the South Coast NRM Region.

Great Southern Regional TAFE offers training for Aboriginal people.

Great Southern Development Commission is actively involved in promoting projects which provide employment opportunities for all Aboriginal people.

Cross cultural training for community groups and other organisations is provided by South Coast NRM Inc and other organisations.

South West Aboriginal Land and Sea Council, Southern Aboriginal Corporation, Albany Heritage Reference Group Aboriginal Corporation, Esperance Nyungar Aboriginal Corporation and Gabbie Kylie Foundation (National Trust WA) provide support services and employment opportunities for Aboriginal people in natural resource management.

The City of Albany have developed an Aboriginal Accord and Accord Action Plan.



STRATEGIC OBJECTIVES

Aboriginal people are always meaningfully involved in coastal planning, decision making and implementation.

Aboriginal people are encouraged to share their culture with the wider community to promote greater understanding and acceptance of indigenous values while respecting cultural sensitivities and recognising that some information remains private.

Aboriginal youth will be supported through the development of appropriate training which provides wide-ranging employment opportunities.

ACTIONS

- A** For all projects, consult with local Aboriginal groups early in the scoping, planning and implementation phases of coastal planning and management (guided by 'Consulting Citizens: Engaging with Aboriginal Western Australians' (DIA, 2005) (DIA, LG's, DEC, DoP, DoW, GSDC, GEDC, SWALSC, GLSC, SAC, AAC, AHRGAC, ENAC, ERTA, GSTA, SCMG, South Coast NRM Inc., Community). **HIGH/ONGOING**
- B** Encourage Aboriginal people to promote their cultural values and beliefs, where appropriate, to the wider community through interpretation, involvement and discussion (DIA, LG's, DEC, DoP, DoW, GSDC, GEDC, SWALSC, GLSC, SAC, AAC, AHRGAC, ENAC, ERTA, GSTA, SCMG, South Coast NRM Inc., Community). **HIGH/ONGOING**
- C** Encourage Aboriginal youth involvement in the development of projects, such as trail design development and guiding and other nature-based tourism opportunities which have long term benefits (SCMG, GSDC, GEDC, DEC, DoW, DAFWA, LG's, SWALSC, GLSC, ENAC, AHRGAC, SAC, AAC, SCMG, South Coast NRM Inc., Community). **HIGH**
- D** Encourage Local Governments and other land management agencies to employ Aboriginal people as part of their workforce (and training initiatives) (DEC, DIA, GSDC, GEDC, SAC, AAC, ENAC, AHRGAC, SCMG, South Coast NRM Inc.). **HIGH/ONGOING**
- E** Continue to provide training and work opportunities to Aboriginal youth through educational institutes, businesses, and employment agencies (DIA, SAC, AAC, ENAC, AHRGAC, GSDC, GEDC, DEC, Educational Institutes, South Coast NRM Inc., Community). **HIGH/ONGOING**
- F** Develop opportunities for Aboriginal youth to enter traineeships leading to employment with land management agencies (DIA, SAC, AAC, ENAC, AHRGAC, GSDC, GEDC, DEC, Educational Institutes, Community). **HIGH/ONGOING**
- G** Encourage Aboriginal people to take part or lead involvement in coastal planning and management activities (DIA, SAC, AAC, ENAC, AHRGAC, GSDC, GEDC, DEC, Educational Institutes, SCMG, South Coast NRM Inc., Community). **HIGH/ONGOING**
- F** Seek funding to continue local Cross Cultural Training for organisations, individuals and coastal community groups (South Coast NRM Inc.). **HIGH**
- G** Incorporate indigenous heritage components in coastal projects (South Coast NRM Inc. SCMG, DEC, DIA, ENAC, AHRGAC, GSDC, GEDC). **HIGH**

7 COASTAL ZONE PLANNING, DEVELOPMENT & MANAGEMENT



7.1 Coastal Zone Management Planning

KEY CONCERNS

Many coastal zone management planning documents in the region require review and/or implementation in light of strategic planning (e.g. dieback management, macrocorridor plan).

Site and local planning is needed for some areas, to complement more strategic management plans.

Coastal zone management plans (other than those prepared by DEC under Part V of the Conservation and Land Management Act, 1984) are not statutory and therefore are not always considered when planning decisions are made.

Coastal zone planning recommendations are often not reflected in Local Planning Strategies and Town Planning Schemes.

LGs often constrained in planning due to lack of expertise and resources.

UCL urgently needs planning with community input, to protect values.

EXISTING ACTIONS

Coastal zone planning and management in the South Coast has benefited from the development of Southern Shores 2001 - 2020.

Coastal management plans have been prepared for the Shire of Esperance, Shire of Ravensthorpe, Shire of Jerramungup, City of Albany (Draft plan) and Shire of Denmark with site specific plans in development or existing site plans in review.

DEC managed lands are the subject of statutory area and regional plans, which are under development with existing plans under review (Esperance and Recherche Parks and Reserves Management Plan and Albany Reserves Management Plan).

STRATEGIC OBJECTIVE

A clear, integrated coastal zone planning framework directs sustainable use of the coast, with strong commitment to implementation and statutory links.

ACTIONS

- A** Integrate actions of Southern Shores 2009 – 2030 into coastal zone planning documents (SCMG, South Coast NRM Inc., LG's, DEC, DoF, DoP, WAPC). **ONGOING**
- B** Continue to support the South Coast Management Group through nomination and support of Local and State Government, community delegates and advisers, including youth and Aboriginal people, who have an interest in promoting regional ideals and concepts contained in Southern Shores 2009 – 2030 (SCMG, South Coast NRM Inc., LG's, Community). **ONGOING**
- C** Prioritise actions of Southern Shores 2009 – 2030 through the development of an implementation plan (SCMG, South Coast NRM Inc., LG's, community). **HIGH**
- D** Develop and endorse a regional memorandum of understanding concerning the implementation of Southern Shores 2009 - 2030 (South Coast NRM Inc., LG's, State Agencies). **HIGH**
- E** Audit and review Southern Shores 2009 – 2030 with all relevant bodies on a 5 yearly basis. (SCMG). **ONGOING.**
- F** Pledge on going support to SCMG and stakeholders (South Coast NRM Inc., LG's, State Agencies). **HIGH**
- G** Support Local Governments in the preparation, implementation and review of coastal management plans and site plans on a priority basis or every five years (LGs, SCMG, DoP, South Coast NRM Inc., Community). **HIGH**

- H** Encourage management planning for Unallocated Crown Land and resolution of tenure issues (SCMG, South Coast NRM Inc., LG's, DoP, DEC, Community). **HIGH**
- I** Support DEC in the development of management plans for the Conservation Estate on the South Coast (DEC, Community). **HIGH**
- J** Development planning processes should reflect recommendations made in coastal management plans endorsed by Councils (LG's, WAPC, DoP, SCMG, community). **HIGH**
- K** Local Planning Strategies and Town Planning Schemes should refer to coastal management plans in regard to development proposals on the coast (LG's, WAPC, DoP, SCMG, community). **HIGH**
- L** Local Planning Strategies to recommend review and update of coastal management plans on a 5-10 year cycle (LG's, WAPC, DoP, SCMG, community). **HIGH**
- M** Involve coastal planning expertise when reviewing Town Planning Schemes for coastal towns (LG's, WAPC, DoP, SCMG). **ONGOING**
- N** Seek support from the Western Australian Planning Commission (WAPC) in developing statutory links between Town Planning Schemes and Coastal Management Plans (SCMG, LG's, WAPC, DoP). **HIGH**
- O** Maintain funding to employ 'Coastal and Marine Facilitators' and implementation officers to coordinate and facilitate the ongoing implementation, monitoring and evaluation of Southern Shores 2009 - 2030 (SCMG, LG's, South Coast NRM Inc.). **HIGH**
- P** Encourage and support staff training for best practice coastal management planning, site and recreational planning and implementation methodology (LG's, SCMG, South Coast NRM Inc., DEC, DoP, AG, CfoC, Community). **ONGOING**
- Q** Encourage strong links between Agencies and advisers for important strategic coastal zone planning processes. (WAPC, DoP, DEC, DoF, SCMG, South Coast NRM Inc., LG's, community). **HIGH**
- R** Encourage coastal management plan recommendations to be taken into consideration and reflected in Local Planning Strategies and Town Planning Schemes (LG). **HIGH**
- S** Promote active resource and knowledge sharing between land managers and the community for coastal management planning (SCMG, South Coast NRM Inc., LGs, Community). **HIGH**



7.2 Marine Planning and Management

KEY CONCERNS

Historically, there has not been adequate integration between coastal zone and marine planning. The increasing population and marine users based on the South Coast has associated pressures on the South Coast marine environment (recreation, tourism, fishing, agriculture, mariculture).

People are concerned that changes to marine management could result in displacement of recreation and commercial activities.

There is limited conservation management of the marine environment in the South Coast.

While the marine environment of the South Coast is the subject of research in some localities, the current knowledge base is incomplete regionally.

EXISTING ACTIONS

The Conservation and Land Management Act 1984 (CALM Act) provides for the establishment of marine nature reserves, marine parks and marine management areas in Western Australian State coastal waters.

All marine parks and reserves are legally entrusted to the Marine Parks and Reserves Authority (MPRA). The MPRA provide advice on the development of marine parks and reserves management plans and coordinate annual, periodic and 10 yearly reviews of the implementation of management plans.

DEC investigated the integration of marine and terrestrial conservation reserves in the South Coast in 1998 (Colman, 1998).

The Marine Parks and Reserves Selection Working Group recommended candidate areas for inclusion in a representative, comprehensive and adequate system of marine reserves in 1994 (MPRSWG, 1994). These included:

- Recherche Archipelago from Butty Head to Point Malcolm,
- Margaret Cove to Fanny Cove, including Stokes Inlet,
- Fitzgerald Biosphere area, including Gordon Inlet, St Marys Inlet, Fitzgerald Inlet, Dempster Inlet and Hamersley Inlet,
- Two People Bay Nature Reserve to Cheyne Beach,
- Herald Point, Michaelmas Island and Breaksea Island,
- Eastern Princess Royal Harbour and King George Sound (around Vancouver Peninsula),
- West Cape Howe National Park,
- William Bay National Park.

The Fish Resources Management Act 1994 (FRM Act) provides for the establishment of fish habitat protection areas and fishing closure orders in Western Australian coastal waters. This Act also provides for the sustainable management of target finfish species.

The Wildlife Conservation Act 1950 and Wildlife Conservation Regulations 1970 provide for the protection of marine life such as turtles, seabirds, dolphins and whales.

The Environmental Protection Act 1986 (EP Act) provides for the protection of the marine environment from environmental harm such as pollution.

The Albany Harbours Planning Group developed the Albany Harbours Planning Strategy (BSD, 1997) which guides use of these water bodies through a non-statutory zoning scheme.

Extensive research was coordinated by the University of Western Australia in the Recherche Archipelago. The project, 'Characterising the Fish Habitats of the Recherche Archipelago' was supported by the Esperance community based Recherche Advisory Group (RAG) and a number of private consortiums.

The Recherche Advisory Group (RAG) increases community involvement and awareness about issues relating to the Recherche Archipelago.

South Coast Natural Resource Management Inc. provides support and resources for marine monitoring through the 'Saltwater Treasures' community marine monitoring program.

Albany Senior High School (ASHS) and Esperance Senior High School have developed a successful student oriented Marine Science and Monitoring Program. Other schools and tertiary institutions also study the coastal and marine environment.

The State Government, has prepared the draft South Coast Regional Marine Strategic Plan. This document provides an overview of marine use and interests across the South Coast and suggests a way forward for planning for the marine environment.

The Walpole and Nornalup Inlets Marine Park was established on 8 May 2009. This is the first marine park in the South Coast Region of Western Australia. The Walpole and Nornalup Inlets Marine Park Management Plan 2009 – 2019 (DEC, 2009) will guide management of the reserve for at least the next decade.

Marine research initiative such as Marine Futures with the University of Western Australia (UWA) is providing detailed baseline information to be used in future marine planning and management initiatives.

Proposed Fishing Closure Areas/Fish Habitat Protection Areas include Greens Pool, William Bay National Park, Denmark.

The Government Officers Technical Advisory Group (GOTAG), hosted by DAFWA and South Coast NRM Inc.) is a useful conduit for collaboration on coastal and other planning issues.



Fishing by Xavier Launay

STRATEGIC OBJECTIVE

Marine biodiversity values will be adequately protected, particularly through the sustainable fisheries management and implementation of a system of spatial management tools including Marine Reserves and Fish Habitat Protection Areas.

Marine values will be protected through partnerships between Government, community and stakeholder groups that:

- Enhance sustainable use through cooperation and integration,
- Recognise social, cultural and economic values provided by the marine environment and
- Protect and maintain ecological integrity and biological diversity.

ACTIONS

- A** Encourage evaluation of the 1994 recommendations of the MPRSWG in relation to the identification and establishment of marine parks and reserves in the South Coast region (SCMG, South Coast NRM Inc., DEC, DoF, DoW, DPI, EsPA, APA, community). **HIGH**
- B** Integrate the outcomes of the draft South Coast Regional Marine Strategic Plan in planning for marine parks and reserves in the South Coast region, as appropriate (DEC, DoF, DoW, EPA, APA, EsPA, SCMG, South Coast NRM Inc., Community). **HIGH**
- C** Seek the establishment of fish habitat protection areas or fishing closure orders for marine areas, or for species considered special by the community and which are not included for consideration for marine parks and reserves planning (SCMG, South Coast NRM Inc., DEC, DoF, community). **HIGH**
- D** Involve key stakeholders in marine parks and reserves planning, fish habitat protection area planning and consultation for establishing fishing closure orders (DEC, DoF). **HIGH**
- E** Involve key stakeholders and the community in the process of marine conservation planning and management. (State Government, DEC, DoF, SCMG, South Coast NRM Inc., Community). **HIGH**
- F** Undertake inventories and spatial and temporal assessment of human activities to determine levels of use and investigate how these activities may be affecting the marine environment. Integrate findings into marine management planning (DEC, DoF, DoW, DAFWA, WC, WAFIC, RecFishWest, Industry, SCMG, South Coast NRM Inc., Community). **HIGH**
- G** Continue to promote, encourage and undertake necessary marine research and survey work to determine areas of high biodiversity and important marine habitats along the South Coast (LG's DEC, DoF, CfoC, AG, Educational Institutes, SCMG, South Coast NRM Inc., Community). **HIGH/ONGOING**

7.3 Climate Change

KEY CONCERNS

There is now sufficient scientific evidence that human induced increases in greenhouse gases in the atmosphere are leading to accelerated climate change. Adapting to altered conditions will be the largest challenge of our generation.

Predicted impacts of climate change at the regional scale for the South Coast of Western Australia include:

- reduced and/or more seasonally sporadic rainfall,
- Sea level rise,
- Increased fire risk,
- Impacts on coastal geomorphology and existing development, and;
- Impacts on biodiversity and ecosystem integrity, including the coastal corridor.

The complex interaction between variables contributing to climate change and its impacts are poorly understood by the community and managers in general.

Problems have arisen and continue to arise where development infrastructure such as roads, buildings and pathways are threatened by natural, accelerated or exacerbated coastal processes.

Low lying coastal land and estuaries will be the first land to be impacted by possible erosion events and inundation by sea level rise and/or storm surge.

Consideration needs to be given to natural environmental values which may be affected by climate change.

To date, climate change management adaptation and planning are handled in an ad hoc manner at the local and regional scale, with little guidance from state and national policies.

DoP are undertaking coastal vulnerability testing for some areas in the State.

Aboriginal people have previously adapted to climate change on the South Coast.

EXISTING ACTIONS

Government of WA – release of Western Australian Greenhouse Strategy (2004).

Establishment of Office of Climate Change within the DEC.

WA Marine Science Institute (WAMSI) and others are continuing research into climate processes.

South Coast NRM Inc. are compiling a strategy for a whole of landscape approach to climate change adaptation on the South Coast (Coffey Environments et al. 2009).

Western Australian Planning Commission (WAPC) Statement of Planning Policy No. 2.6: State Coastal Planning Policy sets out the framework for determining development setbacks.

STRATEGIC OBJECTIVES

To plan for and adapt to the impacts of climate change on coastal zone environments and human activities.

To increase awareness and education relating to potential climate change impacts, mitigation and adaptation strategies on coastal systems.

New development on the coast will allow for:

Natural and exacerbated coastal processes to occur;

Sea level rise and coastal recession;

The protection of biodiversity;

The maintenance of visual amenity, natural view sheds and natural contours; and

Recreational needs and opportunities, including public access to the coast.

ACTIONS

- A** Support the preparation of a National framework outlining protocols and policies in relation to climate change. (AG, State, WAPC, DoP). **HIGH**
- B** Support the WAPC and DoP in ensuring discussion of coastal setback requirements in the South Coast Region reflects projected impacts of climate change (SCMG, LG's, Community). **HIGH**
- C** Support the development of regional and local climate change models, risk assessment and adaptation frameworks (SCMG, South Coast NRM Inc., LG's). **HIGH**
- D** Support and fund LG assessment of risks relating to climate change and carry out adaptation planning and implementation (SCMG, South Coast NRM Inc., LGs, AG, State Government). **HIGH**
- E** Incorporate setback guidelines for new coastal development in future reviews of Local Planning Strategies and Town Planning Schemes (LG's, WAPC, SCMG, Community). **HIGH**
- F** Identify coastal shore types (e.g. sandy bays, rocky headlands) and the processes which affect them to determine setback distances based upon shore type and predicted fluctuations in width and height (DoP, LG's, SCMG, Educational Institutions, Community). **MEDIUM**
- G** Seek up to date local information regarding predicted sea-level rise and plan accordingly within projected time frames, based on recognised regional research and modelling (WAPC, DoP, DEC, LG's, Community). **ONGOING**
- H** Essential coastal and marine services, such as Surf Life Saving Clubs, will be considered on the merits of the design of development proposals and stability of the coastal location with preference being given to buildings with adaptable/innovative design (LG's, DoP, WAPC, DoP, SCMG, Community). **ONGOING**
- I** Promote better understanding through education within the community on climate change, it's possible impacts and adaptation options (SCMG, South Coast NRM Inc.). **HIGH**
- J** Seek guidance and leadership from the State and Australian Governments for issues relating to coastal landowners whose land is threatened by rising sea levels (LG, SCMG). **HIGH**
- K** Encourage research and evaluation of the potential impact of sea temperature changes and current variability on known endemic and specially protected marine flora, fauna and fish along the South Coast (e.g. between Albany and Doubtful Bay- southern most latitude of WA) (DoF). **MEDIUM**

7.4 On-Ground Management of Coastal Locations

KEY CONCERNS

Many coastal areas are under increasing pressure due to increases in population, recreation, and tourism.

Improved infrastructure can lead to increased visitation which is viewed by locals as a 'double edged sword'.

Management of infrastructure, while much improved since 2001, has not been addressed or adequately maintained in some areas.

LGs have limited resource capacity to appropriately manage lands under their control.

LGs struggle to maintain existing infrastructure and at present, cannot seek funding for maintenance purposes.

LGs have limited access to coastal/environment management expertise, which inhibits their ability to be proactive in the resolution of coastal management issues.

LG decision making officers may be unaware of coastal management issues because of limited expertise in this area. This may result in inadequate budgetary allocations being made to resolve coastal management issues.

Sometimes the purpose of a reserve is not consistent with management aspirations (e.g. a 'Common' being managed for coastal and recreational values).

Some areas of Crown Reserves and Unallocated Crown Land (UCL) on the coast are in a state of environmental decline due to unmanaged human impacts (SCMG, 2000a).

The Department of Regional Development and Lands mission to administer and develop Crown Land for the benefit of the community, ensuring proper land stewardship, management and sustainable land use has been difficult to achieve due to limited resources (funding and personnel).

Isolation is no longer adequate protection for many areas of UCL as the number of people visiting are higher and there is increased mobility (e.g. more 4WDs and other off road vehicles).

DEC is responsible for managing fire and invasive species in UCL but have inadequate resources to do so.

LGs are often unable to take on management responsibilities of UCL because they lack the resources to do so. This can result in ad hoc and poorly coordinated on ground actions.

EXISTING ACTIONS

Coastal NRM programs such as Coastwest and 'Caring for our Country' Programs can provide funding for coastal management works.

DRDL will assess land management problems if made aware of them but have no direct on-ground support network for managing UCL.

DEC works in partnership with the community and LGs to manage the conservation estate.

DEC has responsibility for managing fire and declared plants and animals on unallocated Crown land and unmanaged reserves outside the metropolitan area, regional centres and townsites. However, resources for this are limited.

Some unallocated crown land (UCL) management has been undertaken by DEC.

Community groups adopt areas of UCL and undertake a management role with support from LG and DEC (e.g. Boat Harbour, Wellstead).

STRATEGIC OBJECTIVE

Management of coastal locations is continually improving to increase each area's capability for sustainable use in the short, medium and long term.

ACTIONS

- A** Recommendations in LG Coastal Management Plans should be prioritised and allocated funds in a realistic time frame (LG's, DRDL, SCMG, South Coast NRM Inc.). **HIGH**
- B** A checklist/inventory of management infrastructure at coastal locations should be developed by each LG and reviewed on a regular basis so that LG staff can develop maintenance plans and predict infrastructure needs. This inventory should be presented to Councils annually to keep them informed so they can be consistent with local coastal management plans (LG's, DRDL, SCMG, South Coast NRM Inc., community). **ONGOING**
- C** Update the South Coast Coastal Management Specification Manual every 3-5 years (SCMG). **HIGH**
- D** LG's, DEC and DLRD to actively pursue funding sources to help manage their coastal locations, especially in high use and remote areas (LG's, DRDL, AG, CfoC, SCMG, South Coast NRM Inc.). **HIGH**
- E** LG's, DEC and Community groups should maximise use of external funding and labour resource opportunities through programs such as Green Corps, Conservation and Land Management Training Programs, Indigenous training programs, Work for the Dole and Australian Trust for Conservation Volunteers (LG's, DRDL, AG, CfoC, SCMG, South Coast NRM Inc.). **ONGOING**
- F** Encourage planning and management for UCL and freehold land, which complements DEC management plans to strengthen coastal corridors (DEC, LG's, SCMG, DRDL, SCMG, South Coast NRM Inc., community). **MEDIUM/ONGOING**
- G** Undertake coastal user surveys to determine the level of use and desired state of facilities for each location and manage locations based on this information (LG's, DRDL, SCMG, community). **HIGH/ONGOING**
- H** Encourage local communities to 'adopt-a-beach' and support management activities they wish to undertake which are consistent with management plans (LG's, SCMG, South Coast NRM Inc., DRDL, DEC, DoW, AG, CfoC, DoP, community). **MEDIUM/ONGOING**
- I** Seek advice from Crown Law regarding liability issues associated with informal management of UCL by LG's and the community (DRDL, WALGA, LG's, SCMG). **HIGH**
- J** Undertake a land use audit of UCL in the South Coast and discuss vesting options with relevant land managers and community (DRDL, DEC, LG's, SCMG, DMP, Community). **HIGH**
- K** Environmental management plans with community input and a clear framework for implementation will be developed and implemented for all coastal UCL in the South Coast (DRDL, DEC, LG's, FESA, SCMG, South Coast NRM Inc., community). **HIGH**
- L** Encourage State Government to review budget allocations to ensure sufficient resources are available for implementation of management planning recommendations for all coastal conservation reserves and UCL (DRDL, DEC, LG's, FESA, SCMG, South Coast NRM Inc., community). **HIGH**
- M** Investigate alternative management arrangements including Aboriginal groups, community, 'Friends of' groups and ecotourism operators as a means of preserving the environmental integrity of UCL (DRDL, DEC, LG's, SCMG, WATC). **MEDIUM**
- N** Advance recommendations of South Coast Regional Management Plan (DEC, 1991-2001) for inclusion of certain UCL to DEC managed estate (DRDL, DEC, SCMG). **HIGH**

ACTIONS

- O** Facilitate knowledge sharing of best management practices between the community, Aboriginal groups, LGs and other organisations (LGs, DEC, DRDL, SCMG, South Coast NRM Inc., community). **ONGOING**
- P** Management activities and management plans to be consistent when viewed in context with other local and regional plans (e.g. dieback, climate change, weed management) (LGs, DEC, community). **ONGOING**
- Q** Promote active resource and knowledge sharing between land managers and the community for coastal management implementation (SCMG, South Coast NRM Inc., LGs, community). **HIGH**



Nares Is Beach by Melanie Price

7.5 Man-Modified Shorelines

KEY CONCERNS

Shorelines that have been modified for development purposes can have a detrimental effect on the natural processes which occur in the land-sea interface as well as create ongoing maintenance expense.

Experience to date has shown it is difficult to design modified shorelines without side-effects or without incurring significant and ongoing costs.

The processes of modifying shorelines, such as dredging, reclamation and sand renourishment require careful consideration and management to minimise impacts.

Erosion of key coastal areas due to human modifications mean that the community bears the cost of a large proportion of remediation works (e.g. Whale World, Emu Point, Hopetoun's West Beach and Esperance Bay).

Man-modified shorelines can detract from the aesthetic appeal of the coastal and marine environment.

Some sectors of the South Coast community feel that local knowledge, feelings, concerns and needs have not adequately been taken into account in decision making processes.

Costs associated with the temporary fixing of erosion problems is a concern.

Costs of remediation drive management options rather than other community or environmental values.

EXISTING ACTIONS

Coastal Engineering Guidelines (Gourley et al., 2004).

State Coastal Planning Policy 2.6 provides guidance on setbacks of development.

Modified shoreline structures may be assessed by the EPA and/or DoP. DoP provides advice on proposed shoreline modification.

Some man-modified shorelines such as marinas and ports provide protection for the development of infrastructure which supports the broader communities' use of the coastal zone.

STRATEGIC OBJECTIVE

Extensive community consultation and reference to world best practice coastal engineering will occur before a shoreline is modified.

ACTIONS

- A** Pursue a philosophy of designing developments to work with natural coastal processes, not against them (WAPC, DoP, EPA, DoP, LG's, SCMG, Community). **ONGOING**
- B** Encourage early, integrated and cohesive discussion between State Government, Local Government and the community to address concerns associated with proposed modification of shorelines prior to modification decisions occurring (DoP, EPA, ESPA, APA, SCMG, LGs, Community). **HIGH**
- C** Encourage environmental impact assessment of proposed man-modified shorelines and include modelling of likely impacts, both for the short (0-100 years) and long-term (>100 years) incorporating climate change predictions and scenarios (LG's, SCMG, Community, EPA, WAPC, DoP, DoW, Community). **HIGH**
- D** Encourage assessment of the visual impacts of proposed man-modified shorelines (LG's, SCMG, WAPC, DoP, DoP, EPA, DEP, Community). **ONGOING**
- E**. Encourage environmental values to drive options to address detrimental man modified shorelines rather than just cost constraints (DoP, LGs, SCMG). **HIGH**



7.6 Coastal Development

Key Concerns

The coast is a preferred area for development because of its inherent recreational and commercial opportunities and transport links. This has resulted in intensive use and modification of coastal environments.

Town Planning Schemes do not usually directly discuss the issue of coastal development and therefore provide little guidance for decision makers when such issues are under discussion.

Non-coastal dependent development has been located on the coast, reducing opportunities for coastal dependent developments that by their nature require coastal locations.

Some coastal development is located in high risk areas (areas susceptible to flooding, erosion, storm impacts etc).

Population growth in the South Coast is inevitable, leading to a greater demand for coastal land and access to the coast.

Coastal towns are often expanded and developed in a linear manner along the coast, resulting in greater impacts on the coastal environment.

Private coastal developments have the ability to restrict public access to public coastal reserves.

In some areas, previous planning decisions have earmarked coastal land for development, which is not necessarily a reflection of current community values or planning best practice.

EXISTING ACTIONS

WAPC Statement of Planning Policy No. 2.6: State Coastal Planning Policy sets out the framework for sustainable development of the coast, including guidance on setbacks.

WAPC Coastal Planning Policy DC 6.1 (Country Coastal Planning Policy) advises that linear expansion of coastal town sites should be avoided.

There is the ability for Local Planning Strategies and Town Planning Schemes to include guidance and policy statements on coastal development issues, including the need for recognition of relevant coastal management plans.

The South Coast Macro Corridor Strategy (CALM, 2006) provides information on important coastal vegetation corridors that can be applied in coastal development planning and decision making processes.

DoW provide advice on development adjacent to estuaries and waterways and have mapped priority flood plains.

The City of Albany have a Greenway Plan (ATA Environmental, 2001) which outlines possible linkages in the landscape. This plan is referenced in the City of Albany Draft Local Planning Strategy (2006).

STRATEGIC OBJECTIVE

The coastal environment will be developed responsibly and sensitively and in keeping with best practice coastal management principles and methods.

