

August 2004

# Ningaloo coast regional strategy Carnarvon to Exmouth



Year of the Built Environment 2004





# **Ningaloo coast regional strategy Carnarvon to Exmouth**

Prepared for the  
Western Australian Planning Commission  
by the  
Department for Planning and Infrastructure  
as part of the public consultation process for the  
Carnarvon-Ningaloo coast regional strategy



WESTERN AUSTRALIAN  
PLANNING COMMISSION

**August 2004**

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## Foreword



The magnificent north west coast and its Ningaloo Reef is attracting an ever increasing number of visitors. Without careful management, the Ningaloo Coast is in danger of being 'loved to death' through unsustainable people pressure and inappropriate development.

The Government's vision for the Ningaloo Coast is to protect its world-class natural values while enabling sensitive development of the region as a sought after nature-based tourism destination, for local, national and international visitors



To achieve this vision, the Government is taking a range of actions, including pursuing World Heritage listing, expanding the Ningaloo Marine Park to include the entire Ningaloo Reef and putting additional resources into management and protection of the area.

The *Ningaloo Coast Regional Strategy Carnarvon to Exmouth* is another important element of the Government's plan, which provides a comprehensive framework for sustainable tourism development on the Ningaloo Coast.

Under the Strategy, the towns of Carnarvon and Exmouth will serve as the 'gateways' to the Ningaloo coast. Coastal development in other areas will be limited to small-scale, low-impact development. High impact developments such as marinas and canals are inappropriate in areas outside Carnarvon and Exmouth and will not be permitted.

The Strategy places a moratorium on any further development in Coral Bay until