ACTIONS

- A** Ensure Local Planning Strategies and Town Planning Schemes consider coastal management strategies and plans by incorporating discussion of issues relevant to coastal development such as corridors, building heights, land clearing, rehabilitation, invasive species, flood plains and setback distances. (LG's, WAPC, DoP, Community). **HIGH**
- B** Identify development on the coast which is located in high risk areas and develop short, medium and long term strategies to deal with risk from climate change or natural processes (LG's, DoP, WAPC, DoP). **HIGH**
- C** Ensure all floodplains of estuaries and waterways are mapped and incorporated into special control areas in Town Planning Schemes (DoW, LG's, DoP) **HIGH**
- D** Determine which developments need to be near the coast and encourage and support the relocation of non-coastal dependent development away from the coast (LG's, DoP, WAPC). **LOW**
- E** Carefully consider the development of visually prominent structures on the coast which may adversely impact the coastal viewsheds, or cast shadows over beach areas (LG's, DoP, WAPC, Community). **ONGOING**
- F** New public structures on the coast will be designed and sited in an ecologically, culturally and aesthetically considerate manner (LG's, WAPC, DoP, DEC, SCMG, Community). **ONGOING**
- G** Avoid linear expansion of town sites along the coast if suitable land is available inland or higher density housing can be accommodated within town sites (LG's, WAPC, DoP, Community). **MEDIUM**
- H** Develop a policy framework that protects foreshore vegetation from removal (e.g. from retaining walls and breakwaters) (DoW, LG's DoP). **HIGH**



Coastal Development at Hopetoun by Melanie Price

7.7 Catchment Management Planning

KEY CONCERNS

The links between catchment management and coastal zone management needs to be strengthened to reflect that catchment management practices ultimately impact on the estuaries, coast and seas.

The community is generally unaware that rising salinity and/or nutrient levels, increased run-off and sediment deposition from cleared agricultural land may eventually affect coastal ecosystems and fresh groundwater supplies at the coast.

Rural, peri-urban and rural small landholdings can create land management issues in coastal areas (e.g. native vegetation removal, fire, nutrient export).

EXISTING ACTIONS

The State Salinity Strategy (Government of Western Australia, 2000).

Kent/Denmark Recovery Catchments – Implementation support and sub-catchment planning (DoW).

Strategic catchment management plans led by catchment groups in partnership with South Coast NRM Inc., DoW, DAFWA, DEC and other agencies for Wilson Inlet, Oyster Harbour, Wellstead Estuary, Torbay Catchment, Stokes Inlet and Culham Inlet.

Private land owners undertake planting of trees to assist in the amelioration of salt affected land and to reduce erosion, with the support of community catchment groups and NRM initiatives.

South Coast NRM Inc. deals with both catchment and coastal issues and the Southern Prospects Strategy (South Coast NRM Inc., 2004-2009) is working towards the integration of resource management and strategic catchment planning and on ground works across the South Coast NRM Region.

South Coast NRM Inc. and SCMG meetings offer a forum for natural resource managers to share information, clarify relationships and forge project relationships.

DoW has a waterway to sea approach to their management activities.

Focused and Rapid Catchment Appraisal Process (DAFWA).

DEC Macrocorridor Strategy (CALM, 2006).

Gondwana Link initiatives for rehabilitation and linking of vegetation from the southern forests to the Nullabor Plain.

River Action Plans (DoW).

STRATEGIC OBJECTIVE

A whole of ecosystem approach to planning and management of land and water resources is encouraged.

ACTIONS

- A** Support the continued development of strong links between the South Coast Natural Resource Management Inc and South Coast Management Group and advisers (SCMG, South Coast NRM Inc., DAFWA, DEC, DoW, DoF, LG's, Community). **ONGOING**
- B** Identify, discuss and encourage on ground works to address catchment issues which may impact on the coastal and marine environment (SCMG, South Coast NRM Inc., DAFWA, DoW, DEC, DoF, DEP, LG's, Community). **ONGOING**
- C** Address relevant catchment issues in all coastal and marine planning and management documents in consultation with catchment managers (LG's, SCMG, South Coast NRM Inc., DEC, DoW, DoF, DAFWA, Community). **HIGH**
- D** Address relevant coastal zone issues in all catchment planning and management documents in consultation with coastal managers (DAFWA, DoW, DEC, DoF, SDMG, South Coast NRM Inc., LG's, Community). **HIGH**
- E** Investigate the existing and potential impacts of rising salinity, nutrient and sediment levels and altered water flow on coastal ecosystems and water supplies (DAFWA, DoW, WC, DoF, DEC, LG's). **MEDIUM**
- F** Continue to raise coastal community awareness about the processes which exacerbate rising salinity levels and altered water flow (DAFWA, DoW, WC, LG's, DEC, SCMG, South Coast NRM Inc.). **ONGOING**
- G** Set management objectives for coastal zone ecosystems which will influence catchment management responses (DEP, DoW, DEC, DAFWA, DoF, SCMG, South Coast NRM Inc., LG's, Community). **HIGH**
- H** Recommend any necessary modifications to management practices in light of research findings (DAFWA, DoW, DoF, LG's, DEC, GSDC, SCMG, South Coast NRM Inc., Community). **ONGOING**
- I** Raise awareness of the links between management of upper catchment, peri-urban and coastal areas to raise awareness of downstream impacts (SCMG, South Coast NRM Inc., Community). **MEDIUM**



7.8 Stormwater Management & Nutrient Enrichment

KEY CONCERNS

The sea, waterways and wetlands are used as receiving basins for stormwater run off from rural and urban areas. Stormwater from these areas often contains nutrients, sediments, and other contaminants.

Stormwater drainage over beaches, estuaries and waterways may cause bank collapse, erosion and increased sedimentation of near shore waters.

Increased nutrient levels and sedimentation to water bodies and the sea may cause changes to natural ecological processes because South Coast waters are generally oligotrophic (nutrient poor).

Many people in urban areas and on farms, do not generally realise the link between over fertilising of their gardens and farms and nutrient enrichment of wetlands, water bodies, waterways and the marine environment.

People are concerned about the pollution and rubbish that makes its way into the coastal zone (cigarette butts, litter, chemicals, nutrients).

EXISTING ACTIONS

State Planning Policy 2.9 Water Resources guides the sustainable management of all water resources (WAPC).

Development of Better Urban Water Management (WAPC, 2008).

Stormwater Management Manual for Western Australia (DoW, 2004 - 2007).

Albany Harbours Catchment Audit (Gunby, unpub. a and b).

River Surveys and Action Plans are developed (DoW).

Denmark Environment Centre has been involved in surveying, fencing and revegetating areas of Denmark and Hay Rivers, Little River and Scotsdale Brook.

Catchment groups across the region are involved in catchment planning, rehabilitation and monitoring.

Denmark LCDC undertake some management of lower Wilson Inlet catchment issues.

Green Skills undertake surveying, fencing and revegetation of waterways.

Urban stormwater demonstration sites (DoW, Shire of Plantagenet, Shire of Denmark, funded by State and Australian Government Programs).

Some communities have implemented awareness raising strategies (e.g. painted marine life and messages on stormwater drains to raise awareness of links between human activities and the receiving environment).

Community programs hold clean up days to raise awareness about litter and stormwater quality.

Increased best practice management methods (engineering, technology and biotechnology) has increased the options for sustainable management of stormwater as a resource.

STRATEGIC OBJECTIVE

Stormwater management will minimise the impacts of nutrients and other pollutants on estuaries and the marine environment.

ACTIONS

- A** Develop and implement water management strategies that treat stormwater as a valuable resource (LG's, DoW, WC, MRD, Community). **HIGH**
- B** Direct disposal of stormwater into marine waters and waterways should not occur without treatment through systems such as filtration/sedimentation basins as described by DoW (2004) Stormwater Manual for Western Australia (LG's, DoW, WC, Community). **HIGH/ONGOING**
- C** Continue to monitor the nutrient load of waterways and nearshore marine areas, particularly waters in close proximity to town sites and urban development (DoW, LG's, Community). **MEDIUM/ONGOING**
- D** Encourage research into how waterways function and interact with the sea and marine life (DoW, DAFWA, DEC, DoF, GSDC, Educational Institutes, SCMG, Community). **ONGOING**
- E** Stormwater management infrastructure should be based on the DoW Stormwater Management Manual for Western Australia (DoW, 2004) (LG's, DoW, WC, Community). **ONGOING**
- F** Increase community awareness of the potential impacts associated with inappropriate disposal of rubbish and contaminants through local drainage and stormwater systems (DoW, WC, LG's, Community). **HIGH**



7.9 Pollutants, Debris and Rubbish

KEY CONCERNS

People are concerned by rubbish left behind by visitors to the coast which has environmental and health risks and reduces the aesthetics of the coastal zone.

Volunteers who clean rubbish from beaches become disheartened by the ongoing impacts of littering.

Tributyltin (TBT) is a toxic compound used in antifouling paints which can accumulate in sediment and enter the food chain, especially around harbours, wharves, jetties and marinas.

Without antifouling paint on ship's hulls, marine organisms would accumulate at a greater rate, possibly resulting in increased transport of foreign organisms, slowing of ships speed and increase of transport costs.

Our knowledge of contaminants and pollutants (e.g. organochlorines, heavy metals, oils, bacteria and TBT's) in marine waters and sediment around harbours, wharves, jetties and marinas is limited in the South Coast and is generally based on localised and ad hoc investigation.

Pollutants, such as nutrients from sewage, can travel to the sea via waterways or groundwater.

Ship wrecks or other accidents may result in oil spills which affect marine mammals, seabirds and intertidal organisms.

Dumping of refuse from foreign and local fishing vessels continues to occur.

Blue bait bands, plastic bags, rope, light bulbs, bottles, fishing lines, fishing tackle and other floating refuse are dangerous to marine life which may swallow them or get caught in them, resulting in injury, drowning, asphyxiation or intestinal blockage.

Rope, plastics and other refuse may get caught in propeller shafts or block water intakes causing damage to vessels and may require, expensive repairs potentially result in a loss of income.

EXISTING ACTIONS

The International Convention for the Prevention of Pollution from Ships (known as the "MARPOL Convention") have internationally recognised guidelines on rubbish disposal (i.e. no plastics thrown into the sea, no garbage discharged within 12 nautical miles from the nearest land). MARPOL requires vessels over 400 tons to develop waste management plans which contain procedures for collecting, storing, processing and disposal of garbage.

WAFIC have developed a Code of Practice for rubbish disposal at sea by commercial fishermen operating in Western Australian waters (to 3nm).

The WA State Marine Pollution Committee comprises all relevant government agencies which have management responsibilities in the Marine Environment.

Many people in the community collect rubbish from beaches during visits.

Inclusion of litter management as a part of the management response in planning documents.

TBT is banned for use on vessels under 25 metres.

The International Maritime Organisation agreed in November 1998 to ban the use of TBT in anti-foulants by 2003, with a 5 year period of phasing out.

Under international law, facilities in ports for the disposal of waste from vessels are required. Facilities must be appropriate for the amount of traffic in the area.

Alternative antifouling paints are being developed and trialled throughout the world.

There is an ANZECC Strategy to Protect the Marine Environment – Code of Practice for Antifouling and in-water Hull Cleaning and Maintenance (ANZECC, Australian Maritime Safety Authority, Maritime Safety Authority of New Zealand, 1997).

Measured levels of anti-fouling contaminants in both Albany and Esperance Port waters are low (EsPA and APA, pers. comm.).

There is a National Plan to combat pollution of the sea by oil and other noxious and hazardous substances under the leadership of the Australian Maritime Safety Authority; This is an industry funded plan (via a levy placed on all vessels visiting Australian ports) that provides training, equipment, materials and support to deal with oil spills.

The State marine pollution plan known as WestPlan – Marine Oil Pollution, under which the DoP implements the National Plan as the Hazard Management Agency for oil spills in WA.

DEC, DoP and Port Authorities work together to protect marine life threatened by oil spills.

DoP provide training and equipment for oils spills which occur outside port waters.

DoF staff frequent many parts of the coast and can assist with equipment and knowledge when required.

The Port of Albany and Port of Esperance have Oil Spill Contingency Plans with training, oil pollution equipment and materials on site and the ability to call on the assistance and support of the National Plan in the event of a spill.

DoW monitor many South Coast waterways for pollutants.

STRATEGIC OBJECTIVES

To maintain the quality of South Coast coastal and marine environments and to minimise the impacts associated with pollutants, debris and rubbish on flora, fauna and beaches.

To reduce adverse impacts of urban and rural catchments on estuarine and coastal water quality.

To minimise adverse impacts from coastal pollution events.

To better understand the impacts of water quality decline on the coastal environment due to pollutants.

ACTIONS

- A** Conduct risk assessments to identify priorities for planning and management of marine pollution and rubbish. (EsPA, APA, DoW, DEC). **HIGH**
- B** Develop monitoring programs to periodically investigate the level of marine pollutants and contaminants in marine sediment around harbours, wharves, jetties and marinas (DEC, APA, EsPA, DoW, Educational Institutes, Community). **HIGH**
- C** Raise community awareness of the risks associated with eating benthic feeding organisms caught or collected around harbours, wharves, jetties and marinas (DoF, DEC, APA, EsPA, DoP, Educational Institutes, Community). **MEDIUM**
- D** Ensure all new marinas and slipways (with retrofitting of older establishments) incorporate antifouling containment and disposal (or treatment) facilities to prevent discharge of contaminants to the sea (DoP, EPA/DEC, DoW, APA, EsPA, LG's, SCMG, Community). **HIGH/ONGOING**
- E** Ensure fill material used in land reclamation at the coast, or near water bodies or waterways, is free from contaminants (EPA, DEC, DoW, LG's, Community). **ONGOING**
- F** Continue to develop areas away from the coast which can receive and biologically treat wastewater (LG's, WC, DoW, DEC, Community). **HIGH**
- G** Locate refuse sites and other potentially contaminating activities a safe distance (agreed to by all relevant bodies) from the coast, water bodies and waterways and/or incorporate treatments to reduce risk of contamination (LG's, WC, DoW, DEC, Community). **MEDIUM**
- H** Continue to provide up to date information and training to groups and individuals who have a role to play in implementation of oil spill contingency plans (AMSA, DoP, APA, EsPA, DEC, DoF). **ONGOING**
- I** Update Oil Spill Contingency Plans and review when new technology or methods become available (AMSA, DoP, APA, EsPA, DEC, DoF). **ONGOING**

ACTIONS

- J** Develop methods which reduce the risk of oil spill at ship fueling facilities (AMSA, APA, EsPA, DoP). **ONGOING**
- K** Continue to raise awareness of professional and amateur mariners about the impacts of rubbish dumping on marine life and coastal aesthetics and increase their knowledge and understanding of relevant laws regarding rubbish disposal at sea (AMSA, DoP, APA, EsPA, DEC, DoF, SCMG, South Coast NRM Inc., Community). **ONGOING**
- L** Ensure adequately sized rubbish receptacles are located at all ports, wharves, jetties, marinas and boat ramps to allow all boat/vessel users to dispose of rubbish quickly and easily upon berthing (APA, EsPA, DoP, DEC, DoF, LG's, SCMG, South Coast NRM Inc., Community). **HIGH/ONGOING**
- M** Promote 'leave no trace, take rubbish home' style rubbish management at all coastal sites (LGs, SCMG, DEC). **MEDIUM**
- N** Promote education about the effects of rubbish and debris on catchment and coastal areas (SCMG, South Coast NRM Inc., DEC, LGs). **MEDIUM**
- O** Encourage beach cleanup activities through management actions and community campaigns (LG, SCMG, South Coast NRM Inc., DEC). **MEDIUM**
- P** Encourage the work of seabird rescue groups and other fauna rescue activities that result from rubbish and debris (Community, SCMG). **MEDIUM**



7.10 Industry & Mineral Extraction

KEY CONCERNS

Industry and mining activities (actual and proposed) have increased on the South Coast in recent years.

Petroleum and gas exploration is proposed to occur offshore from the South Coast in the future and consideration will need to be given to facilities required.

Exporting of resources may require the expansion of Port facilities.

There is concern that industry attracted to the coast by mineral resources could cause direct and indirect impacts (e.g. increased population pressure in coastal areas).

Lime and mineral sand resources are mostly located close to the coast.

Water for industry and mineral processing may need to be drawn from and returned to the sea.

People are concerned that not enough consideration is given to social and environmental values when industry and mining proposals are considered.

EXISTING ACTIONS

DEC has become involved in industry and mineral extraction issues and approval processes.

Some industry, exploration and mining proposals are assessed by EPA with the DEC licensing some industry activities.

Department of Mines and Petroleum (DMP) provide advice on siting of coastal mining activities to reduce impacts.

STRATEGIC OBJECTIVE

Industry, exploration and mining activities on the coast will be environmentally and economically sustainable and supported by best practice management and rehabilitation methods.

ACTIONS

- A** Support planning to determine suitable areas for industry, mining or quarrying which do not impact on the aesthetic and environmental values of the coast (DMP, DRDL, DAFWA, DEC, LG's, SCMG, Community). **MEDIUM**
- B** All industry and mining activity on the coast will be supported by best practice planning implementation and rehabilitation (DMP, EPA, DRDL, DAFWA, DEC, LG's, SCMG, Community). **MEDIUM**
- C** Advocate for adequate consideration of community, social and environmental issues when planning for industry and mining activity in coastal areas (SCMG, Community). **HIGH**

7.11 Preservation of Aboriginal and European Heritage

KEY CONCERNS

As people in the South Coast continue to develop a distinct identity and culture, sites of significant heritage value are important locations to preserve and study to allow a better understanding of our past.

Aboriginal people and culture have strong links to the South Coast country which need to be fostered and supported through coastal zone management to maintain and strengthen links into the future.

Mutual respect for Aboriginal and European culture and lifestyle will enhance a sense of belonging and contribution on the South Coast.

EXISTING ACTIONS

Identification of over 1700 significant Aboriginal sites in the South Coast.

Protection of known and unknown sites under the Aboriginal Heritage Act 1972.

The establishment and support of Aboriginal Reference Groups across the South Coast Region (Albany Heritage Reference Group Aboriginal Corporation (AHRGAC) and Esperance Nyungar Aboriginal Corporation (ENAC)).

LGs generally have Municipal Heritage Inventories which list and classify features and buildings of significance to the culture of people of European descent.

State and local agencies work with Aboriginal communities to identify and protect heritage sites from development and other impacts.

'Restoring Connections between People and Land' Project (South Coast NRM Inc., DEC, LG's, DIA, Aboriginal organisations, community).

Survey of cultural values of priority estuaries and waterways (South Coast NRM Inc., DoW, DIA, DEC, LG's, organisations, community in Goode et al. 2008).

Monitoring of cultural heritage sites is contributing to future management efforts.

STRATEGIC OBJECTIVE

Aboriginal and European heritage in the South Coast will be respected through the preservation and protection of significant sites and features important to each culture.

ACTIONS

- A** Recognise Aboriginal and European heritage and cultural sites in all management and planning documents and subsequent implementation (DIA, AHRGAC, ENAC, GLSC, LG's, DEC, DoW, DoP, SWALSC, SCMG, South Coast NRM Inc., Community). **ONGOING**
- B** Preserve (where possible), protect and promote (where appropriate), historical and cultural sites located on the coast (DIA, AHRGAC, ENAC, SWALSC, GLSC, LG's, DEC, DoW, DoP, DoF, Museums, SCMG, South Coast NRM Inc., Community). **HIGH/ONGOING**
- C** Support the collation, interpretation and sharing of Aboriginal and European coastal stories where appropriate (DIA, AHRGAC, ENAC, GLSC, SWALSC, GLSC, LG's, DEC, DoW, DoP, DoF, Museums, Educational Institutes, SCMG, South Coast NRM Inc., Community). **MEDIUM**

7.12 Native Title

KEY CONCERNS

Native Title has previously been perceived as a constraint to land use and coastal zone planning. The process of determining Native Title claims is often lengthy and not well understood by the general public.

The involvement of Aboriginal people in the management of the coast and seas need not be delayed or omitted by determination of proceedings for native title.

EXISTING ACTIONS

The Western Australian Office of Native Title strives to resolve Native Title claims through negotiation.

The Heritage Protection Working Group develops regional heritage agreements to provide a streamlined framework for future acts and to address heritage protection.

Native Title Tribunal and Federal Court assesses claims on a case by case basis.

Native Title claims exist over the entire South Coast area and the adjacent seas.

Land Councils assist claimants in preparing their cases for determination of native title and therefore facilitate the process of claim assessments.

Guiding document - Working with Native Title (Western Australian Municipal Association, 1997).

STRATEGIC OBJECTIVE

Native Title is an opportunity for Aboriginal people to lead involvement or become involved in management of the land and sea.

ACTIONS

- A** Encourage and support the resolution of native title claims through consistent involvement of Aboriginal people in planning and decision making (DIA, AHRGAC, GLSC, SWALSC, LG's, DoP, DEC, DoF, DoP, SCMG, Community). **ONGOING**
- B** Respect historical and cultural claims of Aboriginal peoples as determined through the Native Title Tribunal and Federal Court (Community). **ONGOING**
- C** Consult Native Title claimants as early as possible to discuss development issues which may affect claimed areas (DIA, AHRGAC, ENAC, SWALSC, GLSC, Land Councils, DoP, LG's, DEC, DoW, DoF, DEP, DoP, SCMG, Community). **HIGH/ONGOING**
- D** Land management agencies should be encouraged to develop Regional Heritage Agreements and Indigenous Land Use agreements with native title claimants where appropriate (DIA, AHRGAC, GLSC, SWALSC, DEC, DoP, LG's, South Coast NRM Inc., Community). **ONGOING**

7.13 Protection of Coastal Landscapes and Views

KEY CONCERNS

Coastal landforms (e.g. valued landscapes, scenic landscapes, dunal landscapes) have not been mapped in detail and their ongoing existence is dependent on protection through local policies and appropriate development decisions.

Landscape features are often greatly altered by vegetation clearance, unmanaged access, provision of public facilities and development.

Most developers clear and level coastal land resulting in the loss of natural contours which are an attractive feature of living on the coast.

Public and private coastal buildings or other structures are not often designed to integrate or blend into natural landscape features or skylines.

Exotic plant species used for landscaping of coastal towns may increase the risk of weed introduction to the coast.

Indigenous coastal plant species are undervalued for their beauty and landscape qualities.

EXISTING ACTIONS

Coastal Management Specification Manual (SCMG, 2005), which is now being reviewed and updated.

A Landscape Planning Manual (WAPC and DoP, 2008).

The Bibbulmun Track and Albany Windfarm, were planned using landscape impact and viewsheds as a major factor in choice of alignments.

STRATEGIC OBJECTIVE

Coastal landforms, landscape features and viewsheds will be preserved to maintain the attractiveness and natural character of the coast.

The use of indigenous coastal plant species, of local provenance, will be encouraged for landscaping in coastal towns.

ACTIONS

- A** Identify areas of high visual sensitivity and incorporate planning mechanisms for their protection (LG's, DoP, LG's, DEC, SCMG, Community). **MEDIUM**
- B** Introduce planning policies which guide the design of buildings and structures on the coast which are sympathetic to natural landscape features and skylines (WAPC, DoP, LG's, SCMG, Community). **ONGOING**
- C** Address the protection and enhancement of aesthetic landscape values during management planning and site works at all coastal locations (LG's, DEC, DoP, SCMG, South Coast NRM Inc., Community). **HIGH/ONGOING**

7.14 Commercial Fishing & Shore-Based Operations

KEY CONCERNS

Gaining knowledge of the marine environment has historically been focussed on commercial species and little is known about the impact of fishing on other species.

Pelicans, seals, sea lions, diving seabirds, whales and dolphins are sometimes inadvertently caught during commercial fishing activities or become entangled in discarded fishing gear.

Leases for the land based part of commercial fishing operations are administered by DEC, DoP or LG's, who might not have the resources to fully consider lease implications.

Land based leases are often old or outdated with no (clear) conditions to state the level of management required.

Problems may occur for land managers if fishers were unable to afford the demolition of buildings, removal of rubbish, debris and adequate waste disposal arrangements or professional advice about rehabilitation when leases are no longer required.

Exotic plant species are often introduced to remote fishing leases resulting in establishment and spread of weed species in otherwise pristine areas (e.g. Buffalo Grass at Cheyne Beach and Cotyledon orbiculata at Trigelow Beach).

Infrastructure associated with the land based part of fishing leases are often located close to the shore without thought of adequate setback to protect the foredune vegetation buffer or to provide good public access.

Commercial fishermen with leases have traditionally maintained some access roads to fishing locations and as some fishing leases are subject to reduced fishing effort, some tracks are deteriorating.

EXISTING ACTIONS

Several commercial fishing lease areas have been closed on the South Coast due to the fishing licences not being required and due to economic reasons.

DoF is currently developing policies requiring that all fisheries be managed in an ecologically sustainable basis.

Fishing interactions with protected species are being dealt with under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* and the *WA Wildlife Conservation Act 1950*.

The development and implementation of the South Coast Estuarine Fisheries Environmental Management System (EMS) and Code of Conduct which was developed in partnership with DoF, the South Coast Estuarine Fisher Licence Holders and WAFIC.

Bycatch reduction projects are currently underway on the South Coast in the purse seine managed fishery (WAFIC, Sea Net Conservation Council, South Coast NRM Inc.).

Commercial fishers often act as custodians of coastal locations.

STRATEGIC OBJECTIVES

Manage potentially conflicting uses in key coastal areas.

Fisheries managers will advocate a holistic and sustainable approach to fisheries management in both State and Commonwealth waters.

Commercial fishing land based lease agreements will be reviewed to ensure the coastal environment is adequately protected.

ACTIONS

- A** Develop an inventory of commercial fishing leases in the South Coast Region for public information (LG's, DoP, DoF, WAFIC, SCMG). **LOW**
- B** Negotiate lease agreements with licensed commercial fishers for shacks or sheds which are illegally located but are known to support fishing effort in adjacent waters if and where appropriate (LG's, DoP, DoF, WAFIC). **HIGH**
- C** Support professional fishers in their efforts to sustainably manage coastal locations associated with fishing leases (SCMG, LGs, WAFIC). **HIGH**
- D** Undertake a study to determine the terrestrial environmental impacts associated with commercial fishing leases along the coast and review environmental conditions imposed in existing leases at the time of their renewal (LG's, DoP, SCMG, DoF, WAFIC). **HIGH**
- E** Consider appropriate setback distances from foredunes to allow coastal processes and public access to be maintained when considering applications for commercial fishing leases (LG's, DoP, DoF, SCMG, Community, WAFIC). **ONGOING**
- F** Prepare and distribute informative and educational material regarding identified environmental impacts to all leaseholders (DoP, LG's, SCMG, DoF, Sea Net, WAFIC). **MEDIUM**
- G** Encourage and support monitoring of fishing yields and impacts of fishing on other marine species (AG, DoF, WAFIC, Educational Institutes, Community). **ONGOING**
- H** Encourage and support bycatch reduction measures (SCMG, DoF, WAFIC). **HIGH**
- I** Encourage and support the development of environmental management systems and codes of conduct for South Coast fisheries (WAFIC, DoF, Sea Net). **MEDIUM**

7.15 Marine Aquarium Species Collection

KEY CONCERNS

There is limited information on the impacts of collection of marine life for aquarium display and mortality in captivity.

EXISTING ACTIONS

Licenses for the collection of marine organisms, including seaweeds and seagrass, are regulated by DoF.

The CALM Act does not permit the collection of 'live' rock, sand, corals, specimen shells or fish species from sanctuary zones, some special purpose zones and marine nature reserves. DoF has established a protocol with the Department of Mines and Petroleum in relation to the extraction of this geological material with regards to the *FRM Act* and *Mining Act 1978*.

DoF requires collectors to keep daily catch and effort records of their activities.

An environmental management system has been developed for the Marine Aquarium Fishery with input from the DoF and the WA Fishing Industry Council (WAFIC).

The Marine Aquarium Managed Fishery has been assessed under the guidelines for the ecologically sustainable management of fisheries and accredited as a Wildlife Trade Operation under Parts 13 and 13A of the *EPBC Act 1999*. This assessment has a high level of focus on seahorse species.

Management arrangements of the Marine Aquarium Fishery include the Marine Aquarium Fish Management Plan 1995 and other subsidiary legislation.

STRATEGIC OBJECTIVE

The marine aquarium collection industry will be managed sustainably and guided by appropriate research to determine impacts and mortality of target species.

ACTIONS

- A** Undertake an inventory of species collected and determine the level of research required to appropriately support and guide the industry (DoF, DEC, SCMG, Educational Institutes, community). **HIGH**
- B** Encourage and support research into the impacts of collection by marine aquarium fishery (DoF, DEC, SCMG, Educational Institutes, community). **HIGH**
- C** Undertake community consultation in relevant areas to access local knowledge and concern regarding aquarium species collection (DoF, SCMG, community). **HIGH**
- D** Prohibit the removal of species which are known to have a high mortality rate in captivity (DoF, community). **HIGH**
- E** Develop species specific management plans for priority species in the aquarium collection industry (DoF, SCMG, community). **HIGH**
- F** Recommend necessary modifications to management practices in light of research findings (DoF, SCMG, community). **ONGOING**

7.16 Aquaculture and Mariculture

KEY CONCERNS

There is currently no regional planning in place to guide the development of the marine aquaculture industry resulting in an ad hoc approach by proponents.

Aquaculture is a growth industry with great potential on the South Coast.

Concern that disease spread might be a risk for aquaculture and mariculture if systems aren't self contained or properly managed.

EXISTING ACTIONS

The DoF works with the DEC to develop Codes of Practice for aquaculture.

DoF is reviewing aquaculture licence conditions, Environmental Monitoring Programs and Management Plans that relate to different species.

DoW have guidelines which relate to aquaculture in Albany Harbours. These are supported by Albany Port Authority, DoF, DoP, DEC and LG's.

Albany Harbours Planning Strategy has designated areas for aquaculture with provisions governing type and management. DoF will be assisting in reviewing the existing lease arrangements in the future.

DoW, Shire of Denmark and Department of Fisheries coordinate using an Aquaculture Development Plan for Wilson Inlet (2000).

Sea-based aquaculture proposals are subject to environmental assessment by the EPA with the approval process requiring consultation with Local Governments and community. A memorandum of understanding (MOU) is proposed to be used for aquaculture referrals (DoF, EPA, DEC).

As outlined in DoF Ministerial Policy Guideline No. 8 (1998) aquaculture applications are assessed and referred to relevant decision-making authorities, community and industry groups which may include, but are not limited to:

DoP	LG
DEC/EPA	DoW
WAFIC	Recreational Fishing Advisory Committee
DoF	Environmental interest groups
Department of Consumer and Employment Protection	

DoF Ministerial Policy Guideline No. 8 'Assessment of Applications for Authorisations for Aquaculture and Pearling in Coastal Waters of Western Australia' is due for review in 2009.

South Coast Management Group draft Aquaculture Guidelines Proposal.

STRATEGIC OBJECTIVE

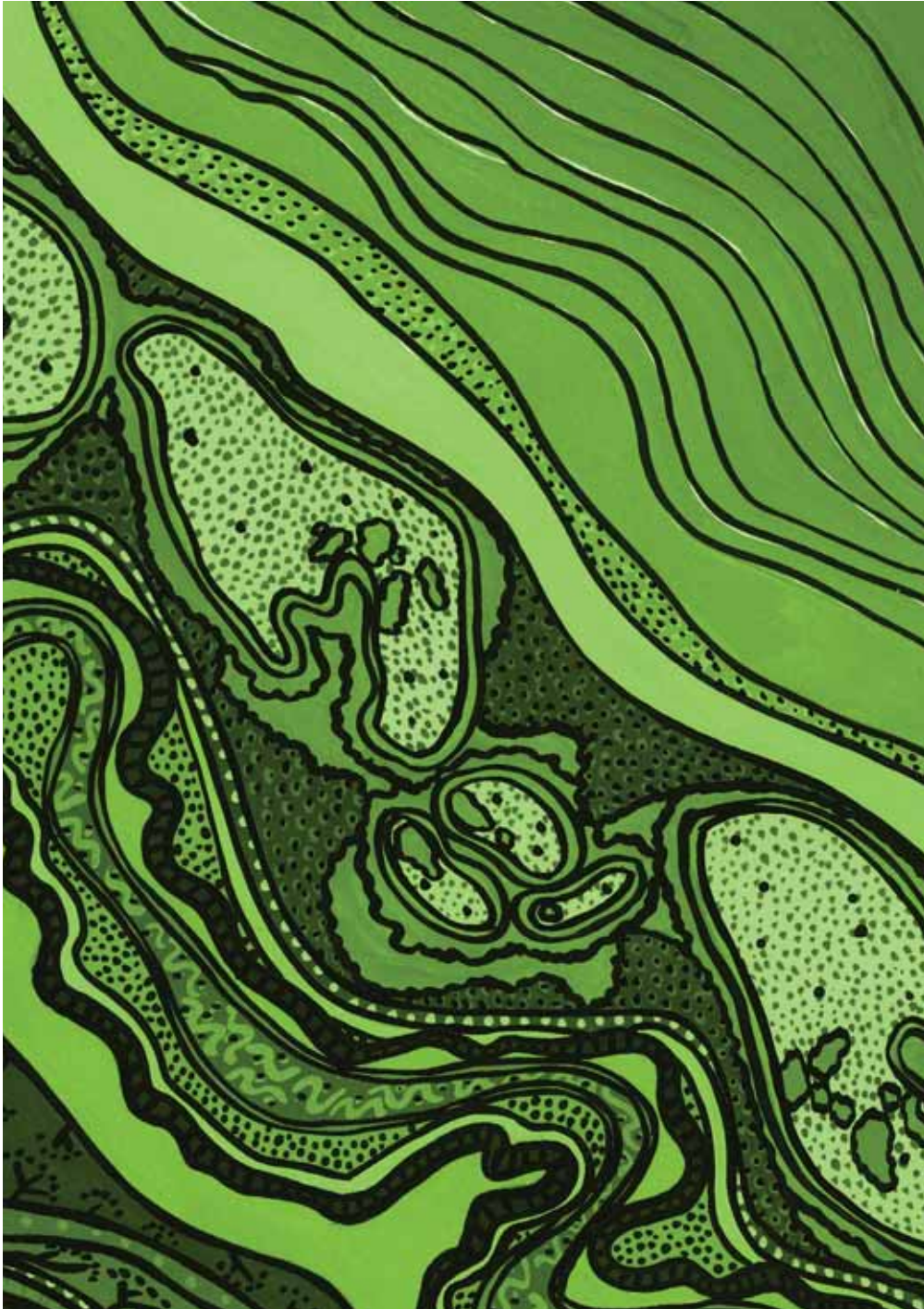
Aquaculture and mariculture will develop as a socially, financially and environmentally sustainable industry which is based on best practice methods.

ACTIONS

- A** Ensure the protection of environmental values has a high priority in development of all mariculture and aquaculture in the South Coast (SCMG, DoF, ACoWA, DEC, DoW, LG's, Community). **ONGOING**
- B** With stakeholder consultation, develop land-based marine aquaculture development guidelines to assist Local Government in assessing land-based marine aquaculture developments (SCMG, LG's, ACoWA, DoF, DEC, DAFWA, DoP, Community). **ONGOING**
- C** Undertake the development of a Regional Marine Aquaculture Development Strategy to identify potential sites, opportunities and constraints associated with aquaculture development. This should be linked with the Australian Government and State Marine Planning initiatives (SCMG, ACoWA, DoF, DoW, DEC, DoP, LG's, Community). **HIGH**
- F** Ensure community consultation is undertaken as part of the process of assessing aquaculture development proposals to ensure there is minimal conflict with established stakeholders (LG's, DoF, WAPC, DoP, DoP, ACoWA, DEC, SCMG, Community). **ONGOING**
- G** Provide technical support to Local Government who may not have adequate resources or expertise to deal with land-based aquaculture proposals at the planning approval stage (DoF, DoP, ACoWA, DEP, DoW, DEC, DAFWA, DoP, SCMG, Community). **ONGOING**
- H** Encourage the development of aquaculture and mariculture environmental management systems (DoF). **MEDIUM**



8 ENVIRONMENT & BIODIVERSITY



8.1 Maintenance of Ecosystem Health and Connectivity

KEY CONCERNS

At present the majority of the population on the South Coast are unaware of their dependence on ecosystem health: the balancing of environmental, economic and social issues and needs.

The almost unbroken coastal corridor of uncleared vegetation from Walpole east across the region to the South Australian border is a vital part of the South Coast Region Macro-corridor network and links the region from west to east.

The coastal vegetation corridor (macro-corridor) has weaknesses such as the thinning of corridor width caused by land clearing, and urban areas.

UCL in the coastal corridor still is not vested with an appropriate land manager with adequate resources for suitable management of these areas.

Fragmentation, fire and invasive species (e.g. dieback, weeds) add to the pressure on the coastal environment.

EXISTING ACTIONS

South Coast Macrocorridor Strategy (DEC, 2006).

Coastal reserves, managed by DEC, constitute approximately 70% of the coast within the Southern Shores 2009 – 2030 study area: ensuring a large proportion of the coastal corridor is protected.

Gondwana Link and Greening Australia initiatives to restore connections between southern forests, woodlands of the interior and the Nullarbor Plain.

BushCare promotes ecosystem health concepts through documents and advice.

Regional Dieback Management Plan focusing on the protection of uninfested areas (Viv Read et al., 2009).

City of Albany Greenways Plan (2001).

Shire of Denmark Greening Plan (2003).

DoW provides advice on clearing of native vegetation in some catchments under the Country Area Water Supply Act 1947.

DEC regulates the clearing of native vegetation under the Environmental Protection Act 1986.



Bibbulmun Quenda by Sheryn Prior

STRATEGIC OBJECTIVES

Ecosystem health will be recognised as essential to the sustainable management of the coastal zone.

The coastal vegetation corridor will be retained and strengthened, with vegetation managed to strategically protect important links in the landscape.

ACTIONS

- A** Ensure economic development of the coastal zone is balanced with environmental and social values held by local and regional communities (LG's, DoP, WAPC, DoP, DEC, DoW, DoF, DAFWA, SCMG, Community). **HIGH/ONGOING**
- B** Seek to provide the community and land managers with resources to implement the macro-corridor project findings and recommendations (AG, DEC, DoP, DAFWA, DoW, DoP, LG's, South Coast NRM Inc., SCMG, Community). **ONGOING**
- C** Incorporate planning for maintenance of the coastal corridor in all Coastal Management Plans, Local Planning Strategies and Town Planning Schemes developed by Local Governments (LG's, SCMG, South Coast NRM Inc.). **HIGH**
- D** Vegetation clearing applications in close proximity to weaknesses or breakages in the corridor should be assessed on a case by case basis with the view of protecting the integrity and connectivity of the corridor (DEC, DoW, DoP, LG's, SCMG, Community). **HIGH**
- E** Ensure significant fauna, flora and threatened vegetation communities are identified and protected throughout the coastal and regional landscape (DEC, LG's, DoP, SCMG, Community). **HIGH/ONGOING**
- F** Investigate the implications of climate change on the vegetation of the coastal and regional landscape (DEC, DAFWA, CSIRO, DEP, GSDC, Educational Institutes, Community). **LOW**
- G** Recommend any necessary modifications to management practices in light of research findings (DEC, DAFWA, DoP, LG's, GSDC, SCMG, Community). **ONGOING**
- H** Encourage and support landscape scale protection and reservation (SCMG, South Coast NRM Inc., DoW, DEC, LGs, Community). **HIGH**
- I** Ensure Protection of healthy areas (e.g. areas not infested by dieback) (DEC). **HIGH**



Starling Trap by Melanie Price

8.2 Biological and Geological Diversity

KEY CONCERNS

The south west of Western Australia is part of an International Biodiversity Hotspot as it contains a large number and richness of plant and animal species (many found nowhere else). However, our knowledge of the biological and geological diversity of the coastal areas of the South Coast Region needs to grow, within and outside of the conservation estate.

Thirty-six animal species, known to occur in the South Coast Region, are listed as threatened. This represents over 75% of the South Coast's fauna species and highlights the fact that the coastal zone is very important for threatened fauna management.

At the national and local level, present and future threats to biological diversity and significant species are considered to be:

climate change,	introduced disease (e.g. dieback)
road works,	low numbers of individuals of some species,
weed competition,	industrial and urban development,
feral animals,	clearing and fragmentation of native vegetation,
fire frequency and intensity.	

recreational activities, agriculture, mining, and forestry (associated impacts such as salinity, vegetation clearing, erosion, eutrophication), (Leigh & Briggs, 1992; Richardson et al., 1996).

Biodiversity values protected in conservation estate are frequently threatened by 'outside' influences from unmanaged land abutting or contiguous with National Parks and Nature Reserves (edge effects).

There is no State legislation for the integrated conservation and management of important geological features, with features outside conservation estate possibly being threatened by development of land and resources.

Local extinctions of plants and animals may contribute to a decrease in the robustness of populations and a decrease in species distribution range.



He's a local by Melanie Price



EXISTING ACTIONS

The Commonwealth Environment Protection and Biodiversity Conservation Act 1999 provides a legal framework to protect and manage nationally and internationally important flora, fauna, ecological communities and heritage places.

Wildlife Conservation Act (1950) provides for the protection of Western Australian native flora and fauna.

Draft Biodiversity Conservation Strategy for WA (DEC, 2006).

DEC, DoW and DoF provide assistance to LG's and DoP when they consider conservation issues on Crown Land.

Land for Wildlife Program raises awareness, supports and encourages the protection of biodiversity values on private lands.

National Trust of Australia and DEC have perpetual covenanting schemes to promote the protection of biodiversity values on private land.

DAFWA has a '30 year' covenanting scheme to protect natural vegetation on private farm land. City of Albany Greenways Plan (2002).

Shire of Denmark Greening Plan (2003).

The National Strategy for the Conservation of Australia's Biological Diversity (Commonwealth of Australia, 1996).

Terrestrial fauna of the South Coast – a review (Gilfillan, 2000).

Vegetation and Flora of the South Coast – a review (Craig, 2000).

Geology, Landforms and Mineral Extraction in the South Coast – a review (Green & Wetherley, 2000).

Many flora and fauna surveys have been carried out as part of DEC and community research and monitoring programs. This also includes organisations such as Green Skills for Integrated Tree Cropping (ITC).

Community driven 'Gondwana Link' project seeks funding to purchase extensive areas of private land to restore ecological connectivity which will enhance biodiversity values in degraded areas.

DEC manages a network of reserves which protect biological diversity, with over 2.4 million hectares of National Parks and Nature Reserves in the State, which form a system of protected areas for the conservation of flora and fauna. Many of these reserves include the coastal zone.

DEC is implementing threatened species recovery plans for Noisy Scrub-bird, Gilbert's Potoroo, Ground Parrot, Bristlebird, Chuditch, Dibbler and Threatened Flora on the South Coast.

Other recovery plans and activities (e.g. for Carnaby's black cockatoo by Birds Australia) on private and public land at a landscape scale.

Regional dieback mapping and planning for protection of uninfested areas (Viv Read et al., 2009).

STRATEGIC OBJECTIVE

A comprehensive understanding of biodiversity and geodiversity will guide conservation and protection of flora, fauna and geological features in the South Coast.

ACTIONS

- A** Ensure the system of protected areas is adequate and representative and is maintained to retain and restore the diversity, health and productivity of coastal ecosystems (DEC, LG's, DoP, Community). **HIGH**
- B** Continue to undertake and support the study of ecological relationships of flora and fauna throughout the Region (DEC, DoW, DAFWA, Educational Institutes, Community). **ONGOING**
- C** Support DEC management of threatened species (LG's, DoW, DAFWA, community). **ONGOING**
- D** Encourage community participation in flora and fauna surveying of the South Coast (DEC, DoW, DoP, LG's, Bc, LfW). **ONGOING**
- E** Support the documentation of the regional distribution of poorly known taxa (e.g. invertebrates, bats and fungi) and focus ecological studies on plant and animal communities to increase our understanding of ecosystem function, with the aim of maintaining functional biodiversity (DEC, DoW, Educational Institutes, Community). **ONGOING**
- F** Continue to increase the community's awareness of threats to wildlife and species most at risk with emphasis placed on educating school children (DEC, South Coast NRM Inc., DoF, LfW, Bc, CfoC, AG). **ONGOING**
- G** Develop a regional scale vegetation management strategy for the South Coast inclusive of islands, coastal dunes, coastal hinterland, conservation estate and private landholdings (South Coast NRM Inc., SCMG, DEC, DoW, DEP, DAFWA, DoP, LG's, Community). **MEDIUM**
- H** Ensure human activities occurring in close proximity to protected areas are compatible with management objectives outlined in planning and management documents (LG's, DEC, DoP, DEP, SCMG, South Coast NRM Inc., Community). **ONGOING**
- I** Encourage and support research which assists in providing better understanding for the sustainable management of biodiversity and the current and potential impacts associated with human activities and natural processes (DEC, DoW, DoF, DAFWA, LG's, South Coast NRM Inc., Educational Institutes, Community). **ONGOING**
- J** Identify important geological features in the coastal area, including islands, reefs, cliffs, headlands, hills and mountains and take measures to protect them (DEC, DMP, Educational Institutes, Community). **MEDIUM**
- K** Recommend any necessary modifications to management practices in light of research findings (DEC, DoP, LG's, DoW, DAFWA, SCMG, Community). **ONGOING**

8.3 Invasive Species Management

KEY CONCERNS

Invasive species include terrestrial and aquatic plants (weeds), animals (introduced/feral) and diseases (e.g. dieback) which are competitors, predators, pathogens and parasites of native species. Invasive species disrupt natural systems and contribute to the loss of biodiversity.

Dieback is a severe threat to biodiversity for susceptible species and ecosystems (spread through recreational activities, road works, drainage etc.).

Weed species which are beginning to proliferate along the South Coast are those which are highly opportunistic in local conditions, or which are extremely difficult to control e.g. Bridal Creeper, Blackberry, Arum Lily, Box Thorn, Sydney Golden Wattle, Victorian Tea Tree, Pyp Grass, Watsonia, Taylorina and *Cotyledon orbiculata*.

The ecology of some offshore islands may be threatened by weed invasion.

Exotic plants continue to be introduced to many coastal areas particularly in landscaping projects.

Weeds are often introduced through random dumping of garden refuse.

Weeds proliferating in remote areas can pose a threat to nearby National Parks and Nature Reserves because remote areas are usually unmanaged in this regard.

Weed management is essential if biodiversity is to be maintained, especially after fire.

Invasive species control is challenging, time consuming and requires ongoing commitment.

Invasive species control on a large scale is expensive and time consuming.

Unwanted pets, in particular cats, are sometimes dumped in bush areas.

Foxes and cats are decreasing numbers of small to medium weight range mammals.

Rabbit grazing results in reduced ground cover and changes in ecology communities. Feral goats, pigs camels, deer and horses also cause problems.



Lowlands Turning Out



EXISTING ACTIONS

Australian Weeds Strategy (Australian Government, 2006).

State Weed Plan for Western Australia (State Weed Plan Steering Group, 2001).

DAFWA has a key role in the control of Declared Animals such as deer, starling, sparrows and other exotic birds.

DAFWA facilitate management of the impact of widespread feral animals including pigs, foxes, rabbits, wild dogs and camels.

DAFWA has a Declared Plant list which includes gorse, blackberry and aquatic weeds.

City of Albany Environmental Weeds Strategy (CoA, 2001).

Shire of Esperance Environmental Weeds Strategy (in prep.).

Esperance Weeds Strategy (Shire of Esperance and South Coast NRM Inc., 2009).

City of Albany 'Guidelines for Rehabilitation Plantings using Native Species', 2008.

Weed action groups and coastal community groups are active at coastal locations around Denmark, Albany, Bremer Bay, Hopetoun and Esperance.

Local and State Government Agencies along with South Coast NRM Inc. have funded weed eradication programs.

Development and distribution of the Western Weeds and Southern Weeds publications.

Private landowners and catchment groups are participating in weed and feral animal eradication programs to protect native vegetation, native bush, livestock and agricultural land.

The Agricultural Protection Board issues notices for Declared weeds and provides advice to landowners on feral animal control methods.

The Western Shield program (baiting) aims to reduce fox populations primarily on significant areas of DEC managed estate and UCL in south-west WA. Other programs include 'Red Card for Red Fox' and community projects (e.g. organised shooting).

'Project Dieback' is a cross regional NRM initiative of South Coast NRM Inc., undertaken with DEC and the State Government's Dieback Consultative Council (DCC) which is identifying areas of high conservation value for dieback protection investment.

DEC and LG management plans are addressing dieback spread.

DEC provides advice on dieback management to all land managers.

Boot cleaning stations are situated on many DEC controlled walk paths.

City of Albany have boot cleaning stations on some of their nature trails.

DEC protects some critically endangered flora populations from dieback by spraying with phosphite.

Dieback Working Group (2000) has developed 'Local Government Guidelines' for management of dieback on LG reserves.

Development of a South Coast Regional Dieback Management Plan and development and implementation of local hygiene and management strategies (South Coast NRM Inc., Project Dieback, DEC, LG's).

The Fitzgerald River National Park has been identified as a priority area to be protected from dieback.

STRATEGIC OBJECTIVE

Protection, management, eradication and monitoring measures will be continued and reviewed to limit the impacts of introduced terrestrial and aquatic organisms and disease in the South Coast region.

ACTIONS

- A** Coordinate and support invasive species activities and information collection in the coastal zone (South Coast NRM Inc., DEC, DAFWA, LG's, SCMG, community). **HIGH**
- B** Seek funding for the implementation of invasive species management strategies in the coastal zone (South Coast NRM Inc., DEC, DAFWA, LG's, SCMG, community). **HIGH**
- C** Publish information on priority environmental weeds and management recommendations relating to the coastal zone (South Coast NRM Inc., DAFWA, LG's). **MEDIUM**
- D** Develop and maintain information packages on invasive species relating to the coastal zone (South Coast NRM Inc., DAFWA, DEC, LG's). **MEDIUM**
- E** Review requirements to maintain or improve regional capacity to detect and eradicate invasive species in the coastal zone (DAFWA, LGs, DEC, South Coast NRM Inc.). **HIGH**
- F** Undertake selected invasive species mapping (e.g. weeds, dieback) surveys of priority coastal land and islands (LG's, DEC, DoP, DoW, DAFWA, community). **MEDIUM**
- G** Include consideration of invasive species during site and management planning for all coastal land and islands (LG's, DEC, DoP, DoW, DAFWA, SCMG, community). **HIGH**
- H** Continue to undertake and promote feral animal eradication and control programs throughout the South Coast Region (DEC, DAFWA, LG's, SCMG, South Coast NRM Inc., community). **ONGOING**
- I** Raise community awareness of the problems caused by the dumping of unwanted pets and the impact of cats on native fauna, including, shorebirds (DAFWA, LG's, DEC, SCMG, South Coast NRM Inc., community). **ONGOING**
- J** Support studies into eradication methods for feral cats, rabbits and foxes (DAFWA, DEC, LG's, SCMG, community). **ONGOING**
- K** Encourage and support land managers to undertake training in the recognition and control of invasive species (LG's, DEC, DoP, SCMG, South Coast NRM Inc., community). **ONGOING**
- L** Promote liaison between landowners and DEC about dieback management if infected land is abutting or contiguous with conservation estate (LG's, DoP, DEC). **ONGOING**
- M** Support the implementation of the South Coast Regional Dieback Management Plan 'Project Dieback' and incorporation of dieback management strategies into other coastal zone planning and management activities (South Coast NRM Inc., Project Dieback, DEC, LG's, DRDL). **HIGH/ONGOING**
- N** Support the focus on protection of areas that are currently free of dieback (South Coast NRM Inc., DEC). **HIGH**
- O** Support educational programs to raise awareness about dieback, including protection of 'green' (uninfested) areas to minimise spread through recreation and road works (LG, DEC, SCMG, South Coast NRM Inc.). **HIGH**
- P** Support and encourage cross tenure cooperation on feral animal and weed control projects (DEC, DRDL, LGs, Community). **HIGH**
- Q** Regional and local dieback management plans will be used to inform future management implementation (South Coast NRM Inc., DEC, LGs, community). **HIGH**
- R** Support DAFWA eradication program for starlings on the South Coast (SCMG, South Coast NRM Inc., community). **HIGH**

8.4 Coastal Rehabilitation

KEY CONCERNS

Dune stability in the region is being undermined in some areas by inappropriate vehicle, motorcycle, quad bike and pedestrian access.

In some areas of the coast, vegetation is contracting because current rehabilitation methods are ineffective at stabilising exposed sand.

Coastal rehabilitation is often labour intensive and costly with mixed results due to the dynamic environment.

Labour resources are difficult to secure, especially in remote areas.

Rehabilitation of the coast is a low priority for some land managers.

EXISTING ACTIONS

The WAPC has developed a Coastal Planning and Management Manual (2003) which discusses coastal rehabilitation processes, techniques and plant species.

The South Coast Management Group has prepared a Coastal Specification Manual (SCMG, 2005) which is currently being reviewed.

Many sites along the South Coast have been successfully rehabilitated.

Some degraded areas of the coast, which have been protected from inappropriate access have rehabilitated naturally.

Grant programs encourage the use of local native species in rehabilitation works.

Coastwest, Caring for our Country and other NRM funding is available for rehabilitation projects.

The City of Albany has a policy that requests that local provenance species are used for rehabilitation.



Major Mitchell Cockatoos at Eyre by Melanie Price

STRATEGIC OBJECTIVE

Rehabilitation of damaged coastal environments will be undertaken to enhance the capability of the coast to support sustainable use.

ACTIONS

- A** Rehabilitation plans should be developed and implemented for damaged coastal environments based on recommendations and prioritisations in coastal management plans (LG's, DEC, DoP, SCMG, South Coast NRM Inc., community). **ONGOING**
- B** Minimise disturbance to coastal vegetation, particularly areas which are highly susceptible to wind and water erosion e.g. fore dunes (LG's, DoP, DEC, DoP, WAPC, SCMG, community). **ONGOING**
- C** Encourage and support LG works staff and community to undertake coastal rehabilitation training (LG's, SCMG, Educational Institutions, South Coast NRM Inc., community). **ONGOING**
- D** Land Managers should identify and establish areas which can be accessed for use as 'brush banks' for the sourcing of brushing material for coastal rehabilitation (LG's, DEC, DoP, community). **MEDIUM**
- E** Encourage that any coastal vegetation removed or pruned by development on the coast is delivered to an area requiring brush for stabilisation with appropriate support given to its distribution at the location (LG's, DoP, SCMG, South Coast NRM Inc., community). **ONGOING**
- F** Private and LG nurseries will be encouraged to grow local native coastal plants for rehabilitation of the coast (LG's, SCMG, South Coast NRM Inc., community). **ONGOING**
- G** Assist the development of community based not for profit nursery operations to provide coastal plant species for rehabilitation purposes (LG's, SCMG, South Coast NRM Inc., community). **LOW**
- H** Promote research into the propagation of coastal plant species (LG's, Educational Institutes, Community). **MEDIUM**
- I** Avoid the use of exotic plants which have the potential to escape into the natural coastal environments, particularly in towns in close proximity to coastal reserves, National Parks and Nature Reserves (LG's, DoP, DEC, Land Developers, SCMG, Community). **HIGH**
- J** Encourage land managers and the community to share experiences and lessons learnt during rehabilitation projects to allow for continual improvement (SCMG, LG's, DEC, Community). **MEDIUM**
- K** Ensure that dieback hygiene measures are considered as part of all coastal rehabilitation activities (LG, Community, DEC, DRDL). **HIGH**
- L** Ensure that weed hygiene and management measures are considered as part of all coastal rehabilitation activities (LG, Community, DEC, DRDL). **HIGH**

8.5 Fire Management

KEY CONCERNS

Fire management on coastal land requires careful planning as loose sandy soils can be particularly prone to erosion when vegetation is removed.

There is considerable knowledge about the impact of fire on flora and fauna in the coastal environment, however, this knowledge is not complete and not readily accessible.

Poor fire management may result in threats to life and property values.

Frequent wildfires can lead to adverse habitat changes and some significant species require habitat that has been unburnt for a long time.

Infrequent burning can lead to high fuel loads which may result in intense wildfires.

Aboriginal people used to burn areas for hunting or as they moved camp, resulting in a mosaic of burning across the landscape.

Traditional burning is hindered by other considerations such as fragmentation of land and weed invasion.

EXISTING ACTIONS

LGs have set specifications and requirements for firebreak construction on private land.

LGs impose fire bans to reduce the risk of unplanned fire.

DEC undertake hazard reduction burning in some areas of conservation estate.

DEC and FESA provide advice and assistance to land managers in regard to fire management.

LGs have a statutory responsibility to establish and maintain local Bush Fire Brigades.

Gas barbecues are provided at many coastal locations to reduce the risk associated with open fires and destruction of native vegetation.

FESA, DEC and DoP have developed an MOU which facilitates cooperation with fire management on UCL.

STRATEGIC OBJECTIVE

The risk of wildfire on coastal land will be reduced by the development and implementation of appropriate fire management strategies.

ACTIONS

- A** Continue to record and map fire history in coastal reserves (DEC, FESA, DoP, LG's, community). **ONGOING**
- B** Improve knowledge on the impacts of fire on flora and fauna (DEC, Educational Institutes, community). **MEDIUM**
- C** Fire Management Strategies to be developed and implemented for all coastal land in consultation with community and relevant stakeholders (LG's, FESA, DoP, DEC, SCMG, community). **MEDIUM**
- D** Recommend necessary modifications to fire management practices in light of research findings (FESA, DEC, DoP, LG's, community). **MEDIUM**

8.6 Island Management

KEY CONCERNS

The Recherche Archipelago and other islands on the South Coast have been identified as areas of high biodiversity, about which only limited information has been collected.

On-ground management works on islands are costly and limited due to distance from management bases and the difficulties associated with landing on islands even in calm weather. Some islands remain as Unallocated Crown Land (most islands are Nature Reserves).

Island Nature Reserves are not generally managed as recreation areas but most accessible islands are being used for recreation.

Human activities on many islands have resulted in the introduction of feral animals, plants and diseases which may impact on ecological processes.

EXISTING ACTIONS

DEC are currently developing an Esperance and Recherche Parks and Reserves Management Plan. Some islands in close proximity to the mainland conservation estate are included in National Park or Nature Reserve management plans.

DEC's South Coast Regional Management Plan (1992 – 2002) details proposals of islands to be added to DEC managed estate (CALM, 1992).

Some islands are used by DEC as translocation destinations for threatened fauna.

The community group, Recherche Advisory Group (RAG) is proactive in promoting sustainable management of the Recherche Islands and marine areas of Esperance.

STRATEGIC OBJECTIVE

Islands of the South Coast will be managed to protect ecological processes and to continue to build knowledge about these unique environments.

ACTIONS

- A** Appropriate funding should be sought to promote, encourage and support management and research efforts on all islands in the South Coast (DEC, Educational Institutes, SCMG, South Coast NRM Inc., community). **ONGOING**



Islands by Melanie Price

8.7 Coastal Wetland & Estuary Protection

KEY CONCERNS

Some coastal wetlands and estuaries are being degraded through sedimentation, wild fires, stormwater drainage, nutrient, herbicide and pesticide run-off and rising salinity and groundwater levels.

Many wetlands and their associated flora and fauna remain understudied with their ecological links not fully understood.

The majority of wetlands have no management plans guiding their protection.

Development and recreation pressures are intense around coastal wetlands and estuaries.

The opening of estuary sand bars has become a contentious issue in the South Coast with some sand bars being breached without appropriate consideration of environmental variables.

No guidelines or protocols are in place for the management of most estuaries and there is confusion over who is responsible or has jurisdiction in undertaking decision making concerning estuary management and bar management regimes.

EXISTING ACTIONS

The DEC has a Wetlands Conservation Policy for Western Australia (Government of Western Australia, 1997). It provides broad objectives for wetlands, waterways, estuaries and shallow marine areas. It also provides an implementation strategy specifically for the management of wetlands in WA.

South Coast Wetland Evaluation and Mapping (DoW, 2007).

Wetland planning and management program (Green Skills, South Coast NRM Inc.)

Management planning and implementation for significant estuaries on the South Coast such as Wellstead, Culham and Stokes (DoW, South Coast NRM Inc., ERF).

The Lake Warden system and Lake Gore Coastal Reserve are Ramsar wetlands.

The Lake Warden system is part of a strategic catchment and recovery plan initiative (Esperance Regional Forum (ERF), DEC, Shire of Esperance, South Coast NRM Inc.).

Wetland management is incorporated into catchment planning activities, with funding for fencing, revegetation and groundwater monitoring (DoW, South Coast NRM Inc.).

Information leaflets are produced to provide information and raise awareness of South Coast region wetlands (e.g. DoW, community).

Land development proposals that affect wetlands are referred to DEC/ DoW to ensure consideration of significant wetland suites and minimise the impacts of proposed development.

Many of the regions estuaries and coastal wetlands are recognised as being of National and International significance.

Wilson Inlet Sandbar Policy (WIMAG, EPA, DoW, WC, SoDe).

Wetland rehabilitation in Denmark.

A number of important baseline studies were undertaken to provide information for management of estuaries and coastal lagoons in the 1980's (Hodgkin (Ed), 1984; Hodgkin & Kendrick, 1984; Hodgkin & Clark, 1987; Newbey, 1987; Hodgkin & Clark, 1988a; Hodgkin & Clark, 1988b; Hodgkin & Clark, 1988c; Hodgkin & Clark, 1989; Hodgkin & Clark, 1990a; Hodgkin & Clark, 1990b). These studies have made significant contributions to management and planning for estuaries and coastal lagoons in the South Coast.

Fencing of wetlands and watercourses to protect from livestock has been undertaken by Green Skills across the region (with funding via South Coast NRM Inc.).

STRATEGIC OBJECTIVE

Coastal wetlands and estuaries in the South Coast will be managed to maintain natural values, ecological processes and linkages

ACTIONS

- A** Encourage the mapping, evaluation and monitoring of coastal wetlands and estuaries on the South Coast (DoW, DEC, LG's, SCMG, South Coast NRM Inc., community). **ONGOING**
- B** Develop management plans for priority coastal wetlands and estuaries which are impacted by human activities (DoW, DAFWA, DEC, LG's, SCMG, South Coast NRM Inc., community). **HIGH**
- C** Assist private landholders to manage or use wetlands on their property in a sustainable manner (DoW, DAFWA, DEC, LG's, South Coast NRM Inc., community). **ONGOING**
- D** Raise community awareness about the ecological and cultural values of coastal wetlands and estuaries (DoW, DAFWA, DEC, LG's, SCMG, South Coast NRM Inc., community). **HIGH/ONGOING**
- E** Prioritise, plan and implement the management and rehabilitation of wetlands on the South Coast (DoW, DAFWA, DEC, DoP, LG's, South Coast NRM Inc., Landowners, Community). **MEDIUM**
- F** Incorporate wetland protection policy into Local Planning Strategies and Town Planning Schemes (DoW, DEC, DoP, LG's, Landowners, Community). **HIGH**
- G** Undertake mapping and analysis of bar openings for all estuaries/inlets to improve the understanding of sand movement, water flow and to assist in developing management protocols (DoW, DEC, DoP, LG's, Community). **HIGH**
- H** Identify priority estuaries and develop policies and protocols to guide management of artificial sand-bar openings and sand-bar management regimes (DoW, DEC, DoP, LG's, DoF, Community). **HIGH**
- I** Promote a non-interference approach to sand bar management regimes except under exceptional circumstances outlined in established protocols (DoW, DEC, DoP, LG's, SCMG, South Coast NRM Inc., Community). **ONGOING**
- J** Ensure infrastructure (roads, tracks, houses, boat ramps etc.) are not located within areas likely to be flooded by estuaries or which restrict natural or artificial sand bar opening regimes (LG's, WAPC, DoP, DoW, Community). **ONGOING**
- K** Give high priority to planning, management and rehabilitation of Ramsar wetlands (LG, DEC). **HIGH**

8.8 Protection of Roosting, Foraging and Nesting Shorebirds on Mainland Shores

KEY CONCERNS

Shorebirds and seabirds roosting, foraging and nesting on mainland shores, inclusive of estuarine shorelines, are being disturbed by vehicles, animal exercising and human intrusion, resulting in a decline in some populations.

Shorebirds and seabirds are often cryptic and therefore not easily seen. Flightless chicks, in particular, are well camouflaged and their defence mechanism is to freeze, making them more vulnerable to impacts such as vehicles operating off-road.

There is concern that migratory birds which travel to Australia to feed during summer are being disturbed, increasing their energy expenditure and possibly impacting on their survival during their long flight back to their northern hemisphere breeding grounds.

Protection and management of coastal wetlands and estuaries is important to maintain populations of some shorebirds.

EXISTING ACTIONS

The Hooded Plover Project is supported by Birds Australia and aims to identify and protect important areas for Hooded Plovers (includes annual surveys).

Community volunteers and coastal groups undertake regular bird monitoring activities across the South Coast (Denmark, Albany, Bremer Bay, Hopetoun and Esperance).

Lake Warden Recovery Management Plan (DEC, 1999-2009), is currently being implemented at this Ramsar site in Esperance.

The Albany Seabird Rescue Group educate the community, monitor seabird populations and rehabilitate injured and stranded seabirds in the Albany area.

Shorelines of estuaries are protected within national parks and nature reserves to the low water mark.

Beach Nesting Birds Manual (Maguire, 2008).



Tagging

STRATEGIC OBJECTIVE

Shorebirds that roost, forage and nest on mainland shores will be protected from disturbance.

ACTIONS

- A** Encourage research to identify biology and key mainland habitats that are commonly used (or most important to shorebirds) for roosting, foraging or nesting (LG's, Dec, Birds Australia, Educational Institutes, community). **HIGH**
- B** Incorporate protection of shorebird roosting, foraging and nesting sites in coastal management planning (LG's, DEC, DoP, DoW, Educational Institutes, SCMG, South Coast NRM Inc., community). **ONGOING**
- C** Raise community awareness of the importance of particular sites for shorebird roosting, foraging or nesting (target vehicle and animal owners) (LG's, DEC, DoP, DoW, Birds Australia, CfoC, AG, SCMG, South Coast NRM Inc., community). **ONGOING**
- D** Prohibit vehicles and animal exercising in key shorebird habitat (LG's, DEC, DoP, DoW, community). **HIGH**
- E** Support the Hooded Plover Project and other seabird monitoring to capitalise on educational opportunities in regard to protection of shorebirds (LG's, DoP, DEC, SCMG, South Coast NRM Inc., community). **HIGH**
- F** Support initiatives such as Seabird Rescue that raise awareness about seabird protection, and monitor and rehabilitate injured seabirds (DEC, LG's, DoP, DoF, SCMG, South Coast NRM Inc., community). **ONGOING**
- G** Recommend necessary modifications to management practices in light of research findings (DEC, DoW, DoP, LG's, SCMG, South Coast NRM Inc., community). **ONGOING**
- H** Determine risks to birds and implement most appropriate management approach (LG's, DEC, Birds Australia, Educational Institutes, community). **HIGH**



Muttonbird Surf School

8.9 Protection of Intertidal Organisms

KEY CONCERNS

Intertidal species are defined as fish in the *Fisheries Resources Management Act 1994*, and management of these organisms may include the involvement of DoF.

Intertidal organisms are considered to be fully protected under the *Wildlife Conservation Act (1950)* in National Parks and nature reserves which are vested to the low water mark.

Most National Parks and Nature Reserve Management Plans do not directly consider management of the intertidal zone.

There is some uncertainty over DEC's jurisdiction in regard to the licensing and regulating for the collection of edible or commercially exploited species from the intertidal areas of National Parks and nature reserves.

Local Government Management Plans do not generally consider management to the low mark and intertidal zone in coastal reserves.

Use of vehicles in the intertidal zone has significant impact on the organisms that live there (Schlacher, 2008).

It is likely that intertidal organisms are important to shorebirds as food.

EXISTING ACTIONS

Wildlife Conservation Act 1950, Regulation 42- A person shall not take any fauna whether protected or not on any Nature Reserve.

DoF and DEC liaise on issues related to fishing in National Parks and Nature Reserves and on matters relating to the *Conservation and Land Management Act 1984*.

DoF manage the commercial collection of intertidal organisms for the entire Western Australian coast including DEC Reserve, LG Coastal Reserve and UCL. However, within national parks and nature reserves, licenses and permits would be required from both DoF and DEC.

STRATEGIC OBJECTIVE

Protect intertidal organisms within the coastal zone.

ACTIONS

- A** Recommend a review of the *Wildlife Conservation Act 1950* and *Fisheries Resources Management Act 1994* in regard to the protection and management of intertidal marine organisms which are contained within National Parks and Nature Reserves (DEC, DoF, SCMG, community). **MEDIUM**
- B** Encourage and support the protection and sustainable management of intertidal organisms within the coastal zone (SCMG, LG's, DEC, DoF, South Coast NRM Inc., community). **ONGOING**
- C** Encourage and support research into the biological composition and ecosystem function of intertidal areas throughout the region (DEC, DoF, LG's, GSDC, Educational Institutes, SCMG, South Coast NRM Inc., community). **ONGOING**
- D** Undertake a study to determine the impacts on biodiversity and ecological processes from the fishing/collection of intertidal organisms and river borne nutrients and sediments within the coastal zone (DEC, DoF, DoW, LG's, Educational Institutes, SCMG, Community). **MEDIUM**
- E** Recommend necessary modifications to management practices in light of research findings, including control of vehicles on key beaches (DEC, DoF, LG's SCMG, community). **ONGOING**

8.10 Vessel Anchoring

KEY CONCERNS

Little information is currently available about the impacts on marine life and marine habitat from commercial and recreational vessels anchoring at Esperance Bay, King George Sound and other South Coast anchorages.

Seagrass meadows may be affected by recreational boats.

EXISTING ACTIONS

Commercial vessels are anchored in areas which suit their size, draft and steerage with the largest vessels being anchored in deeper water (~30m) and smaller vessels in shallower water (~12m) in the Port of Albany.

Port of Esperance has a designated anchorage area with a depth of at least 25m for commercial vessels. The harbourmaster provides incoming vessels with preferred coordinates for anchoring.

Commercial vessels 'walk' their anchor to limit damage to the benthos and to avoid anchor chain jamming.

STRATEGIC OBJECTIVE

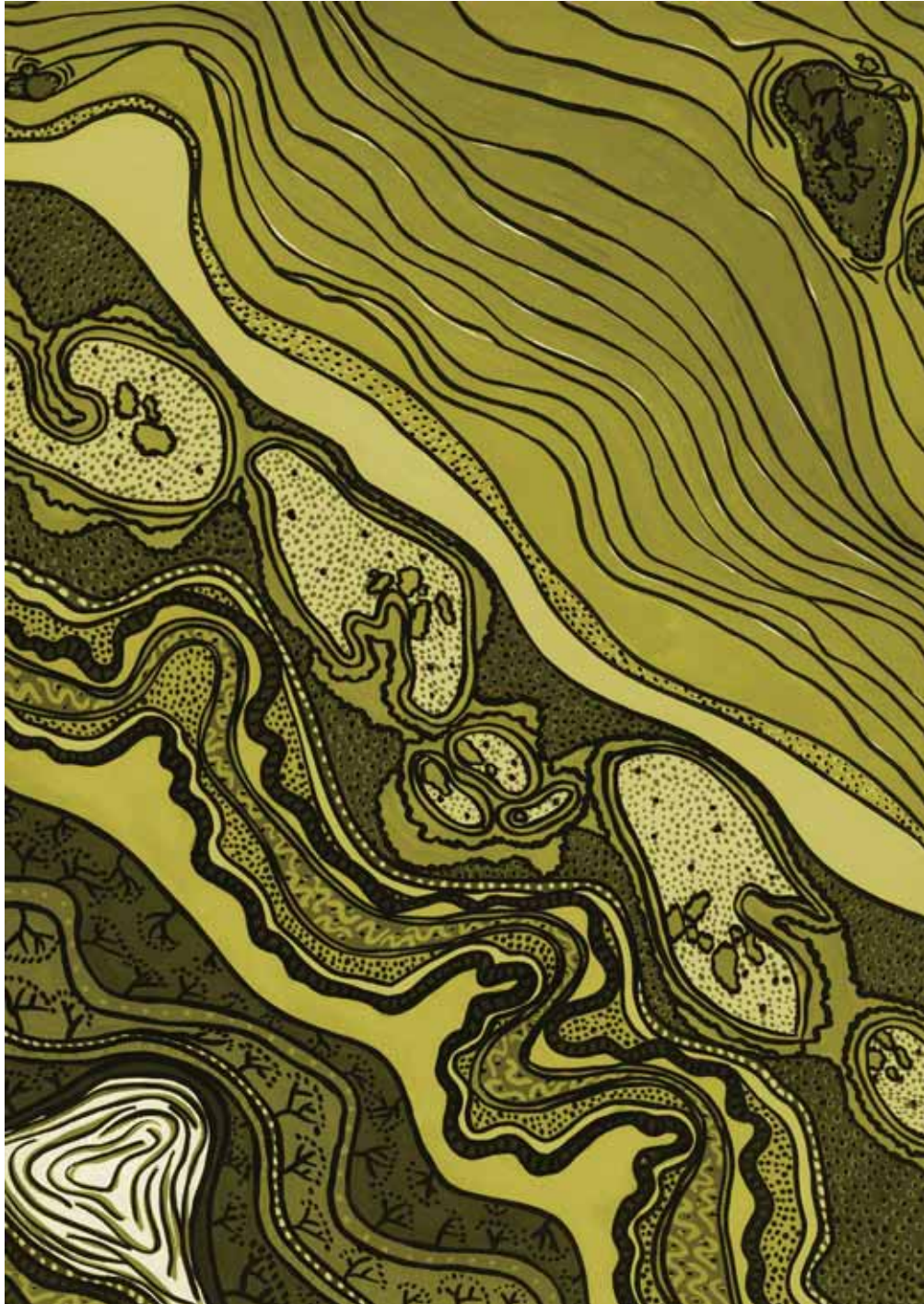
Commercial and recreational vessel anchoring will be managed to reduce the impacts on benthic and pelagic marine communities.

ACTIONS

- A** Determine the impact of anchoring vessels on the benthos in King George Sound, Esperance Bay and other South Coast anchorages (APA, EsPA, DoP, DEP, GSDC, Educational Institutes, Community). **MEDIUM**
- B** Continue to promote methods which reduce damage to the benthos from anchor chain drag (APA, EsPA, DoT, SCMG, community). **ONGOING**
- C** Support the installation and use of environmentally friendly mooring at South Coast locations (APA, EsPA, DoT, SCMG, community). **ONGOING**
- D** Promote education of boat users to avoid anchoring in seagrass and other sensitive environments (DoT). **MEDIUM**



9 COASTAL RECREATION AND HUMAN USE



9.1 Pedestrian and Dual Use Access to the Coast

KEY CONCERNS

People with impaired mobility need equitable access to be provided in key coastal areas, where coastal geomorphology allows.

Coastal walk tracks and paths provide access to desired areas. However, if unmanaged or poorly placed, they can result in degradation (soil erosion, loss of vegetation cover, introduction of weeds and disease).

EXISTING ACTIONS

The Western Australian Disability Services Act, 1993 requires State Government agencies and Local Governments to develop and implement a disability access and inclusion plan.

City of Albany, Shire of Jerramungup and the Shire of Esperance have a Trails Master Plan.

City of Albany, Shire of Jerramungup and Shire of Esperance are working towards the linking and extension of dual use paths along the built areas of their coast e.g. Middleton Beach Walkway, Wellstead Estuary Walk Trail and Esperance Coastal Walk.

STRATEGIC OBJECTIVES

Universal access will be provided wherever practicable on the coast.

Managed walk tracks and formal dual-use paths, will be planned, developed and maintained, where appropriate, to facilitate sustainable access to the coast.

ACTIONS

- A** Incorporate universal access options to the coast and sea in Disability Service Plans, coastal management plans and a regional coastal management specification manual (SCMG, LG's, DWA, community). **HIGH/ONGOING**
- B** Develop planning to support the construction of walking tracks and dual-use paths in coastal towns to facilitate sustainable access to the coast (LG's, SCMG, South Coast NRM Inc., community). **MEDIUM**
- C** Maintain walking tracks and dual-use pathways to safe standards (LG's, community). **HIGH/ONGOING**
- D** Consider the designation of some coastal tracks for multiple use by pedestrians, horses and bicycles; manage via a code of conduct (LG's, SCMG, community). **MEDIUM**



Silent Sentry

9.2 Coastal Infrastructure and Facilities

KEY CONCERNS

Increasing numbers of people are visiting the coast, with the expectation of well located, designed and maintained facilities.

Some people would prefer to see some coastal locations remain low key with little or no infrastructure.

Visitors are increasingly using large/high impact recreational vehicles (motor homes, 4 wheel drives, caravans, camper trailers, motorbikes, quad bikes).

Visitor infrastructure is costly to design, implement and maintain.

Improvement in facilities attract greater numbers of visitors with resulting implications for management and pressure on coastal sites.

Local Government may not be able to source sufficient funds for maintenance from its rate base alone.

The natural features and openness of much of the South Coast can limit safe boat launching access.

Many boat launching areas (formal and informal) are not positioned to provide protection in unfavourable conditions.

Provision of parking for vehicles and trailers is a significant problem at many boat ramps, including informal launching sites.

An increasing awareness of the risk of skin cancer in the community has led to the need for shelters or shade facilities to be provided at key locations.

Public composting toilets are priority facilities at key coastal locations, if they can be adequately maintained.

There are impacts across the South Coast associated with the dumping of black water from chemical waste systems from caravans and motor homes into composting toilets.

Septic based toilets have the potential to impact on the environment, particularly groundwater, if not constructed and maintained appropriately.

There are health risks associated with the unmanaged disposal of body waste and grey water at coastal locations.

Some coastal locations are being stripped of surrounding vegetation to fuel open fires.

Open fires at coastal locations increase the risk of bush fire.

Open fires mostly occur at remote camping locations away from fire containment services and organisations.

Some infrastructure is expensive to maintain (e.g. jetties, large staircases) and may be removed rather than maintained because of the high costs involved.

EXISTING ACTIONS

DEC, LGs and the community provide facilities along the coast.

Guidance for planning, design and construction is described in SCMG's Coastal Management Specification Manual (2005). This manual is currently being updated by Green Skills.

WAPC/DoP Coastal Planning and Management Manual (2003) contains specifications for coastal works.

DoP can provide input into Local Government processes regarding design and siting of boat ramps and marine infrastructure.

Local Government can apply for funding to construct boat ramps through the Recreational Boating Facilities Scheme (DoT).

The Shire of Denmark has prepared the Denmark Strategic Boating Plan (Estill & Associates, 2007). Shade shelters exist at some popular coastal locations, mainly grassed picnic areas associated with town beaches.

Picnic areas are often sited under the shade of existing trees.

Shade for the public – Guidelines for Local Government (Cancer Foundation of Western Australia, 1999).

Local Governments can, in some cases, seek funding assistance from State and Commonwealth grant schemes for the construction of toilets.

Coastal infrastructure has been funded and constructed across the South Coast with the help of the SCMG, LG's, community groups, South Coast NRM Inc., Coastwest and other funding avenues.

Composting toilets have been constructed and successfully maintained at many coastal locations.

Free gas or electric barbecues are provided at some popular coastal locations.

STRATEGIC OBJECTIVE

Coastal infrastructure will be designed, constructed and maintained to a high standard to ensure that long term viability is sustained.

ACTIONS

- A** Determine the need for infrastructure through the development of management plans, in consultation with the community and with consideration to sustainability, funding and maintenance (LG's, DoP, community, SCMG, South Coast NRM Inc.). **HIGH/ONGOING**
- B** Encourage the community and land managers to share technical knowledge and update best practice and methodology (SCMG, LG's, DoP, DEC). **HIGH**
- C** Use best practice design for infrastructure as per Coastal Management and Specification Manual (SCMG, 2005) (LG's, DoP, SCMG, community). **HIGH/ONGOING**
- D** Update and review the Coastal Management and Specification Manual (SCMG, 2005) every five years (SCMG). **HIGH**
- E** Incorporate maintenance costs in the allocation of access expenditure (LG's, DoP, community). **HIGH**
- F** Review formal and beach boat launching sites in all LG's and determine problems, if any, associated with those sites including provision of vehicle and trailer parking and safety issues (LG's, DoP, DEC, community). **HIGH**
- G** Remediate problems identified through above review in consultation with DoP (LG's, DoP, community). **ONGOING**
- H** Seek funding through the Recreational Boating Facilities Scheme (DoP) to identify potential sites for construction of formal boat launching facilities throughout the South Coast (LG's, DoP, community). **MEDIUM**
- I** Erect appropriate signage in coastal reserves to provide information including site name, risks, facilities and activities (according to Australian Coastal Safety Guidelines, Surf Lifesaving Australia, 2007), (DRDL, LG's, Sea Rescue Groups, FESA, SCMG, South Coast NRM Inc., community). **HIGH**
- J** Audit the condition of all key infrastructure on the South Coast to ensure it is safe and well maintained (LG's, DoT, SCMG, community). **HIGH**
- K** Encourage the removal of unsafe infrastructure where appropriate (DoT, LG's, community). **HIGH**

9.3 Management of Recreational Activities

KEY CONCERNS

The exercising of animals, such as dogs and horses, on beaches is sometimes in conflict with other passive uses and disturb fauna (e.g. shorebirds).

Pets are not allowed in Nature Reserves and there are generally no animal exercising zones in National Parks in the South Coast Region.

The exercising of animals in appropriate areas is an important and valid coastal use.

There are legitimate coastal recreational activities such as picnicking, swimming, surfing, fishing and beach walking that can cause conflict with other recreational activities and may cause environmental damage or harm to other beach users if they occur in inappropriate areas.

Some people consider 4 wheel driving as a recreational pursuit, rather than just a means of transport.

More coastal users are taking part in 'extreme activities' (4 wheel driving, use of off road vehicles, rock climbing, tow surfing, jet skiing, sand boarding, kite surfing, wind surfing, para-gliding etc.) that may cause environmental damage or harm to other beach users if they occur in undesignated areas.

Inappropriate recreational activities can spread dieback and weeds, or cause damage such as erosion.

EXISTING ACTIONS

Some beaches have been zoned to support animal exercising in most LGs e.g. Middleton Surf Beach, Goode Beach (CoA).

Most LG's provide signage, bags and bins for dog waste.

Extreme activities are regulated in some Local Government reserves.



Albany Natural Trail Riders by Melanie Price

STRATEGIC OBJECTIVES

All coastal recreation activities will occur in coastal areas where conflict between users can be minimised and managed and activities will not cause environmental damage or safety risk to other users.

Animal exercising, particularly horses and dogs, will occur in coastal areas where conflict between users can be minimised and managed.

Areas will be designated for extreme activities where it can be demonstrated that the activity will not cause environmental damage or safety risk to other users.

ACTIONS

- A** Identify coastal areas in management plans where animal exercising can be zoned, regulated and supported, with Community input (LG's, community). **HIGH**
- B** Develop by-laws which recognise designated animal exercising areas and the conditions assigned to them (LG's). **HIGH**
- C** Erect clear and informative signage regarding location of animal exercise areas at relevant beaches (LG's, SCMG, community). **HIGH**
- D** Advocate for the development of state-wide Codes of Conduct for key recreational activities (LG's, SCMG, DoP, DEC, DoW community). **HIGH/IN PROGRESS**
- E** Identify areas which have potential to sustainably support key recreational activities including extreme activities, with community input (LG's, Community). **HIGH**
- F** Erect clear and informative signage regarding key recreational activities including extreme activities, with community input (LG's, SCMG, DRDL, DEC, DoW community). **HIGH**
- G** Raise community awareness of the impacts of key recreational activities including extreme activities in inappropriate coastal areas (LG's, AG, CfoC, SCMG, Community). **HIGH**
- H** Rehabilitate coastal areas affected by inappropriate recreational usage including extreme activities (LG's, DEC, DRDL, AG, CfoC, Community). **ONGOING**



Eagles Nest Track

9.4 Management of Vehicles on the Coast

KEY CONCERNS

During community consultation for Southern Shores 2009 - 2030, vehicle access to beaches (4WD, motorbikes and quad bikes) was the most raised issue of concern and represents one of the major land use conflicts in the coastal zone.

During consultation, the community perception was that on-road licensed 4 WD's cause a significant amount of damage in coastal areas, with a lesser but still substantial amount of damage from motorbikes, quad bikes and other unlicensed vehicles.

Some people consider driving on the coast and beaches as a legitimate means of access when it is done sensitively and with proper knowledge.

The number of 4WD vehicles in Western Australian has increased significantly over the last 30 years.

The use of off-road vehicles ¹(ORVs, i.e. non road registered 4WDs, motor bikes etc.) are valid recreational pursuits. However, these activities can be detrimental to the coastal environment and potentially dangerous to participants and others, when not appropriately managed.

Off-road vehicles and road registered 4WDs may spread dieback, cause erosion, disturb nesting, roosting and foraging shorebirds.

Use of unregistered and road registered vehicles on public land presents the community with safety and liability issues.

Land managers are generally unable to adequately police the illegal or inappropriate use of vehicles, particularly in remote locations.

Maintenance, improvement or rationalisation of vehicle access off road is one of the most challenging coastal management issues.

Improving coastal access track conditions is costly and may result in an increase in coastal usage.

Banning vehicles operating off-road in one area may move the activity to another coastal area.

Local Government can nominate prohibited or permitted areas under the Control of Vehicles (Off-road Areas) Act 1978, but most are unwilling as they are unable to appropriately enforce it.

Some coastal tracks were historically constructed and maintained by commercial fishers to access fishing areas. In some areas where commercial fishers are no longer so active, these tracks are deteriorating.

Many coastal tracks are created for no apparent reason, leading to increased damage to the environment.

EXISTING ACTIONS

Unregistered off road vehicles are prohibited from use on City of Albany coastal reserves and DEC managed estate.

Some LGs have prohibited off-road vehicle access onto popular beach areas (e.g. Cheyne Bay, City of Albany).

The SCMG (2004) provided input into the review of the Control of Vehicles (Off-Road Areas) Act 1978 regarding environmental impacts, administration, enforcement and safety issues, including a recommendation that licensed 4 wheel drives need to be included in controls.

1. Definition: off road vehicle means a vehicle which is not licenced, deemed to be licenced, or the subject of a permit granted under the *Road Traffic Act 1974*

The Control of Vehicles (Off-road Vehicles) Act 1978 allows for the:

- gazettal of areas for the purpose of off-road vehicle use;
- restriction of off-road vehicle use to gazetted areas or private property;
- registration of vehicles other than those licensed under the Road Traffic Act 1974 (i.e. allows unregistered vehicles to be registered for use in gazetted areas);
- enforcement of safety measures such as helmets and seatbelts;
- use of vehicle by drivers over the age of 8 years;
- issue of infringement notices to non-compliers.

Access track rehabilitation and rationalisation works have been undertaken at numerous locations across the South Coast region.

Standardised signage has been erected at some sites to indicate status of dieback.

STRATEGIC OBJECTIVE

The environmental and social impacts of vehicles, both registered and unregistered, will be reduced by improved education, management and regulation.

ACTIONS

- A** Advocate for a State and Regional approach to management of operating vehicles off-road, including road registered four wheel drives (SCMG, LGs, community). **HIGH**
- B** As a part of coastal management planning, undertake mapping of off-road tracks and determine which tracks should be closed and rehabilitated, which should be managed to facilitate access and which should be considered for development to more formal road access (i.e. gravel or bitumen) (LG's, DoP, DRDL, MRD, AG, CfoC, DEC, SCMG, South Coast NRM Inc., community). **HIGH**
- C** Seek funding to implement off-road track planning and management (LG's, DoP, DRDL, DEC, MRD, AG, CfoC, SCMG, South Coast NRM Inc., Community). **HIGH**
- D** Adopt the Control of Vehicles (Off-road Areas) Act 1978 for designated areas where enforcement is possible and where coastal user safety is compromised by unregistered vehicles (LG's, Police, Community). **MEDIUM**
- E** Investigate the feasibility and then implement the creation of sites within each LG area which can be managed for off road vehicles (LG's, DoP, DRDL, community). **HIGH**
- F** Encourage LG's and the community to participate in engaging/educating off-road vehicle users who conduct activities in an unsafe or irresponsible manner or in inappropriate areas (LG's, DoP, DRDL, SCMG, community). **ONGOING**
- G** Seek government support for an increase in licensed off-road vehicle (car and motorcycles) registration fees with revenue to be allocated to 4 wheel drive/ORV training and coastal track management purposes (SCMG, LG's, DRDL, DLG, community). **HIGH**
- H** Advocate against commercials and advertisements which appear to promote irresponsible use of off-road vehicles on the coast (DoT, SCMG, LG's, community). **HIGH**
- I** Support and promote programs aimed at providing education and training for ORV users, managing off-road vehicle use and raising community awareness of the impacts of off-road vehicles (e.g. spread of dieback) (LG's, DoT, DEC, AG, CfoC, SCMG, community). **ONGOING**
- J** Facilitate a regional stakeholder forum to address and progress the issue of ORV use in coastal areas (SCMG, South Coast NRM Inc.). **HIGH**

9.5 Visitor Safety

KEY CONCERNS

The number of people visiting the coast is increasing.

Growing population, extreme activities and use of equipment (vehicles, jet skis, surf kites etc) have heightened the level of risk to visitors to the coast.

Vehicle and pedestrian tracks have been forged into coastal areas which may be dangerous.

Vehicle users may place themselves at risk in remote areas of the coast by becoming bogged, disoriented or stranded due to steep inclines or inability to access assistance.

Large waves and high energy swells are an inherent danger along the South Coast, with an average of one death every eighteen months occurring from people being swept off rocks while fishing or exploring.

Safety issues have not been fully explored by Local Governments and the DRDL on the South Coast.

EXISTING ACTIONS

DEC undertake visitor risk assessments for all DEC managed locations.

DEC trains its staff and sometimes includes other organisations in training programs for visitor risk assessment.

DEC and Surf Life Saving Australia offer training and services in visitor risk assessment to Local Government.

Nathan Drew Foundation Trust provides advocacy and safety equipment for use on the coast.

International standard danger signs are erected at potentially dangerous sites in DEC managed estate.

DEC regularly review visitor safety in conjunction with Police and FESA.

The Shires of Denmark, Jerramungup, Ravensthorpe and Esperance have started targeted programs of coastal safety audits and construct signage in priority areas. A system of signs have been installed which comply with the Australian Coastal Safety Guidelines (Surf Lifesaving Australia et al., 2007), International Organisation for Standardisation (ISO Standards), Australian Standards and the National Aquatic and Recreational Signage Style Manual (Australian Water Safety Council et al., 2006). While not covering all coastal locations, the LGs are demonstrating responsible custodianship on public land.



Silhouettes by Sheryn Prior

STRATEGIC OBJECTIVE

Safety risks to visitors in the South Coast will be minimised through appropriate planning and management.

ACTIONS

- A** Undertake visitor risk assessments (safety audits) and implement visitor risk plans for all coastal locations on the South Coast (LG's, DRDL, DEC, SCMG, community). **HIGH**
- B** Review liability issues in terms of recent legal cases and best practice (LGs, DoP, DRDL, DEC). **HIGH**
- C** Prepare and implement visitor risk plans (LGs, DRDL). **HIGH**
- D** Train staff to assess visitor risk and implement appropriate management actions (LGs). **HIGH**
- E** Review management of vehicle and pedestrian access which traverse or lead to areas of high visitor risk in all coastal areas (LG's, DRDL, DEC). **HIGH**
- F** Continue to promote safety messages through coastal safety campaigns or through consistent and recognisable signage (LG's, SCMG, FESA, Police, DEC, DRDL, community). **ONGOING**
- G** Identify signage needs and priorities through management plans and install in accordance with the Australian Coastal Safety Guidelines (Surf Lifesaving Australia, 2007), International Organisation for Standardisation (ISO Standards), Australian Standards and the National Aquatic and Recreational Signage Style Manual (Australian Water Safety Council et al., 2006) (LG's, SCMG, SES, Police, DEC, DoP, DRDL, community). **HIGH**



9.6 Camping

KEY CONCERNS

Visitation of user groups such as 'grey nomads' and 'backpackers' with caravans, vans and motor home are increasing on the South Coast and facilities are not always suited to this use (e.g. black water disposal, informal and ad hoc camping).

Land managers are unable to fully undertake the management of the majority of informal camping locations because of the distance from management bases and the costs involved.

Environmental impacts at informal camp sites are an ever increasing financial liability for land managers.

Many informal camping locations are on Unallocated Crown Land that has limited or no management presence.

People are attracted to informal camping locations because they can "do whatever they want there" (SCMG, 2000a) leading to some areas being highly degraded by a small number of visitors.

Technology (e.g. internet and global positioning systems) allow almost anyone to identify access to coastal sites.

Travel booklets which promote free camping exacerbate problems for land managers by increasing the number of people who visit areas with insufficient facilities.

Problems occurring at informal camping locations include stripping of vegetation for fire fuel, soil erosion, random disposal of waste and grey water, overcrowding, conflict between pedestrians and vehicles, inappropriate access, motorcycle and unregistered vehicle use, rubbish dumping, increased wildfire risk and loss of environmental integrity (SCMG, 2000a).

Health risks are associated with the random disposal of human waste and grey water.

For many people informal camping is the only affordable holiday option and it appears that it is only a small proportion of visitors who do not respect the camp sites.

Proper disposal facilities for grey/black water from motor homes are not generally available on the South Coast.

EXISTING ACTIONS

Local communities at Starvation Boat Harbour, Boat Harbour, Cape Riche and Parry's Beach have taken on management of these locations which were previously informal camp grounds.

Local Government are willing to work with local communities and other land managers in sharing management of some coastal locations.

Caretaker arrangements have been successfully organised at some coastal sites (e.g. SoE-Munglinup Beach, CoA - Cape Riche, SoDe – Parrys Beach).

STRATEGIC OBJECTIVE

Camping in the South Coast will only occur at well managed locations with campers contributing to the cost of management and infrastructure.

ACTIONS

- A** Review liability issues associated with Local Government and/or community management of Unallocated Crown Land (LG's, DRDL, DEC, WALGA, community). **HIGH**
- B** Provide support for community management of coastal locations used for informal camping, where deemed appropriate (LG's, DRDL, SCMG, South Coast NRM Inc., community). **ONGOING**
- C** Review potential health risks associated with visiting/camping on the coast and plan to provide facilities such as black water disposal at strategic locations (LG's, DRDL, DEC). **HIGH**
- D** Identify coastal locations in management plans which are currently used for informal camping and recommend management strategies, including:
 - Closure and rehabilitation of areas (e.g. informal camp sites on random tracks);
 - Creation of day-use only areas (e.g. Wharton Beach, SoE);
 - LG managed campsites (e.g. CoA - Cosy Corner East for designated camping areas);
 - Community managed campsites (e.g. Boat Harbour, east of Albany, UCL);
 - Leased low-key nature-based tourist accommodation centres (e.g. Woody Island Nature Reserve, DEC); or
 - Leased caravan parks run by private enterprise or LG's (LG's, DEC, DRDL, SCMG, community). **HIGH**
- E** Designate and manage areas at all informal camp sites where camping can continue until formal management decisions are made and are implemented (LG's, DRDL, DEC, community). **HIGH**
- F** Install signage which directs and informs campers of management issues and which directs their use of the designated area (LG's, DRDL, community). **HIGH**
- G** Collect a fee from campers to cover the costs of providing consistent management presence at campsites where LG or community management is required (LG's, DRDL, community). **MEDIUM**
- H** Explore the option of employing a resident/seasonal caretaker to provide management presence at campsites recommended for LG or community management (DRDL, LG's, community). **MEDIUM**
- I** Identify appropriate facilities and plan to provide these (e.g. toilets and water) at all campsites recommended for LG or community management (LG's, DRDL, community). **HIGH**
- J** Provide input into the 'Free Camping Guides' to ensure that information is appropriate (LG's, DRDL, WATC, ERTA, GSTA, GSDC, SCMG, community). **HIGH**
- K** Develop and publish a camping guide to promote suitable camping locations within the South Coast Region in partnership with all relevant land managers (SCMG, LG's, ERTA, GSTA, WATC, DEC, DRDL, community). **MEDIUM**
- L** Ensure camp grounds managed by LG or the community are developed according to site plans which meet the specifications outlined in the Coastal Management Specification Manual (SCMG, In Review, 2009) and relevant coastal management plans (LG's, DRDL, SCMG, community). **MEDIUM**

9.7 Rubbish Disposal

KEY CONCERNS

Rubbish removal from remote locations is difficult, time consuming and costly.

The environmental integrity of many remote and informal camping locations is reduced by inappropriate disposal of rubbish and waste.

Rubbish can pose a health risk to wildlife (e.g. plastic bag ingestion, entanglement).

Fish offal is sometimes left on beaches or in dunes, encouraging the presence of flies and feral animals. Offal detracts from coastal aesthetics and can be a health risk.

EXISTING ACTIONS

Many rubbish tips at remote locations have been rationalised and closed, with signage requesting visitors to take their rubbish home (LG and DEC).

Some Local Governments, communities and individuals actively collect rubbish from coastal locations during peak use periods. Rubbish collection is an increasingly onerous task during peak use periods with increased visitation and limited options for rubbish disposal in remote locations.

Some Local Governments provide fish cleaning facilities and rubbish/composting receptacles for fish offal.

STRATEGIC OBJECTIVE

The disposal of rubbish will not detract from the environmental or aesthetic integrity of coastal locations.

ACTIONS

- A** Determine the need for rubbish bins according to the usage of the site e.g. day use, camping (LGs, DEC, DRDL). **HIGH**
- B** Local Government, DEC and community groups should continue to liaise regarding rubbish collection from locations in close proximity to Ranger stations or designated areas (LG's, DEC, community). **ONGOING**
- C** Provide fish cleaning stations and appropriate offal receptacles at key fishing locations (LG's, DRDL, DEC, community). **HIGH**
- D** Clear bins on a regular and consistent basis to avoid overflow, particularly during peak use periods (LG's, DRDL, DEC, community). **ONGOING**
- E** Signage should encourage users of remote locations to take their rubbish home, particularly in areas where bins cannot be provided (LG's, SCMG, DRDL, DEC, community). **HIGH**
- F** Support coastal and marine clean up days by providing extra bins and clearance of bins on those occasions (LG's, DEC, SCMG, South Coast NRM Inc., Community). **ONGOING**
- G** Support general education programs to reduce littering (SCMG, LGs). **ONGOING**

9.8 Coastal Tourism

KEY CONCERNS

The South Coast has an opportunity to promote parts of its natural, vastly untouched coastal environment as a unique and well managed sustainable holiday get-away for those who wish to experience peace and tranquility.

The development of the potentially lucrative nature-based tourism industry is dependent on considerate and sustainable use of the coast and the retention of its beauty and near pristine nature.

Some tourism operators may enter the industry unqualified or inexperienced and with limited knowledge and understanding of the responsibilities that need to be considered in their business.

Some tourism operations need provision of facilities such as safe mooring at appropriate sites to maximise the tourist trade and ensure visitor safety.

The activities of the Australia's Golden Outback and Australia's South West are largely dependent on financial support from State, Local Government and tourism operators.

Commercial operators and tourism agencies have not fully utilised the possibilities offered by interpretation of Aboriginal heritage.

Some small coastal towns are not reaching their full potential because they are unable to raise adequate funds for promotion of their tourism products.

Often, Local Governments do not know the level of use of beach infrastructure by commercial tourism/recreation operators.

Most commercial operators using public infrastructure such as barbecues, boat ramps, picnic areas, toilets and car parks do not contribute to the maintenance of this infrastructure.

EXISTING ACTIONS

Australia's South West and Australia's Golden Outback tourism organisations are working together to promote tourism on the South Coast.

Tourism WA has prepared a Destination Development Strategy for the South West and Goldfields Region which encompasses the South Coast. This will be updated in 2009 with sustainable tourism and impacts of climate change as a major focus.

Tourism WA has prepared a Nature Based Tourism Strategy (2004).

Tourism WA has undertaken a 'Review of Nature Based Tourism' (2007).

National Eco-tourism Accreditation Program (Eco-tourism Association of Australia (EAA)).

Tourism WA and Regional Tourism Organisations actively promote accreditation.

Tourism Council WA offer a national tourism accreditation program for tourism operators.

All charter boats operating in Western Australia have to be licensed under the requirements of the Fisheries Resources Management Act (1994), (and Conservation and Land Management Act 1984 in Marine Parks, National Parks and Nature Reserves).

Vancouver Waterways Plan.

GSDC is undertaking a Maritime Heritage Asset Analysis and Strategic Plan.

Albany Harbours Planning Strategy (Albany Waterways Management Authority & City of Albany, 1997).

STS Leeuwin visits the South Coast for a one month period annually to undertake Eco-Voyages.

Interest in sustainable tourism accommodation in a natural setting is growing across the South Coast.

Self promotion by individual operators.

Support is offered by local tourist bureaux/visitor centres.

Regional Tourism Organisations publish annual holiday planners and undertake industry product promotion.

Tourism WA provides significant funding support and assistance to market the South Coast Region. This includes direct grants to the not-for-profit RTO's, seminars and forums to improve business capacity, as well as arranging for media and travel agents to visit and promote the area.

DEC licence and charge commercial operators minimal fees, to assist in maintenance of infrastructure in DEC managed estate.

Land managers can seek guidance from DEC regarding the management and regulating of commercial operators at coastal locations.

Some tourism operators are willing to undertake coastal management activities with the guidance of land managers.

STRATEGIC OBJECTIVE

The South Coast will be established as the 'Sustainable tourism capital of Australia' through good promotional campaigns and a regionally coordinated effort by operators and tourism agencies.

Sustainable tourism projects and practices will be guided by State and National plans and strategies to ensure sustainability, minimal environmental impacts and adaption to climate change.

The tourism industry will be supported with appropriate infrastructure and assisted in becoming accredited and responsible for safety and environmental management.

Sustainable tourism operations will incorporate accommodation options which enable visitors to experience the coastal and marine environment in the most sustainable way possible, with positive environmental outcomes.

Commercial operators will benefit from improved management and regulation of tourism activities in coastal areas.



Simple Pleasures by Melanie Price

- A** Produce a sustainability based tourism and recreation strategy for the entire South Coast Region which promotes creative and coordinated development of the nature-based tourism industry (WATC, ERTA, GSTA, GSDC, GEDC, DEC, DoF, DRDL, LG's, SWALSC, GLSC, Tourism operators, SCMG, community). **HIGH**
- B** Implement the recommendations of the report 'Review of Nature Based Tourism' (DEC/TWA, 2007). **MEDIUM**
- C** Encourage tourism operators to attain accreditation through a nationally recognised accreditation program such as Green Globe, the Australian Tourism Accreditation Program or the National Eco-tourism Accreditation Program (TWA, GSDC, GEDC, DEC, DoF, DRDL, Tourism Operators, SCMG, community). **ONGOING**
- D** Encourage tourism operators to become members of Forum Advocating Cultural and Ecotourism to increase the knowledge and professionalism within the industry. (TWA, AGO, ASW, GSDC, GEDC, DEC, DoF, DRDL, Tourism operators, SCMG, community). **HIGH**
- E** Encourage tourism operators to develop environmental management systems (TWA, DEC). **MEDIUM**
- F** Carry out infrastructure planning and implementation for South Coast areas to support a range of coastal-based tourism activities in a safe, economically and environmentally sustainable manner (LG's, AWMA, DRDL, APA, GSDC, Tourism operators, SCMG, community). **HIGH**
- G** Undertake planning to support coastal-based tourism infrastructure development for all coastal towns as part of a regionally coordinated nature-based tourism strategy (GSDC, GEDC, WATC, ERTA, GSTA, DEC, DoF, DRDL, Tourism operators, SCMG, community). **HIGH**
- H** Identify potential sites for sustainable tourism accommodation opportunities for coastal areas and incorporate as part of a regionally coordinated nature-based tourism strategy (TWA, AGO, ASW, GSDC, GEDC, DEC, DRDL, LG's, SWALSC, GLSC, Tourism operators, SCMG, community). **HIGH**
- I** Invite expressions of interest for well planned development of sustainable tourism accommodation and activities (especially areas which are currently poorly managed) (LG's, DRDL, TWA, ERTA, GSTA, SWALSC, GLSC, SCMG, community). **HIGH**
- J** Encourage tourism operators and tourism agencies to support marketing and promotion as a sustainable tourism area at the national and international level. (TWA, AGO, ASW, GSDC, GEDC, DEC, DoF, DRDL, LG's, SWALSC, GLSC, Tourism operators, SCMG, community). **HIGH**
- K** Encourage tourism operators and tourism agencies to involve, form partnerships with and support Aboriginal cultural and heritage perspectives (TWA, AGO, ASW, GLSC, DIA, SAC, AAE, BoIAC, LG's, DEC, WRL, Tourism Operators, SCMG, community). **ONGOING**
- L** Develop, support and promote festivals which promote the environmental values and nature-based tourism products of the South Coast region [e.g. Festival of the Wind, Esperance; Festival of the Sea, Albany] (TWA, ASW, AGO, GEDC, GSDC, SCMG, LG's, Tourism operators, SCMG, community). **HIGH**
- M** Develop training, marketing, research and promotional strategies to increase Aboriginal participation in the tourism industry (TWA, DIA, SWCoE, SWALSC, GLSC, SAC, AAC, BoIAC, GSDC, GEDC, DEC, DoF, DoW, LG's, SCMG, community). **HIGH**
- N** Identify commercial operators that are active on the coast and determine if a fee should be contributed to assist with the management of coastal reserves that they operate on (LG's, DRDL, Commercial operators, community). **HIGH**

10 REFERENCES AND BIBLIOGRAPHY

- Aboriginal Affairs Department (unpublished) Register of Aboriginal Sites within the Shire of Ravensthorpe Aboriginal Affairs Department Web page.
- Agriculture WA (2000) Draft Weed Plan for Western Australia (www.agric.wa.gov.au/programs/app/swp).
- Agriculture WA (1999) Declared Plants and other Weeds Brochure produced by Agriculture WA.
- Agriculture WA (2000) Community Support for Natural Resource Management. Future Frameworks: Future Needs Miscellaneous Publication 24/2000 Prepared by the Soil and Land Conservation Council of Western Australia.
- Albany Waterways Management Authority (1995) Albany Waterways Management Programme Water & Rivers Commission Albany Waterways Management Authority & City of Albany (1997) Albany Harbours Planning Strategy Department of Water.
- Albany Waterways Management Authority & City of Albany (2000) Woolstores to Frenchmans Bay Foreshore Management Plan Albany Western Australia Albany Harbours Planning Committee (1998).
- Albany Harbours Planning Strategy Guidelines Department of Water.
- ANZECC (2000) Australian National Guidelines for Cetacean Observation & Areas of Special Interest for Cetacean Observation Environment Australia, Canberra ACT.
- ANZECC, Australian Maritime Safety Authority & Maritime Safety Authority of New Zealand (1997) ANZECC Strategy to Protect the Marine Environment – Code of Practice for Anti-fouling and In-water Hull Cleaning and Maintenance.
- Australian Maritime Safety Authority (1999) National Plan to combat pollution of the sea by oil and other noxious and hazardous substances (www.amsa.gov.au/me/netplan/contplan).
- Australian Water Safety Council, Surf Life Saving Australia, Royal Life Saving Society of Australia, Queensland Government and State Government of Victoria (2006) National Aquatic and Recreational Signage Style Manual. Life Saving Victoria, Port Melbourne, Victoria.
- Natural Resource Management Ministerial Council (2006) Australian Weeds Strategy – A national strategy for weed management in Australia. Australian Government. Department of the Environment and Water Resources, Canberra ACT.
- Australian National Parks and Wildlife Service (1989) Whales and Whale Watching in Australia Commonwealth of Australia.
- Australian Quarantine Inspection Service (1995) Australian Ballast Water Management Plan Canberra ACT.
- Bannister JL, Kemper CM, Warneke RM (1996) The Action Plan for Australian Cetaceans Wildlife Australia Endangered Species Program Project Number 380 Australian Conservation Agency Canberra ACT.
- Bates GM (1995) Environmental Law in Australia 4th Edition Butterworths Australia Beard JS (1972-80) Vegetation Survey of Western Australia 1:250,000 series. Vegmap Publications Applecross Western Australia.
- Beard JS (1981) Vegetation Survey of Western Australia 1:1,000,000 series. Explanatory notes to sheet 7. The Vegetation of the Swan Area University of Western Australia Press.
- Beard JS & Sprenger BS (1984) Geographical data from the vegetation survey of Western Australia Vegetation Survey of Western Australia Occasional Paper No. 2.
- Bennett K (2001) Hopetoun Foreshore Site Development Plan prepared for Hopetoun Progress Association and Shire of Ravensthorpe, Hopetoun Western Australia.
- Boreham P (1994) Esperance Beach Stabilisation – a report on Coastal Erosion and Shore Protection Options Department of Transport Fremantle Western Australia.

BSD Consultants Pty Ltd (1997) Albany Harbours Planning Strategy. Unpublished report, prepared for the Town of Albany.

CALM (1992a) South Coast Region Regional Management Plan (1992-2002) prepared for National Parks and Nature Conservation Authority and Lands and Forests Commission, Western Australia.

CALM (1991) Fitzgerald River National Park Management Plan (1991-2001) prepared for National Parks and Nature Conservation Authority and Lands and Forests Commission, Western Australia.

CALM (1992) Draft Nature Conservation Policy. Perth, Western Australia.

CALM (1992b) Walpole-Nornalup National Park Management Plan (1992-2002) prepared for National Parks and Nature Conservation Authority and Lands and Forests Commission, Western Australia.

CALM (1994) A Plan for the Protection of South Coast Vegetation from Dieback Number 3. 1994-1998 Department of Environment and Conservation, Albany.

CALM (1995) West Cape Howe Management Plan (1995-2005) prepared for National Parks and Nature Conservation Authority and Lands and Forests Commission, Western Australia.

CALM (1995a) Two Peoples Bay Nature Reserve Management Plan (1995-2005) prepared for National Parks and Nature Conservation Authority and Lands and Forests Commission, Western Australia.

CALM (1999) Esperance Lakes Nature Reserves Management Plan (1999-2009) prepared for National Parks and Nature Conservation Authority and Lands and Forests Commission, Western Australia.

CALM (2009) Walpole and Nornalup Inlets Marine Park Management Plan 2009 – 2019. Prepared on behalf of the Marine Parks and Reserves Authority, Perth, Western Australia.

Cancer Foundation of Western Australia (1999) Shade for the public – Guidelines for Local Government Cancer Foundation of Western Australia Subiaco Western Australia.

Carman-Brown A (1989) Goldfields Planning and Development Strategy – the south-eastern coast of WA Working Paper Department of Urban Planning and Development Perth Western Australia.

Centre for International Economics (1988) Tourism Report – Economic Effects of International Tourism, Canberra Australian Capital Territory.

Chape S & Sansom G (1983) Esperance District Coastal Management Plan Department of Conservation and Environment Report 11 Perth, Western Australia.

Chalmers C (1983) Duke of Orleans Bay Regional Park – Plan of Development and Management Bulletin 138 Western Australia.

Chalmers C & Shire of Esperance (1983) Coastal Management Plan – Munglinup Inlet Area Department of Conservation and Environment Western Australia.

City of Albany (2000) Draft Coastal Strategy for the City of Albany, Western Australia.

City of Albany (2000a) Draft Environmental Weeds Strategy for City of Albany Works and Services Albany Western Australia.

City of Albany (1996) Local Rural Strategy – Policy document Albany, Western Australia.

City of Albany, Ayton, Taylor & Burrell, Wood & Grieve Engineers (1998b) Nullaki Peninsula Coastal Foreshore and Sand Blowout Management Plan Albany, Western Australia.

City of Albany, Ayton, Taylor & Burrell, Wood & Grieve Engineers (1998) Nullaki Peninsula Foreshore Management Plan Albany, Western Australia.

City of Albany (1999) Nanarup Beach Management Plan – a community initiative Prepared by the Strategic Planning Team City of Albany Western Australia.

City of Albany (1999b) Mount Martin Regional Botanic Park Management Plan Prepared by the Mt Martin Regional Botanic Park Committee for the City of Albany Western Australia.

City of Albany (2000) Cosy Corner Management Plan Prepared by the Strategic Planning Team, City of Albany, Western Australia.

City of Albany (2008) Guideline for Rehabilitation Plantings using Native Species. Council Policy. Albany, Western Australia.

City of Albany (2003) Lowlands Reserve Management Plan.

Coffey Environments, Marden Jacobs Associates, MP Rogers and Associates, Gaia Resources (2009) Climate Change: Prepared for South Coast NRM Inc.

Colman JG (1998) South Coast Terrestrial and Marine Reserve Integration Study Department of Environment and Conservation Marine Conservation Branch Fremantle Western Australia.

Commonwealth of Australia (2007) The South-west Marine Bioregional Plan. Bioregional Profile. A Description of the Ecosystems, Conservation Values and Uses of the South-west Marine Region. Australian Government, Department of Environment, Water, Heritage and the Arts. Canberra, Australia.

Commonwealth Department of Tourism (1994) National Ecotourism Strategy Commonwealth of Australia Canberra, ACT.

Commonwealth of Australia (1997) The National Weeds Strategy: a strategic approach to weed problems of national significance Agriculture and Resource Management Council of Australia and New Zealand, Australian and New Zealand Environment and Conservation Council, Forestry Ministers.

Commonwealth of Australia (1997a) Community involvement in off-reserve and on-reserve management of environmental weeds Biodiversity Group Environment Australia, Canberra.

Commonwealth of Australia (1996) The National Strategy for the Conservation of Australia's Biological Diversity Biodiversity Group Environment Australia, Canberra.

Connell Wagner (2001) Shire of Ravensthorpe Local Planning Strategy prepared for the Shire of Ravensthorpe East Perth Western Australia.

Conochie I (1979) Denmark- An outline history 150th Celebrations Committee, Albany.

Country Coastal Policy DC6.1 Department for Planning and Infrastructure Perth Western Australia.

CP Services (2002) An Assessment of Quagi Beach Picnic and Camping Area (Reserve 40943), Shire of Esperance, Western Australia. A Report to the South Coast Management Group and Shire of Esperance. Esperance, Western Australia.

Craig G (1992) Hopetoun Foreshore Management Plan Department of Urban Planning and Development Perth Western Australia.

Craig G (1992) Doubtful Islands Area Coastal Plan – Stage 1 prepared for Shire of Jerramungup.

Craig G (1994) Beaufort Inlet & Wellstead Estuary Coastal Plan prepared for the Shire of Jerramungup.

Craig G (1997) Shire of Ravensthorpe Coastal Site Development Plans prepared for Shire of Ravensthorpe Western Australia.

Craig G (2000) Vegetation and Flora of the South Coast – a review prepared for the South Coast Management Group Albany Western Australia.

Craig G, Burkin B, Van Steveninck (1984) Ravensthorpe District Draft Coastal Management Plan Department of Conservation and Environment Bulletin 152 Perth Western Australia.

Craig G & Oma V (1984) Esperance Eastern Coast Planning and Management Report Department of Conservation and Environment. Bulletin 173 Western Australia.

- Cresswell, G.R. (1986). The role of the Leeuwin Current in the life cycles of several marine creatures. In: Pelagic Biogeography, UNESCO Technical Papers in Marine Science 49, 60-64
- Cresswell, G.R. and J.L.Peterson (1993). The Leeuwin Current south of Western Australia. Australian Journal of Marine and Freshwater Research 44, 285-303.
- Denmark Environment Centre (2003) Denmark Greening Plan. For the Natural Heritage Trust and the Shire of Denmark.
- Department of Conservation and Environment (1984). Jerramungup Coastal District Recreation Survey prepared for Shire of Jerramungup, Jerramungup, Western Australia.
- Department of Conservation and Environment & Denmark Shire Council (1987) Draft Coastal Management Plan - Shire of Denmark Bulletin 199 Perth Western Australia.
- Department of Conservation and Land Management (2006) The Western Australian South Coast Macro Corridor Network. A Bioregional Strategy for Nature Conservation. Albany, Western Australia.
- Department of Environment (2006) Wellstead Estuary Management Plan. Prepared by the Fitzgerald Biosphere Group; Shire of Jerramungup and the Wellstead Estuary Advisory Committee. Department of Environment, Albany, Western Australia.
- Department of Fisheries (1998) Ministerial Policy Guidelines No. 8. Fisheries Ministerial Policy Guidelines - Assessment of applications for authorisations for Aquaculture and Pearling in coastal waters of Western Australia. Issued Pursuant to Section 246 of the Fish Resources Management Act 1994 and Section 24 of the Pearling Act 1990 As amended December 1998. Perth, Western Australia.
- Department of Planning and Urban Development (1991) Powell Point Draft Site Plan Perth Western Australia.
- Department of Resource Development (2000) Southern Cross – Esperance Regional Minerals Study Strategic Overview East Perth Western Australia.
- Dieback Working Group (2000) Managing Phytophthora Dieback Guidelines for Local Government.
- Ecologia Environmental Consultants, Maikaira Pty Ltd, & O'Brien Aquaculture Consultants (1996) Bremer Bay Coast Aquaculture Feasibility Study, prepared for the Shire of Jerramungup Western Australia.
- EPA (1998) Draft Environmental Protection (State Marine Waters Policy) Perth Western Australia.
- EPA (1998a) Guidance for the Assessment of Environmental Factors – Benthic Primary Producer Habitat Protection (Draft) No. 29.
- EPA (1998b) Guidance for the Assessment of Environmental Factors – Seagrass Habitat Protection (Draft) No. 22.
- Equity M (1996) Great Southern Regional Tourism Strategy. Prepared for Great Southern Development Commission Albany Western Australia.
- Everall Consulting Biologist and Fish unlimited (1999) Draft User Profile of the Recherche Archipelago and adjacent coast prepared for Department of Fisheries Perth Western Australia.
- Everall Consulting Biologists and Fish Unlimited (1999a) Benthic Habitat Survey of the Renmark, Mart, Mondrain, Tory and York Island Groups prepared for Department of Fisheries Perth Western Australia.
- Esperance Shire Council (1984) Israelite Bay Management Plan Esperance Western Australia.
- Field C (2001) Draft Esperance Coastal Management Plan prepared for Shire of Esperance Western Australia.
- Field C (2001a) Draft Ravensthorpe Coastal Management Plan prepared for Shire of Ravensthorpe Western Australia.

- Department of Fisheries (2000) Management Directions for Western Australian Coastal Commercial Finfish Fisheries Fisheries Management Paper No. 134.
- Department of Fisheries (1998) A study into Western Australian open access and Wetline Fisheries Fisheries Research Report No. 118.
- Department of Fisheries (1998a) Guidelines for granting aquaculture leases Fisheries Management Paper No. 115.
- Department of Fisheries (1999) Management Directions for Western Australian Estuarine and Marine Embayment Fisheries Fisheries Management Paper No. 131.
- Department of Fisheries (2000a) Management Directions for Western Australian Recreational Fisheries Fisheries Management Paper No. 136.
- Department of Fisheries (2000b) Aquaculture Plan for the Recherche Archipelago Fisheries Management Paper No. 140.
- Department of Fisheries (1997) Assessment of applications for authorisations for Aquaculture and Pearling in coastal waters of Western Australia Ministerial Policy Guideline No. 8.
- Department of Fisheries (1997a) Marine farm planning and consultation processes in Western Australia Fisheries Discussion Paper No. 102.
- Department of Fisheries (1999a) Abalone Aquaculture in Western Australia Fisheries Management Paper No. 133.
- Department of Fisheries, WIMA & Shire of Denmark (2000) Aquaculture Development Plan for Wilson Inlet Denmark Western Australia.
- Department of Fisheries (1994) Management of the marine aquarium fish fishery Fisheries Management Paper No. 63.
- Department of Water (2008) State Waterways Initiative. Strategic Directions for the Future. Perth, Western Australia.
- Environmental Protection Authority (2005) Environmental Protection in Natural Resource Management. Position Statement No. 8. Perth, Western Australia.
- Estill & Associates (2007) Denmark Strategic Boating Plan. Strategies Document. Prepared for the Shire of Denmark.
- Fletcher CH., Mullane RA., Richmond BM. (1997) Beach Loss Along Armored Shorelines on Oahu, Hawaiian Islands Journal of Coastal Research, 13 (1), 209-215 Fort Lauderdale, Florida.
- Gales N.J. (1991) New Zealand Fur Seals and Oil: An overview of Assessment, Treatment, Toxic Effects and Survivorship – The 1991 Sanko Harvest Oil Spill Report to the Department of Environment and Conservation.
- Gilfillan S (2000) Terrestrial Fauna of the South Coast – a review prepared for the South Coast Management Group Albany Western Australia.
- Godfrey, J.S., D.J. Vaudrey and S.D. Hahn (1986). Observations of the shelf-edge current south of Australia, winter 1982. Journal of Physical Oceanography 16, 668-679.
- Goett U & Alder J (2000) Coastal Tourism and Recreation in the South Coast Prepared for South Coast Management Group Albany, Western Australia.
- Gordan DM, Chace SC, Grey KA Simpson CJ (1994) Changes to the structure and productivity of *Posidonia sinuosa* seagrass meadow in Princess Royal Harbour, Western Australia Technical Series No. 50 Department of Environmental Protection.
- Gourley M.R., Harper B.A., Cox R.J., Stone P.B. and Webb T., 2004, Coastal Engineering Guidelines for working with the Australian coast in an ecologically sustainable way, Engineers Australia, National Committee on Coastal and Ocean Engineering, EA Books, Barton ACT, Australia, 101p.
- Government of Western Australia (1998), New horizons - The way ahead in marine conservation and management, Department of Conservation and Land Management, Perth.

- Government of Western Australia (1989) State Squatter Policy Perth, Western Australia.
- Government of Western Australia (2000) Natural Resource Management in Western Australia, The Salinity Strategy. Perth, Western Australia
- Government of Western Australia (2001) Draft Coastal Zone Management Policy for Western Australia Perth, Western Australia.
- Government of Western Australia (1997) New Horizons in Marine Management – the way ahead in marine conservation and management Perth Western Australia.
- Government of Western Australia (1997) Wetlands Conservation Policy for Western Australia. Perth, Western Australia.
- Government of Western Australia (1997a) Nature Based Tourism Strategy for Western Australia Prepared by the Nature Based Tourism Advisory Committee Western Australian Tourism Commission Perth Western Australia.
- Government of Western Australia (2000) A Regional Development Policy for Western Australia Department of Commerce and Trade Perth Western Australia.
- Government of Western Australia (2000) State Water Quality Management Strategy: Objectives, Principles, Strategies and Implementation Framework Perth Western Australia.
- Government of Western Australia (2000) The Salinity Strategy prepared by the State Salinity Council in association with community and government agencies Perth Western Australia.
- Government of Western Australia (2003) Western Australian State Sustainability Strategy. Consultation Draft. Department of the Premier and Cabinet. Perth, Western Australia.
- Government of Western Australia (2007) State of the Environment Report Western Australia at <http://www.soe.wa.gov.au/>
- Government of Western Australia (2008) A Natural Resource Management Plan for Western Australia – Consultation Draft for Public Comment. Department of Agriculture and Food, Perth, Western Australia.
- Government of Western Australia and Government of Australia (2004) The NRM Investment Plan for the South Coast of WA.
- Great Southern Development Commission (2000) Vancouver Waterways Project Albany, Western Australia.
- Green BJ & Wetherley S (2000) Geology and Landforms of the South Coast – a review prepared for the South Coast Management Group Albany Western Australia.
- Green Skills Inc (2008) Wilson Inlet Foreshore Reserves Management Plan. Prepared for the Shire of Denmark. Funded by South Coast NRM Inc.
- Gutteridge, Haskins & Davey Pty Ltd (1999) Esperance Foreshore Coastal Protection Works – Report on Coastal Management Operations Perth Western Australia.
- Gutteridge, Haskins & Davey Pty Ltd (1999) Hopetoun Fishing Facilities – 10 year Maintenance Program for Department of Transport Perth Western Australia. Gunby, C. (unpub. a), Nutrient Audit: Princess Royal Harbour 1995, Report No. A1621100, Water and Rivers Commission, Albany.
- Gunby, C. (unpub. b), Industry Nutrient Audit: Princess Royal Harbour 1996, Report No. A1621100, Water and Rivers Commission, Albany.
- Hodgkin EP (1960) Patterns of Life on Rocky Shores J. Roy. Soc. WA 43 : 35-45.
- Hodgkin EP (Ed) (1984) Estuarine Environments of the Southern Hemisphere Department of Conservation and Environment Bulletin No. 161 pp. 140.
- Hodgkin EP & Kendrick GW (1984) The changing aquatic environment 7000BP to 1983 in the estuaries of South Western Australia Department of Conservation and Environment Bulletin No. 161 pp. 85-95.

- Hodgkin EP & Clark R (1987) Estuaries and coastal lagoons of south Western Australia. Wellstead Estuary Environmental Protection Authority WA Estuarine Studies Series 2: pp22.
- Hodgkin EP & Clark R (1988a) Estuaries and coastal lagoons of south Western Australia. Nornalup and Walpole Inlets Environmental Protection Authority, WA Estuarine Studies Series 2: pp18.
- Hodgkin EP & Clark R (1988b) Estuaries and coastal lagoons of south Western Australia. Wilson, Irwin and Parry Inlets Environmental Protection Authority, WA Estuarine Studies Series 3.
- Hodgkin EP & Clark R (1988c) Estuaries and coastal lagoons of south Western Australia. Beaufort Inlet and Gordon Inlet, Estuaries of the Jerramungup Shire Environmental Protection Authority, WA Estuarine Studies Series 4: pp 32.
- Hodgkin EP & Clark R (1989) Estuaries and coastal lagoons of south Western Australia. Stokes Inlet and other estuaries of the Shire of Esperance Environmental Protection Authority, WA Estuarine Studies Series 5: pp 40.
- Hodgkin EP & Clark R (1990a) Estuaries and coastal lagoons of south Western Australia. Estuaries of the Shire of Ravensthorpe and the Fitzgerald River National Park Environmental Protection Authority, WA Estuarine Studies Series 7: pp 52.
- Hodgkin EP & Clark R (1990b) Estuaries and coastal lagoons of south Western Australia. Estuaries of the Shire of Albany Environmental Protection Authority, WA Estuarine Studies Series 8: pp56.
- Hsu JRC (1995) A Review on Esperance Beach Stabilisation Report Prepared for Esperance Shire Council and Esperance Port Authority University of Western Australia, Nedlands WA.
- Hsu JRC (1996) Headland Control for Esperance Beach Stabilisation Centre for Water Research University of Western Australia.
- Hussey BMJ, Keighery GJ, Cousens RD, Dodd J, Lloyd SG (1997) Western Weeds – A guide to the weeds of Western Australia The Plant Protection Society of Western Australia Victoria Park, Western Australia.
- Institute of Engineers (1998) Coastal Engineering Guidelines for working with the Australian Coast in an environmentally sustainable way Prepared by The National Committee on Coastal and Ocean Engineering, Institute of Engineers for Environment Australia Coast and Clean Seas.
- Johnson SL (1998) Hydrogeology of the Ravensthorpe 1:250 000 Sheet: Western Australia Water and Rivers Commission, Hydrogeological Map Explanatory Notes Series, Report HM 4, 28pp.
- Kirkman H (1987) Decline of seagrass in Princess Royal Harbour and Oyster Harbour, Albany Technical Series No. 15 Environmental Protection Authority.
- Kulbardi et al. (2008) Bremer Bay Trails Master Plan.
- Leigh JH and Briggs JD (1992) Threatened Australian Plants: An overview and Case Studies. Australian National Parks and Wildlife Service, Canberra.
- Lenanton, R, L Joll, J. Penn and K Jones (1991). The influence of the Leeuwin Current on coastal fisheries of Western Australia. Proceedings of the Leeuwin Current Symposium, Perth, 16 March 1991; Journal of the Royal Society of Western Australia 74, 101-114.
- Macdonald HV., Patterson DC. (1984) Beach Response to Coastal Works Gold Coast, Australia Presented at the 19th International Conference on Coastal Engineering, Houston.
- Maguire, GS (2008) A Practical Guide for Managing Beach Nesting Birds in Australia. Birds Australia, Melbourne.
- Maher Brampton Associates (1999) Albany Trails Masterplan.
- Marchant N (1991) The vascular flora of south western Australia Association of Societies for Growing Australian Plants 1991 Conference, Perth pp 16-18.
- Marine Parks and Reserves Selection Working Group (MPRSWG) (1994) A representative marine reserve system for Western Australia Department of Environment and Conservation Western Australia.

Marlock Consulting (1999) Cheyne Bay Management Plan – Cape Riche to Pallinup River Reserves 31240,14986 and 14987 prepared for the Wellstead Land Conservation District Committee, City of Albany and Department of Conservation.

Maxwell J.G.H. and G.R. Cresswell (1981). Dispersal of tropical marine fauna to the Great Australian Bight by the Leeuwin Current. *Australian Journal of Marine and Freshwater Research* 32, 493-500.

Michael Toobey & Associates (1997) Prawn Rock Channel, Denmark: Concept Plan Prepared for Denmark Foreshore Plan Sub-committee.

Mitchell, M (2007) Coastal Projects Plan 2007-2008. Outcomes of the Esperance Aboriginal NRM Workshop 2007. Written in collaboration with Esperance Traditional Owners. South Coast NRM Inc. Inc, Esperance, Western Australia.

Morrice M (2000) Planning and Integrated Future: the Central West Coast of Victoria Discussion Paper: Issues and Options Environment Australia Canberra ACT.

Natural Resource Management Ministerial Council (2006) National Cooperative Approach to Integrated Coastal Zone Management. Framework and Implementation Plan. Australian Government, Department of Environment and Heritage, Canberra, ACT.

Newbey KR (1987) Draft Management Plan Pallinup/Beaufort Inlet Area Environmental Protection Authority Bulletin No. 178.

Oma VPM, Clayton DM, Broun JB and Keating CDM (1992) Coastal Rehabilitation Manual Department of Agriculture Western Australia.

Paul MJ (1985) Beach Erosion, Esperance Western Australia Marine and Harbours, Engineering Division Report Fremantle Western Australia.

Pearce,A.F. (1991). Eastern boundary currents of the southern hemisphere. Proceedings of the Leeuwin Current Symposium, Perth, 16 March 1991; *Journal of the Royal Society of Western Australia* 74, 35-45.

Pearce, A.F. & B.F.Phillips (1988). ENSO events, the Leeuwin Current and larval recruitment of the Western Rock Lobster. *Journal du Conseil* 45, 13-21. PPK Environmental and Infrastructure(2000) Shire of Ravensthorpe Infrastructure and Services Needs Analysis Perth Western Australia.

Powell CDL, Collins PJ (2000) Seabirds on islands near Albany: Threat abatement unpublished report for Department of Environment and Conservation.

Priskin, J (2004) Four-wheel Drive Vehicle Impacts on the Central Coast Region of Western Australia. In: *Environmental Impacts of Ecotourism*. Ed. R Buckley, CABI Publishing.

Raines, J (2002) Hooded Plover Management Plan (2002-2012). Produced for Birds Western Australia Inc.

Richardson DM, Cowling RM, Lamont BB (1996) Non-linearities, synergisms and plant extinctions in South African fynbos and Australian Kwongan. *Biodiversity and Conservation* 5:1035-1036.

Rodgers MP & Associates (1998) Bremer Bay Aquaculture Project Ocean Water Circulation System MP Rodgers & Associates Osborne Park, Western Australia.

SCRIPT & RAP (1996) Southern Prospects – a strategy for managing natural resources and developing rural communities on the South Coast of Western Australia Albany Western Australia.

Schlacher, TA, Richardson, D, and McLean I (2008) Impacts of Off Road Vehicles on Macrobenthic Assemblages on Sandy Beaches. *Environmental Management*, Volume 41, Number 6, June 2008, pp 878 – 892 (15). Springer.

Shire of Demark (2003) Coastal Management Plan.

Shire of Esperance (2003) Dempster Headland. Management Plan. Prepared for the Local Environmental Action Forum with assistance from Coastwest and Coastcare.

Shire of Esperance (2005) Esperance Foreshore Masterplan.

- Shire of Esperance (in prep.) Shire of Esperance Environmental Weed Strategy.
- Shire of Jerramungup (1995) Jerramungup Coastal Management Plan Jerramungup Western Australia.
- Shire of Jerramungup (2005) Jerramungup Coastal Management Plan.
- Shire of Ravensthorpe (1988) Hamersley Inlet Reserve Management Plan Ravensthorpe Western Australia.
- Shire of Ravensthorpe (2001a) Effects of Ravensthorpe Nickel Project on the Shire of Ravensthorpe Ravensthorpe, Western Australia.
- Sinclair Knight Mertz (2000) Ravensthorpe Nickel Project Quantitative Marine Biological Survey prepared for Ravensthorpe Nickel Operations Perth Western Australia.
- South Coast Management Group (2000) Community Consultation Analyses – people of indelible character Prepared by Barb Green, Albany, Western Australia.
- South Coast Management Group (2000a) Coastal Familiarisation – management and condition of coastal locations in the South Coast Prepared by Barb Green, Albany, Western Australia.
- South Coast Management Group (2000b) Coastal Familiarisation – management and condition of coastal locations in the Shire of Jerramungup Prepared by Barb Green, Albany, Western Australia.
- South Coast Management Group (2000c) Coastal Familiarisation – management and condition of coastal locations in the Shire of Denmark Prepared by Barb Green, Albany, Western Australia.
- South Coast Management Group (2000d) Coastal Familiarisation – management and condition of coastal locations in the City of Albany Prepared by Barb Green, Albany, Western Australia.
- South Coast Management Group (2000e) Coastal Familiarisation – management and condition of coastal locations in the Shire of Ravensthorpe Prepared by Barb Green, Albany, Western Australia.
- South Coast Management Group (2000f) Coastal Familiarisation – management and condition of coastal locations in the Shire of Esperance Prepared by Barb Green, Albany, Western Australia.
- South Coast Management Group (2001) Coastal and Marine Issues Discussion Paper Prepared by Barb Green Albany Western Australia.
- South Coast Management Group (2001a) Draft Southern Shores - A strategy to guide coastal and marine planning and management in the South Coast region of Western Australia prepared by Barb Green, Albany, Western Australia.
- South Coast Management Group (2001b) Analysis of submissions received for Draft prepared by Barb Green, Albany, Western Australia
- South Coast Management Group (2001c) Southern Shores Implementation Plan 2001 - 2021, prepared by Barb Green, Albany, Western Australia.
- South Coast Management Group (2005) Coastal Management Specification Manual: a guide for the construction of coastal management infrastructure. Prepared by Green Skills Inc., Albany, Western Australia.
- South Coast Natural Resource Management Inc (2004) Southern Prospects 2004-2009: the South Coast Strategy for NRM.
- Surf Life Saving Australia (2007) Australian Coastal Public Safety Guidelines. Bondi Beach, NSW.
- State Planning Commission (1994) Albany Regional Strategy: Great Southern Region Perth Western Australia.
- State Weed Plan Steering Group (2001) A Weed Plan for Western Australia. Department of Agriculture. Bulletin 4490. Perth, Western Australia.
- Tourism Coordinates (1997) Strategic Plan for the Tourism Industry in the South East Region of Western Australia Prepared for the Commonwealth Department of Tourism, Goldfields Esperance Development Commission, The Tourism Industry of the South East Region, Esperance and Ravensthorpe Shire Councils, Esperance Chamber of Commerce and Industry, Skywest Airlines and DEC.

- Tourism WA (2004) A Nature Based Tourism Strategy for Western Australian. Perth, Western Australia.
- Transplan (1999) Shire of Esperance Trails Master Plan.
- V & C Semeniuk Research Group (1998) Preliminary delineation of consanguineous wetland suites between Walpole and Fitzgerald Inlet, South Western Australia Water and Rivers Commission.
- V & C Semeniuk Research Group (1999) A preliminary evaluation of wetlands in the Esperance Water Resource Region Ecologia (Draft)
- Valentine PS (1991) 'Nature-based tourism' in Special Interests Tourism eds. Hall M. & Weiler, Belhaven Press, London.
- Van Steveninck A & Burkin B. (1984) Starvation Boat Harbour Coastal Management Plan Department of Conservation and Environment Bulletin 151 Perth Western Australia.
- Veron JEN & Marsh LM (1988) Hermatypic Corals of Western Australia Rec. WA Museum. Supp. 29 136pp. Department of Water (1999) Urban Stormwater Best Practice Manual.
- Department of Water (1997) Albany-Denmark Region Water Resources Review and Development Plan Vol 1 of 11. DoW Report WRAP2.
- Department of Water (2004-2007) Stormwater Management Manual for Western Australia.
- Department of Water (2008) Culham Inlet Management Plan. RAIN, South Coast Natural Resource Management Inc; Government of Western Australia ; Funded by the Western Australian and Australian Governments, Albany Western Australia.
- Department of Water (2008) Benwenerup Stokes Inlet Management Plan. Albany WA.
- Water and Rivers Commission (1997a) Esperance Region Water Resources Review and Development Plan DoW Report WRAP5.
- Water and Rivers Commission (2000) Draft Supporting information to Draft Statewide Policy No. 4 Waterways WA Department of Water, Statewide Policy No. 4.
- Water and Rivers Commission (2001) Draft Statewide Policy No. 4. Waterways WA: Developing a strategy for statewide management of waterways in Western Australia. Consultation Paper. Perth, Western Australia.
- Watson J (1994) Marine Aspects of the Fitzgerald River National Park Biosphere Reserve in Marine Protected Areas and Biosphere Reserves Towards a new Paradigm Ed. DJ Brunckhorst, pp76-78 Australian Nature Conservation Agency, Canberra.
- Watson JW & Wilkins PJ (1999) The Western Australian South Coast Macro Corridor Project A Bioregional Strategy for Nature Conservation Parks 9 (3).
- Wells FE (1980) The distribution of shallow-water marine prosobranch gastropod molluscs along the coastlines of Western Australia. Veliger 22 : 232-247.
- Western Australian Government (2009) Natural Resource Management Review, Western Australia, February 2009.
- Western Australian Municipal Association (1997) Working with Native Title West Perth, Western Australia.
- Western Australian Planning Commission (1996a) Coastal Planning and Development in WA towards a policy framework. Perth, Western Australia.
- Western Australian Planning Commission (1996b) State Planning Strategy Perth Western Australia.
- Western Australian Planning Commission (1999) Goldfields-Esperance Regional Planning Strategy, Perth, Western Australia.
- Western Australian Planning Commission (2001) Draft Coastal Zone Management Policy for Western Australia. For Public Comment. Perth, Western Australia.

Western Australian Planning Commission (2003) Statement of Planning Policy No. 2.6. State Coastal Planning Policy. Perth, Western Australia.

Western Australian Planning Commission (2003) Coastal Planning and Management Manual. Perth, Western Australia.

Western Australian Planning Commission (2008) Better Urban Water Management. Perth, Western Australia.

Western Australian Planning Commission and Department of Planning (2008) Visual Landscape Planning in Western Australia: a manual for evaluation, assessment, siting and design. Perth, Western Australia.

Western Australian Tourism Commission (1999) South East Tourism Research Review Overnight Domestic Visitor Activity in the Region. Perth, Western Australia.

Western Power, City of Albany, Department of Environment and Conservation(2001) Sand Patch Environmental Management Plan Albany, Western Australia.

Williams A (1997) Municipal Heritage Inventory for the Shire of Ravensthorpe prepared for the Shire of Ravensthorpe Western Australia.

Wilson BR & Gillett K (1971) Australian Shells Reid, Sydney 168pp, 106 col. pls Wilson BR & Stevenson S (1977) Cardidae of Western Australia WA Museum Spec. Publ. No. 9.

Wilson BR & Allen GR (1987) Major components and distribution of marine fauna in Fauna of Australia Australian Government Publishing Service Canberra pp. 43-68.

Wilson Inlet Management Authority & Shire of Denmark (1996) Denmark Foreshore- Wilson Inlet Management Plan Department of Water Water Resources Management Series Report WRM1.

WIMA & Shire of Denmark (in prep.) Hay River to Denmark River Foreshore Management Plan.

WIMA, Shire of Denmark & Department of Fisheries (2000) Aquaculture Development Plan for Wilson Inlet Denmark WA.

WIMA, Water Corporation, Shire of Denmark (2000) Wilson Inlet Sandbar Policy Water and Rivers Commission South Coast Region Albany, Western Australia.

ACRONYMS & STAKEHOLDERS

Acronym in Southern Shores 2009- 2030	Name in Southern Shores 2009- 2030	Acronym in Southern Shores 2001	Name in Southern Shores 2001
ACC	Albany Aboriginal Corporation	ACC	Albany Aboriginal Corporation
ACoWA	Aquaculture Council of Western Australia	ACoWA	Aquaculture Council of Western Australia
AG	Australian Government	Cw	Commonwealth of Australia
AG/CW	Australian Government/Coast West	CW/CC	Coastwest/Coastcare
AHRGAC	Albany Heritage Reference Group Aboriginal Corporation		
AIMPAC	Australian Marine Pests Advisory Council	AIMPAC	Australian Marine Pests Advisory Council
AMSA	Australian Maritime Safety Authority	AMSA	Australian Maritime Safety Authority
APA	Albany Port Authority	APA	Albany Port Authority
APB	Agricultural Protection Board	APB	Agricultural Protection Board
AQIS	Australian Quarantine Inspection Service	AQIS	Australian Quarantine Inspection Service
Bc	BushCare	Bc	BushCare
BoIAC	Bay of Isles Aboriginal Community Inc	BoIAC	Bay of Isles Aboriginal Community Inc
CCWA	Conservation Commission of Western Australia	CCWA	Conservation Commission of Western Australia
CfoC	Caring for our Country		
CoA	City of Albany	CoA	City of Albany
CPCC	Coastal Planning and Coordination Council	CZC	Coastal Zone Council
CSIRO	Commonwealth Scientific and Industrial Research Organisation	CSIRO	Commonwealth Scientific and Industrial Research Organisation
DAFWA	Department of Agriculture and Food	AgWA	Agriculture Western Australia
DEC	Department of Environment and Conservation	CALM	Department of Conservation and Land Management
DEC	DEP now part of Department of Environment and Conservation	DEP	Department of Environmental Protection
DIA	Department of Indigenous Affairs	ADD	Aboriginal Affairs Department
DMP	Department of Mines and Petroleum	DoMPR	Department of Minerals and Petroleum Resources
DoET	Department of Education and Training		
DoF	Department of Fisheries	FWA	Fisheries Western Australia
DoP	Department of Planning	MfP	Ministry for Planning
DoT	Department of Transport	DoT	Department of Transport (Marine Division)
DoW	Department of Water	WRC	Water & Rivers Commission
DRDL	Department of Regional Development and Lands		
DSC	Disability Services Commission	DS	Disability Services
EAC	Esperance Aboriginal Corporation	EAC	Esperance Aboriginal Corporation
ENAC	Esperance Nyungar Aboriginal Corporation		
EPCH	Environmental Protection matters moved to: Environment Protection and Heritage Council (EPHC)		
ERF	Esperance Regional Forum		
ERTA	Esperance Regional Tourism Association	ERTA	Esperance Regional Tourism Association
EsPA	Esperance Port Authority	EsPA	Esperance Port Authority
FESA	Fire and Emergency Services Authority	FESA	Fire and Emergency Services Authority

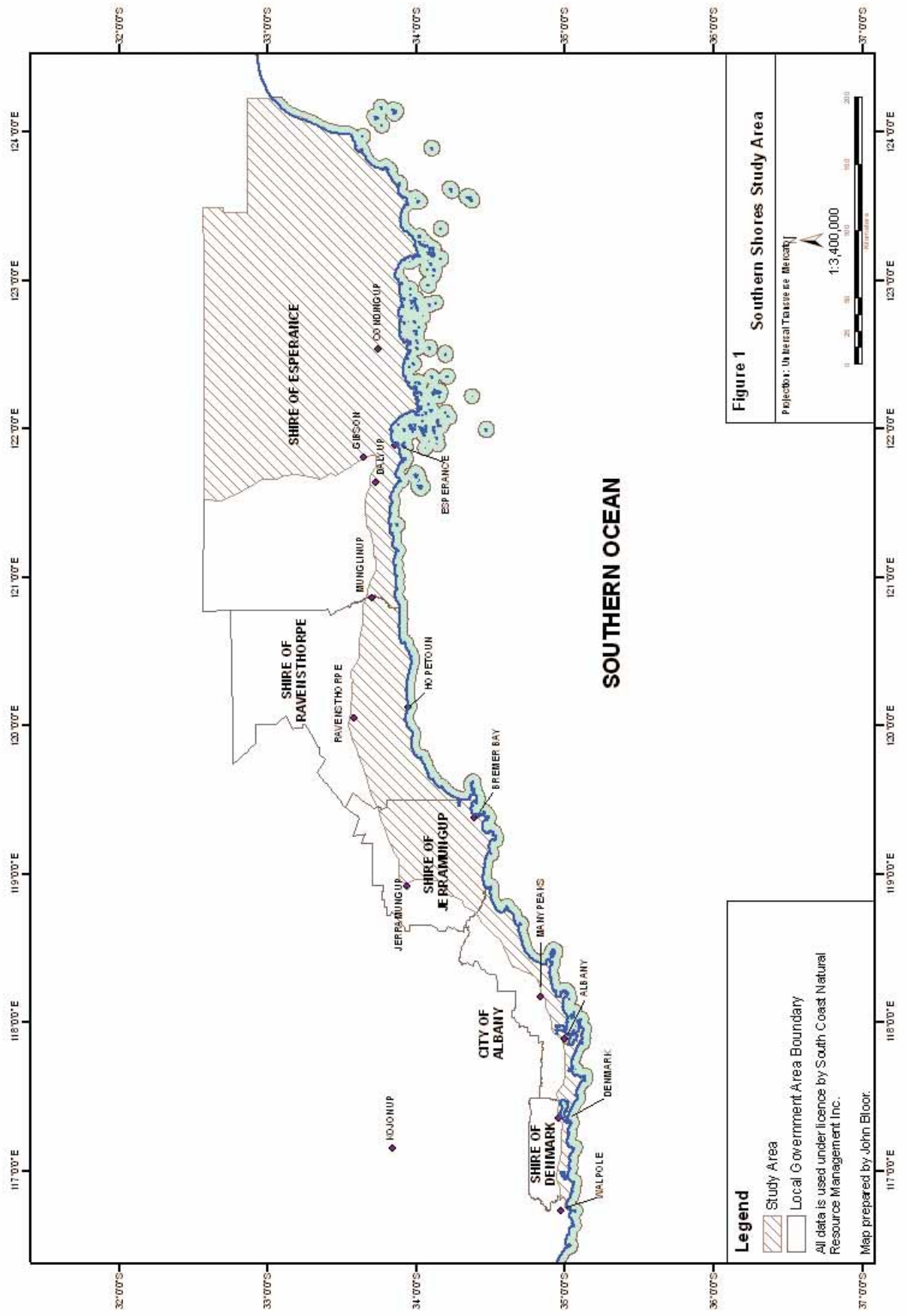
Acronym in Southern Shores 2009- 2030	Name in Southern Shores 2009- 2030	Acronym in Southern Shores 2001	Name in Southern Shores 2001
GEDC	Goldfields/Esperance Development Commission	GEDC	Goldfields/Esperance Development Commission
GLSC	Goldfields Land and Sea Council	GLSC	Goldfields Land and Sea Council
GSDC	Great Southern Development Commission	GSDC	Great Southern Development Commission
GSTA	Great Southern Tourism Association	GSTA	Great Southern Tourism Association
IMCRA	Integrated Marine and Coastal Regionalisation for Australia	IMCRA	Interim Marine and Coastal Regionalisation for Australia
Landgate	Land Information Authority (Landgate)	DoLA	Department of Land Administration
LFW	Land for Wildlife	LFW	Land for Wildlife
LGs	Local Government Authorities	LG's	Local Government Authorities
MPRA	Marine Parks and Reserves Authority	MPRA	Marine Parks and Reserves Authority
MRSWG	Marine Reserves Selection Working Group	MRSWG	Marine Reserves Selection Working Group
MRWA	Main Roads Western Australia	MRD	Main Roads Department
NIMPCG	National Introduced Marine Pests Coordination Group	NIMPCG	National Introduced Marine Pests Coordination Group
NRMMC	NRM matters moved to: Natural Resource Management Ministerial Council (NRMMC)	ANZECC	Australia & New Zealand Environment and Conservation Council
RDAC	Regional Development Australia committees	ACC	Area Consultative Committee
SAC	Southern Aboriginal Corporation	SAC	Southern Aboriginal Corporation
SCMG	South Coast Management Group	SCMG	South Coast Management Group
SES	State Emergency Service	SES	State Emergency Service
SoDe	Shire of Denmark	SoDe	Shire of Denmark
SoDu	Shire of Dundas	SoDu	Shire of Dundas
SoE	Shire of Esperance	SoE	Shire of Esperance
SoJ	Shire of Jerramungup	SoJ	Shire of Jerramungup
SoR	Shire of Ravensthorpe	SoR	Shire of Ravensthorpe
South Coast NRM Inc.	South Coast Natural Resource Management Inc.	SCRIPT	South Coast Regional Initiative Planning Team
SWALSC	South West Aboriginal Land & Sea Council	SWALSC	Noongar Land Council
SWCoE	South West Commission of Elders	SWCoE	South West Commission of Elders
WAFIC	Western Australian Fishing Industry Council	WAFIC	Western Australian Fishing Industry Council
WAMI	Western Australian Marine Institute		
WAPC	Western Australian Planning Commission	WAPC	Western Australian Planning Commission
WATC	Western Australian Tourism Commission	WATC	Western Australian Tourism Commission
WC	Water Corporation	WC	Water Corporation
WIMAG	Wilson Inlet Management Advisory Group		
WP	Western Power	WP	Western Power
		AWMA	Albany Waterways Management Authority
		SCRIC	South Coast Regional Information Centre
		WIMA	Wilson Inlet Management Authority

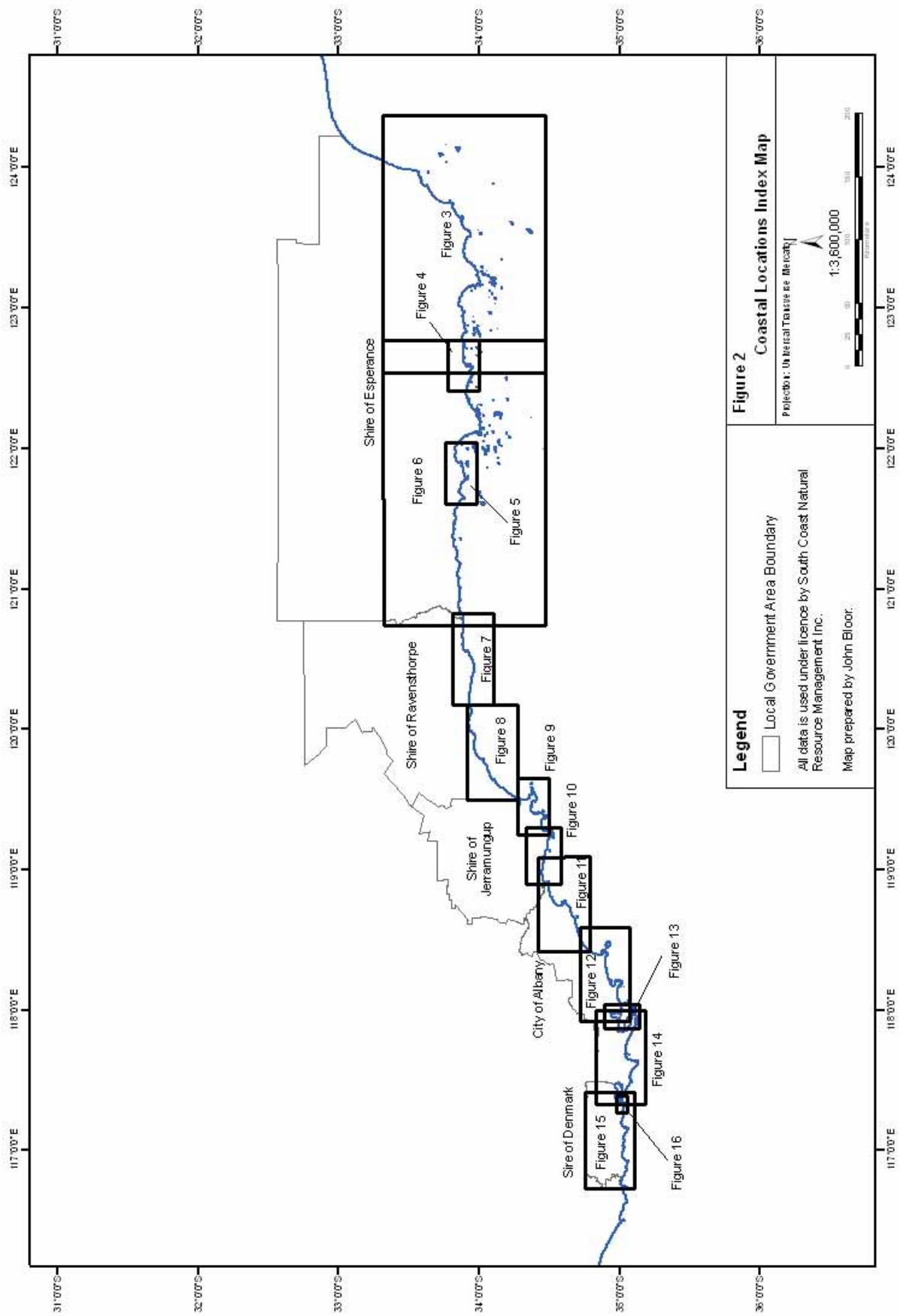
FIGURES

Southern Shores 2009 - 2030



Baxter Cliffs by Melanie Price





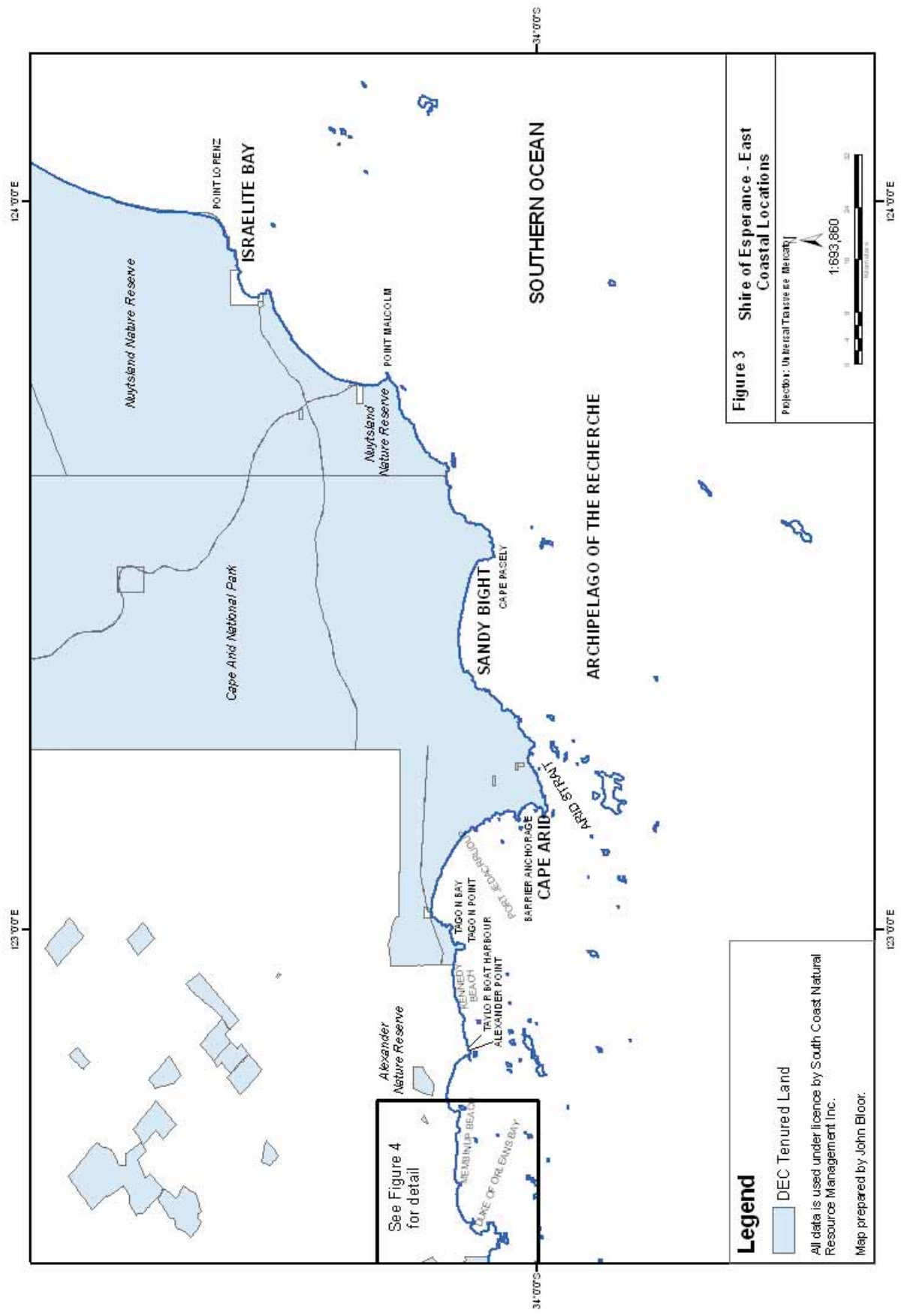


Figure 3 Shire of Esperance - East Coastal Locations

Projection: Universal Transverse Mercator



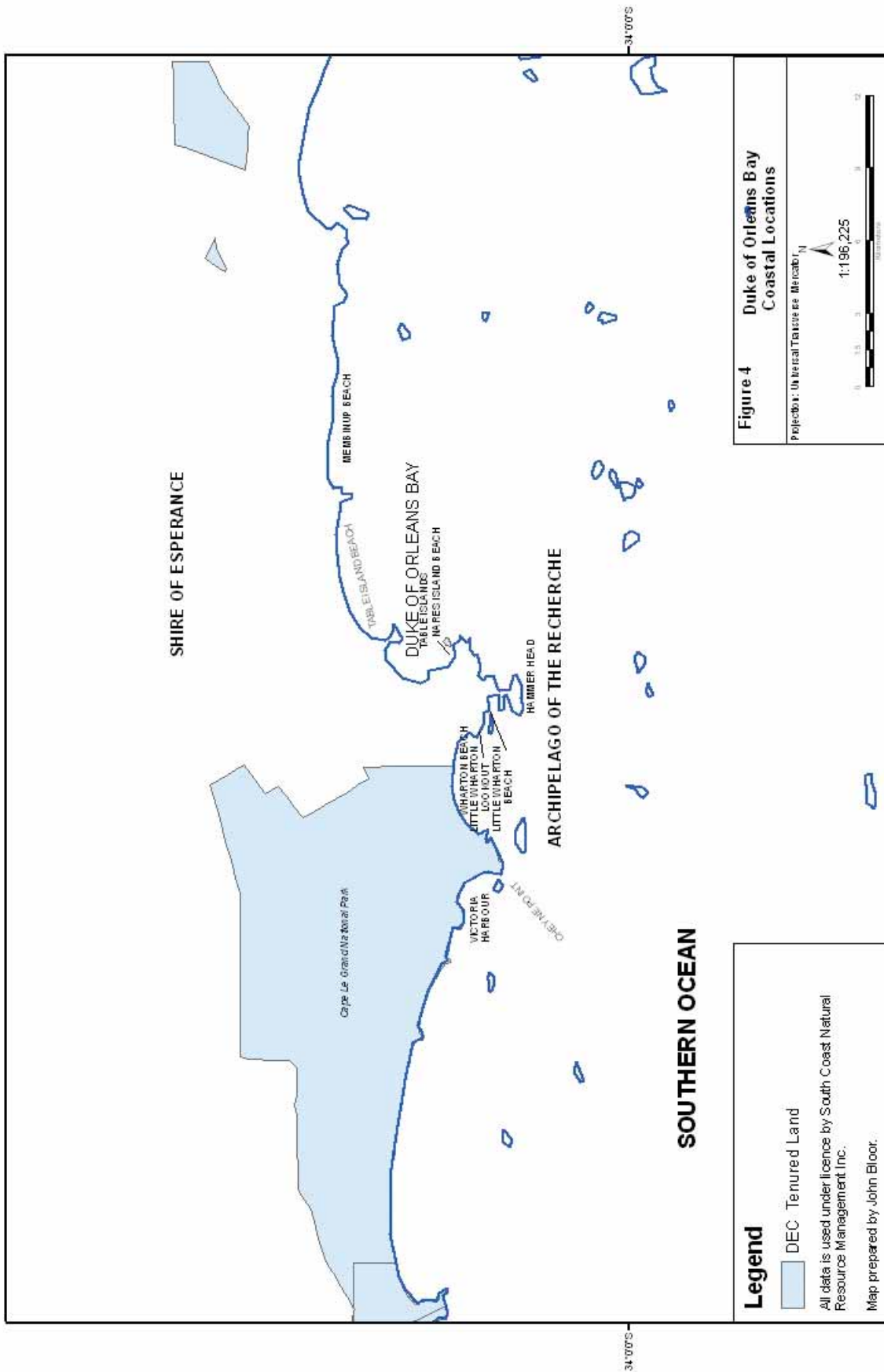
Legend

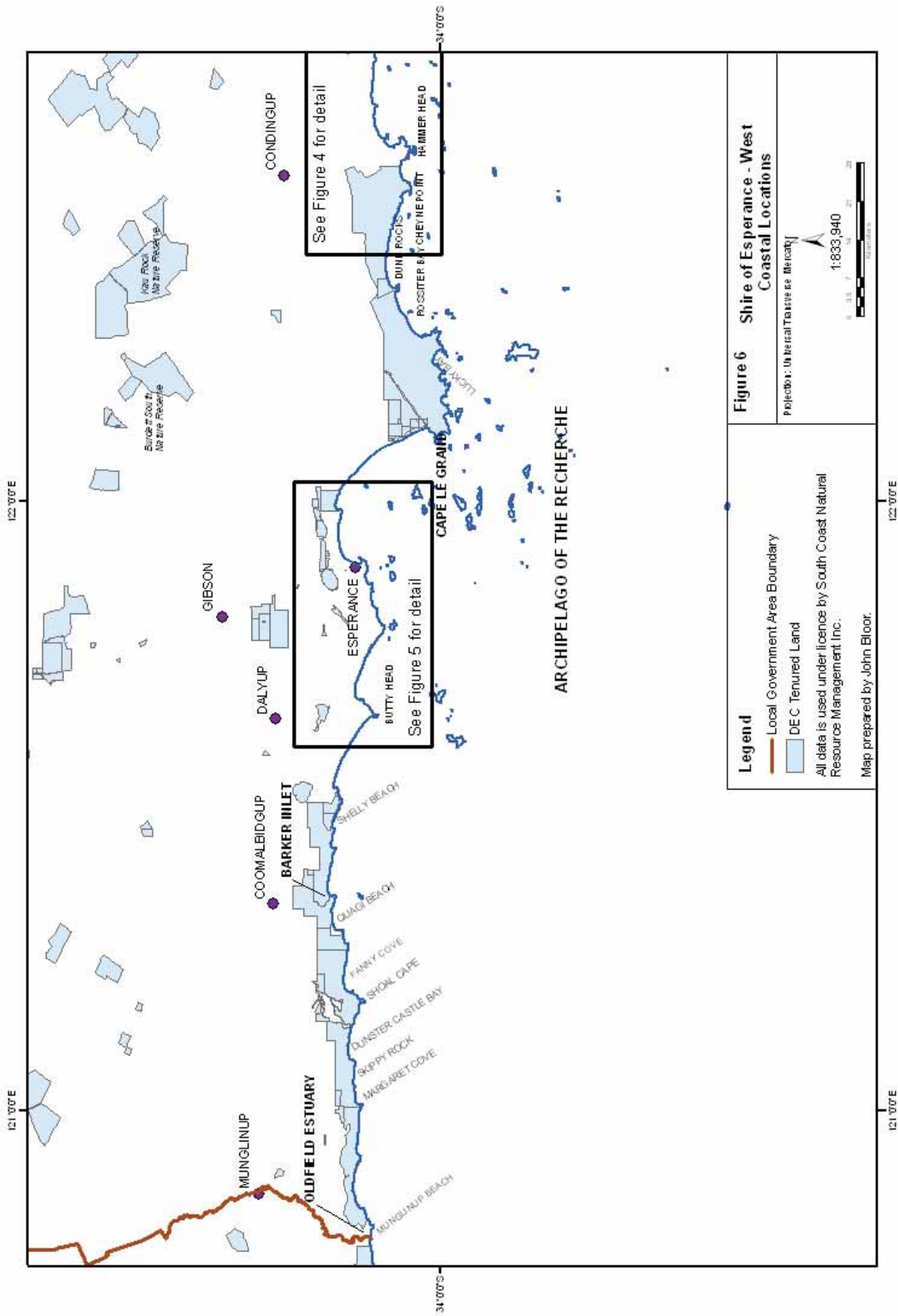
- DEC Tenured Land

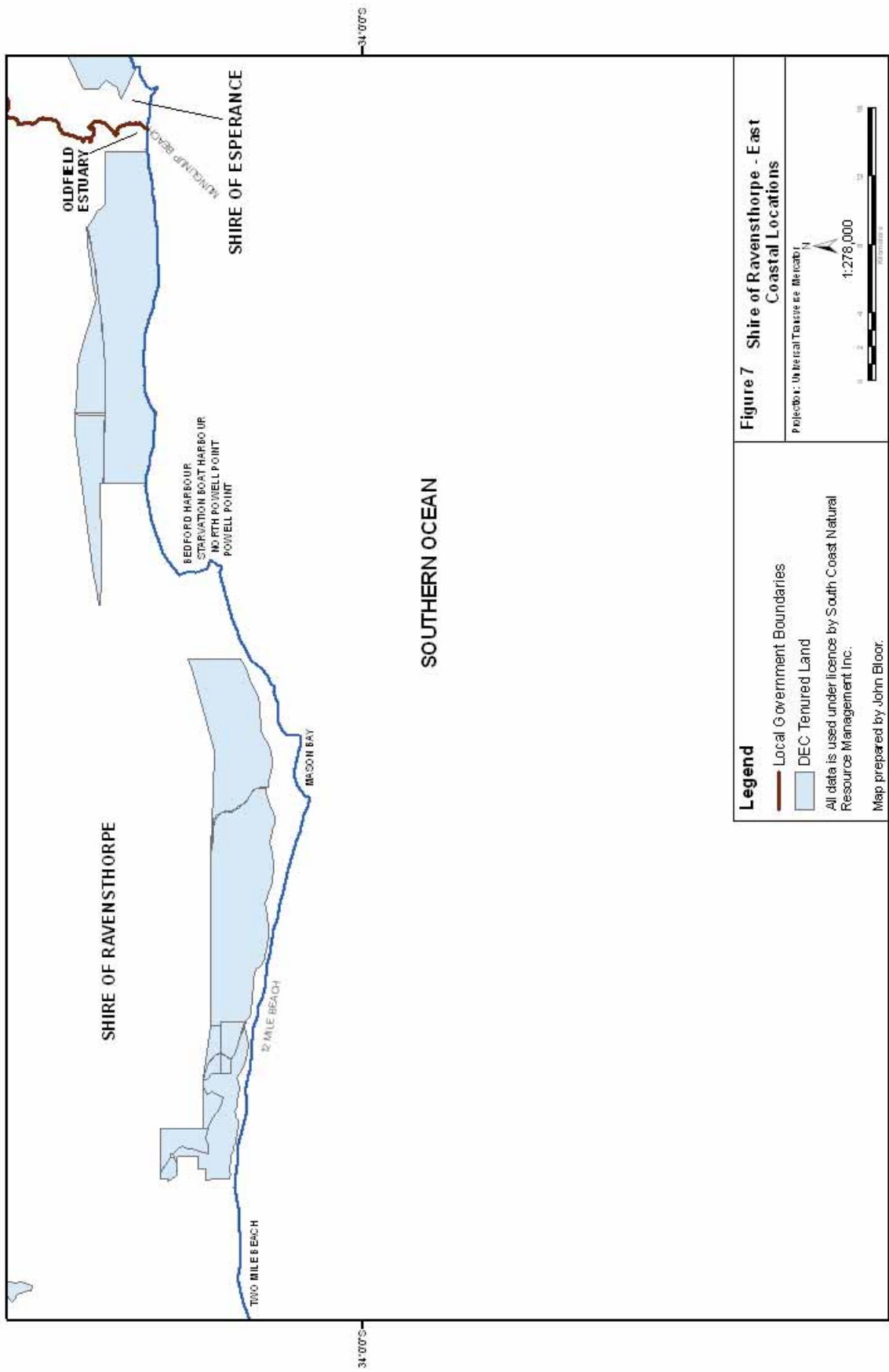
All data is used under licence by South Coast Natural Resource Management Inc.

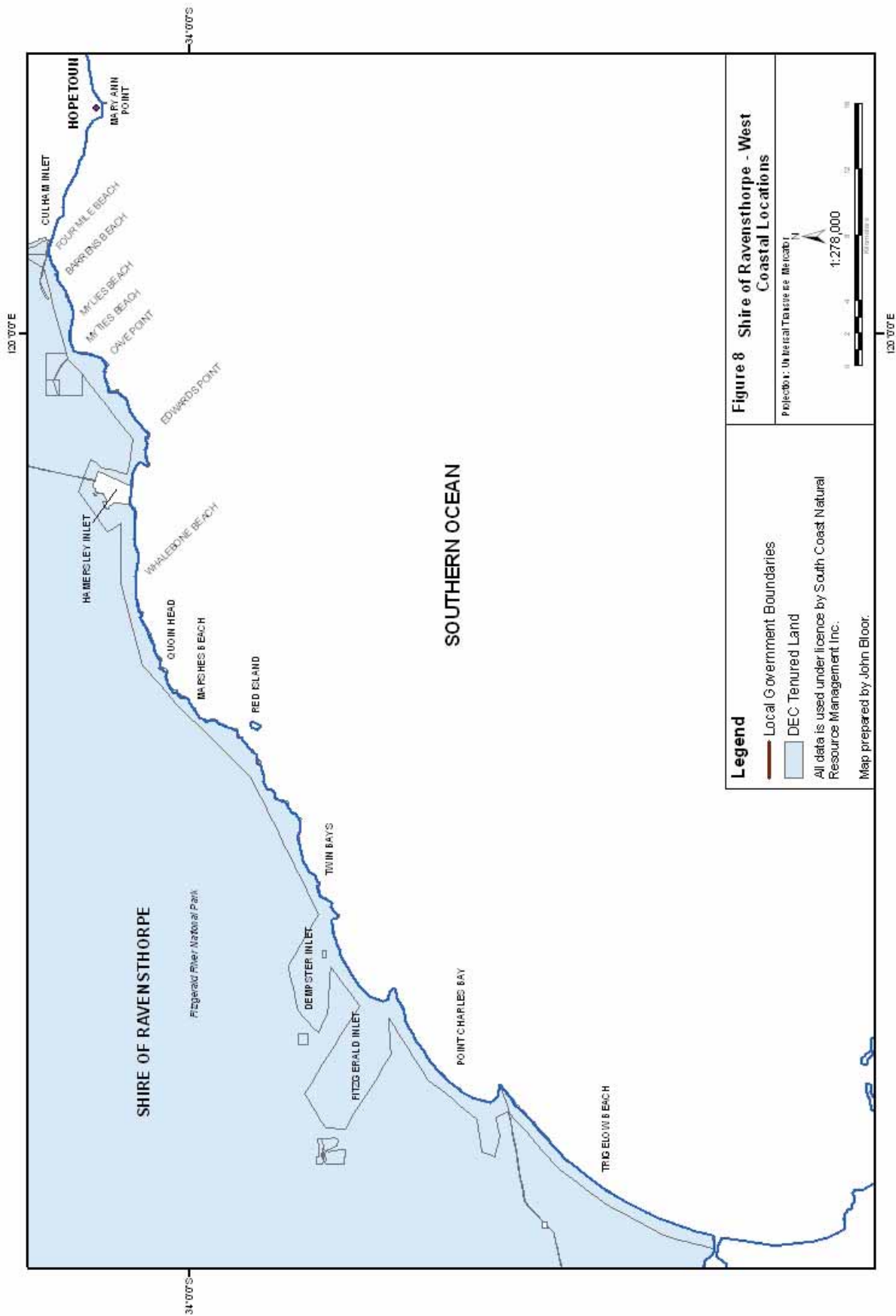
Map prepared by John Bloor.

See Figure 4 for detail









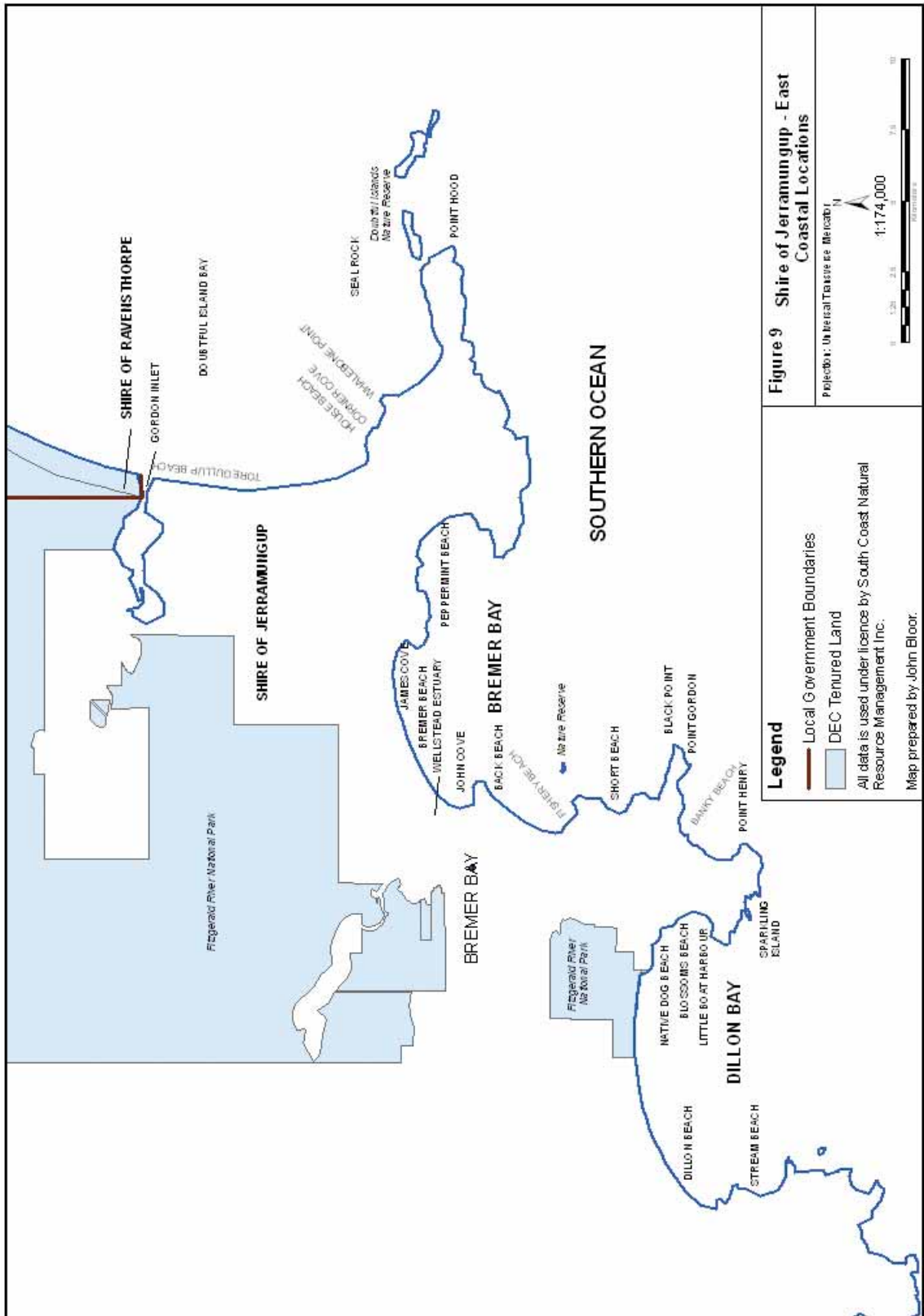


Figure 9 Shire of Jerramungup - East Coastal Locations

Legend

- Local Government Boundaries
- DEC Tenured Land

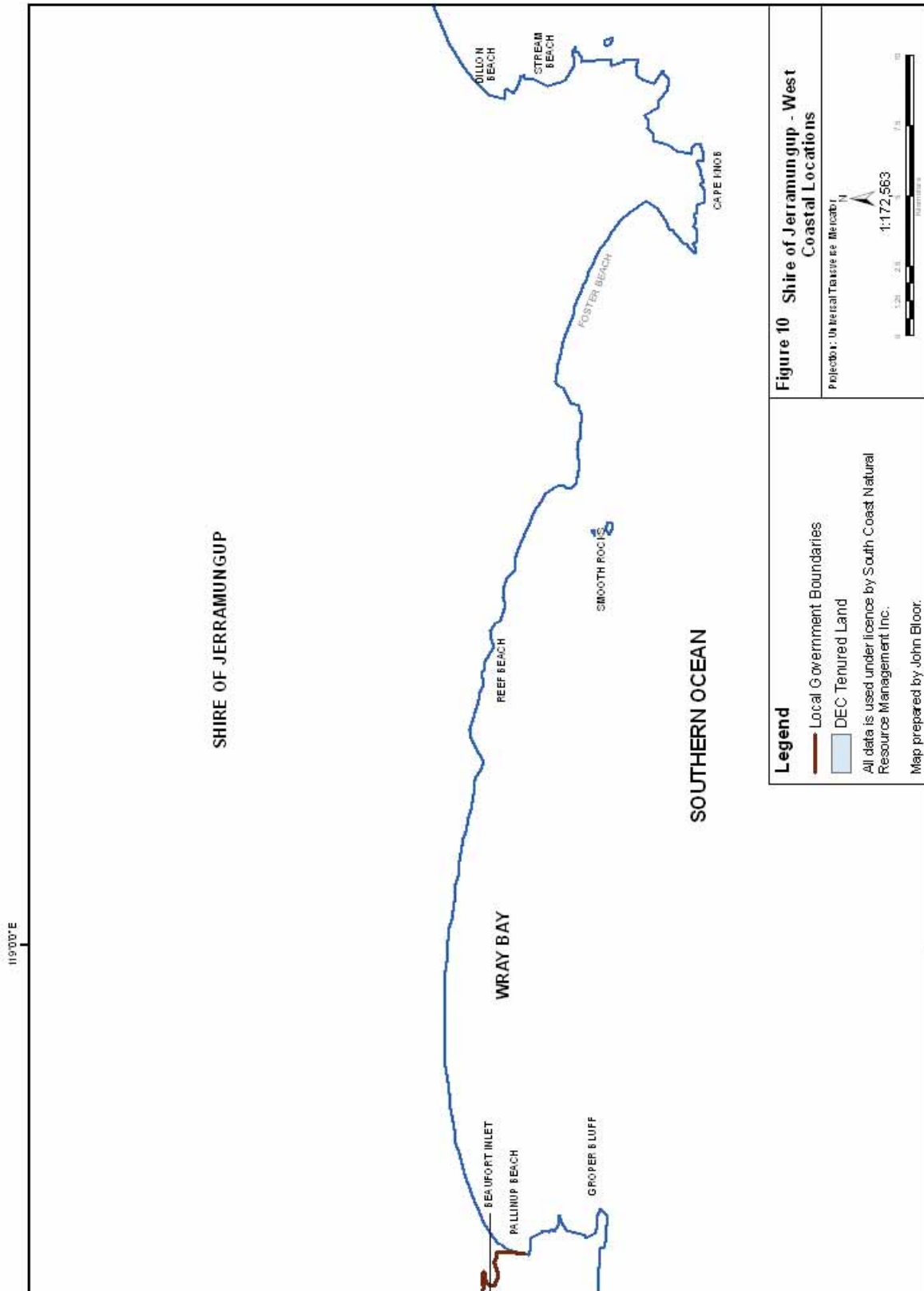
All data is used under licence by South Coast Natural Resource Management Inc.

Map prepared by John Bloor.

Projection: Universal Transverse Mercator

1:174,000

0 1.25 2.5 5 7.5 10 Kilometres



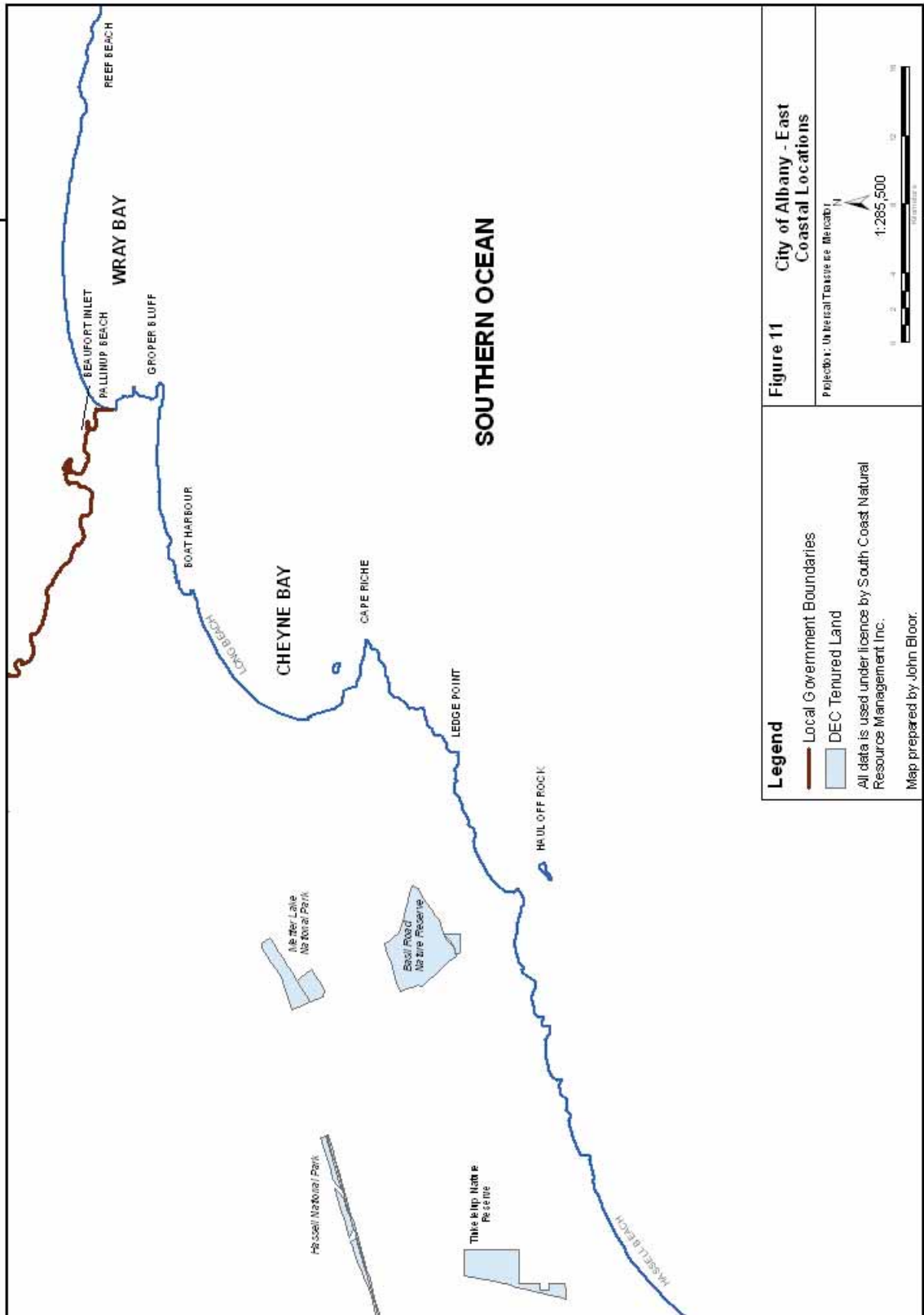
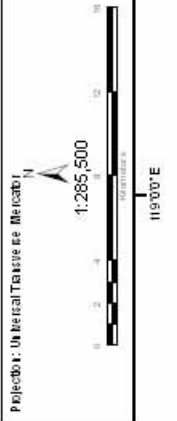


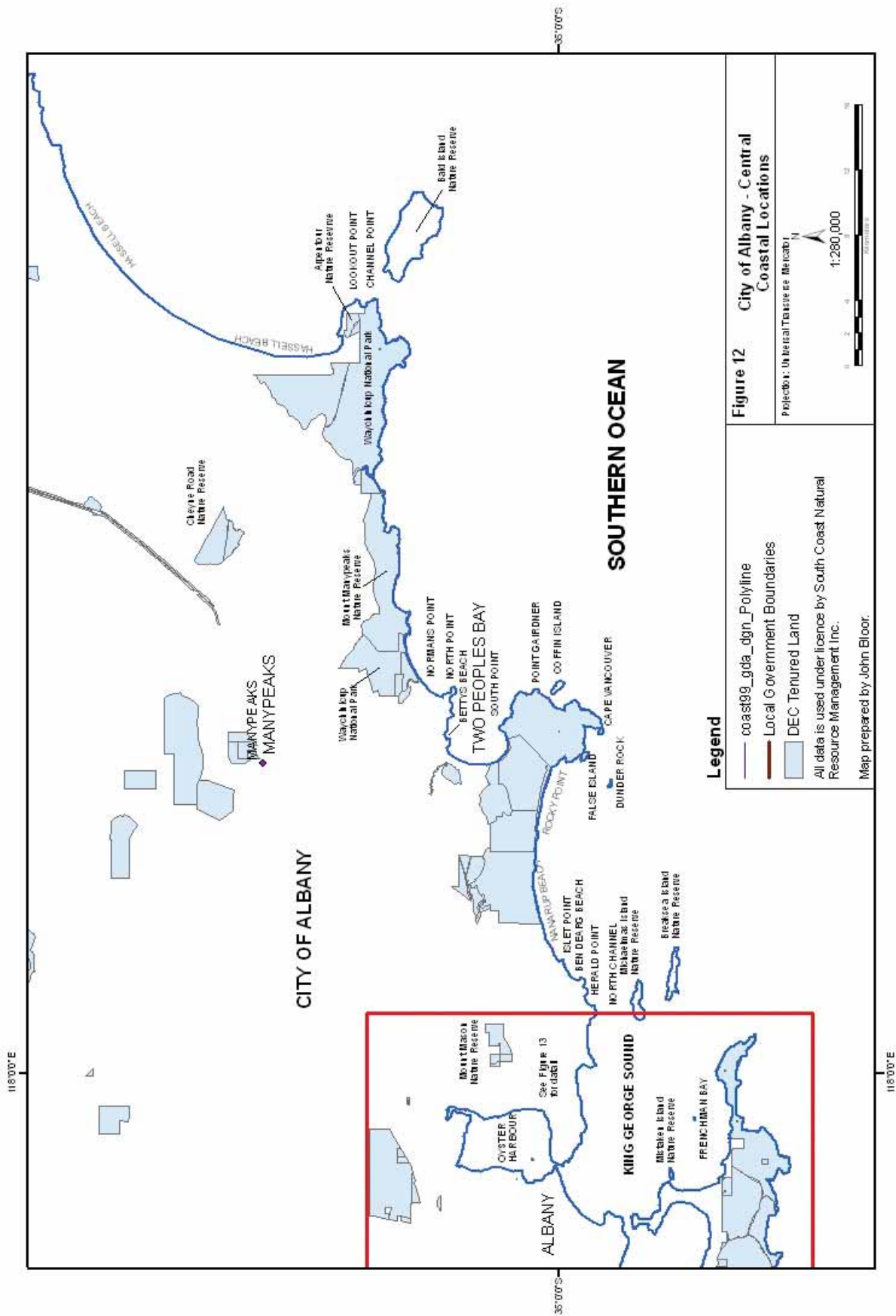
Figure 11 City of Albany - East Coastal Locations



Legend

- Local Government Boundaries
- DEC Tenured Land

All data is used under licence by South Coast Natural Resources Management Inc.
 Map prepared by John Bloor.



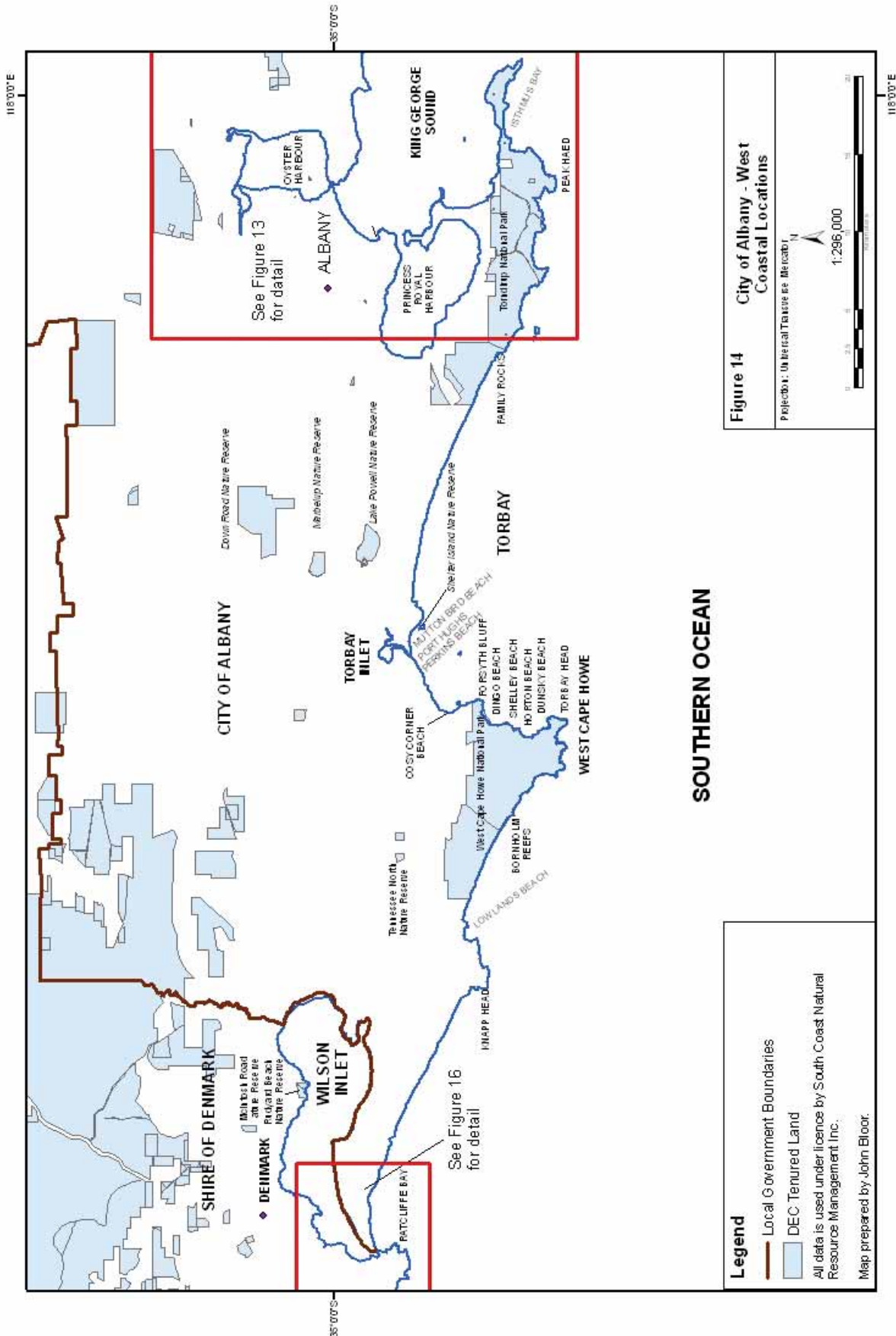


Figure 14 City of Albany - West Coastal Locations

Projection: Unlabeled Transverse Mercator

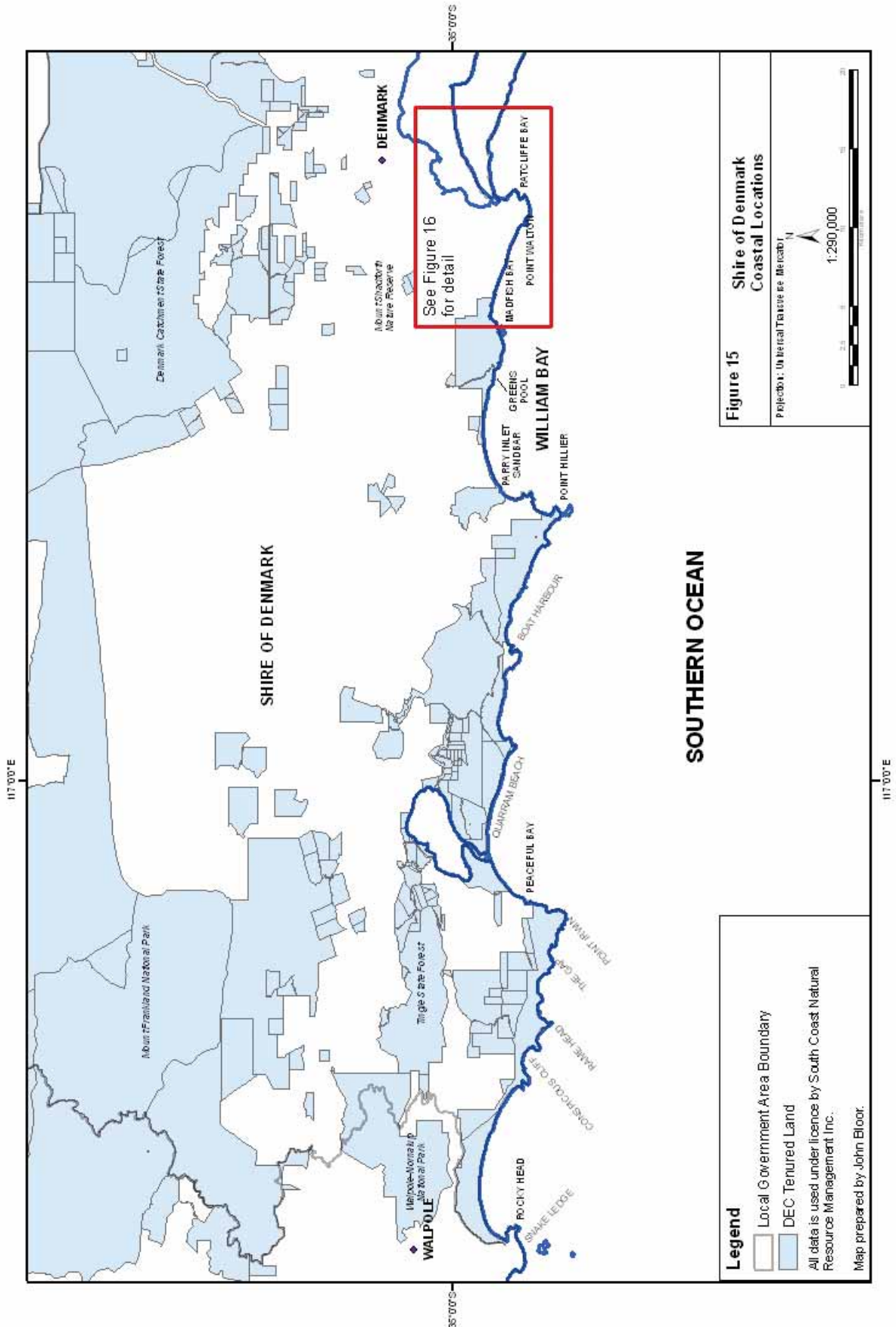
Scale: 1:296,000

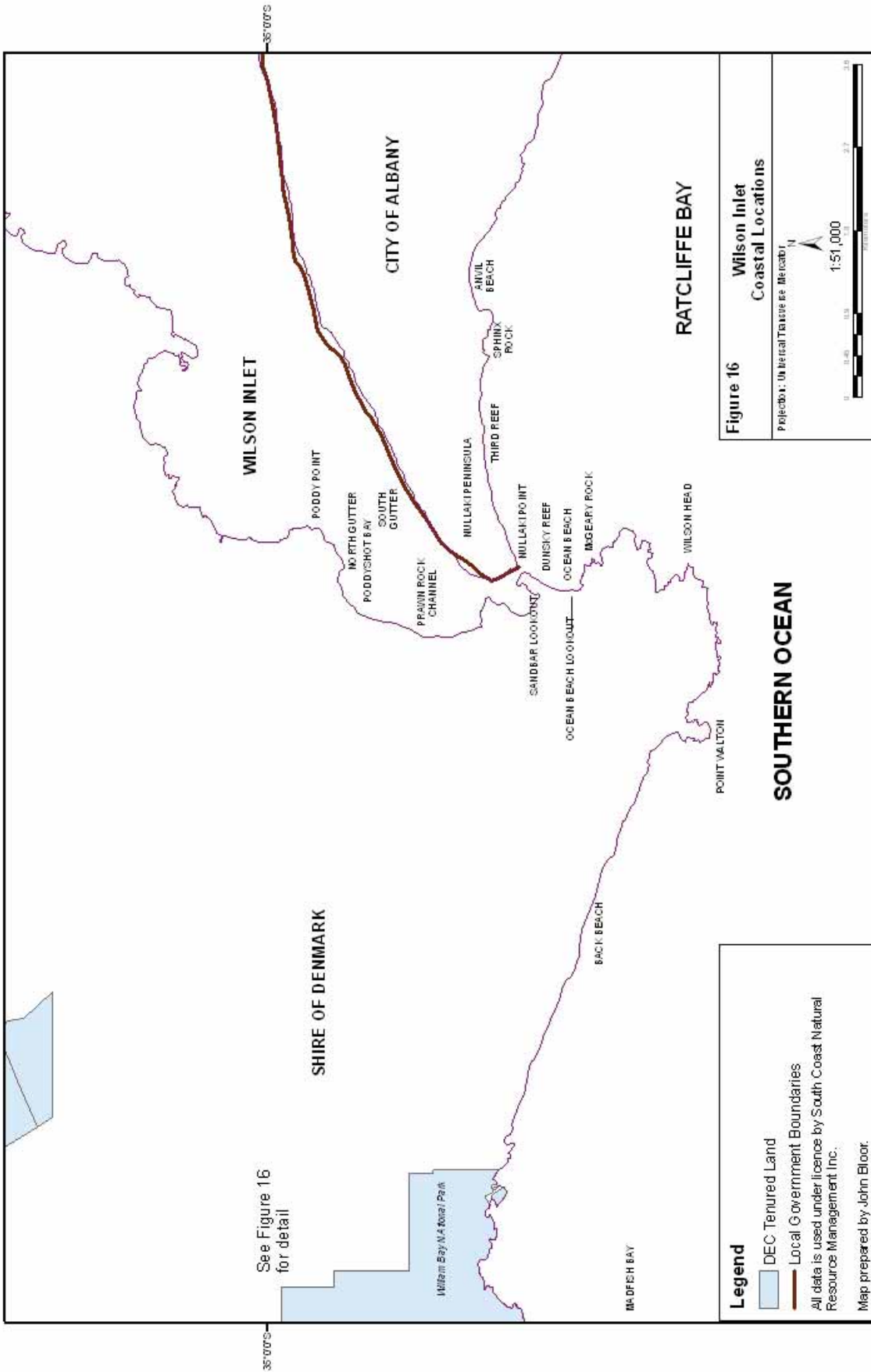
Legend

- Local Government Boundaries
- DEC Tenured Land

All data is used under licence by South Coast Natural Resources Management Inc.

Map prepared by John Bloor.





See Figure 16 for detail

Figure 16 Wilson Inlet Coastal Locations

Projection: UTM (Universal Transverse Mercator) N
 1:51,000
 0 0.40 0.80 1.20 1.60 2.00 2.40 2.80 3.00
 Kilometres

Legend

- DEC Tenured Land
- Local Government Boundaries

All data is used under licence by South Coast Natural Resources Management Inc.
 Map prepared by John Bloor.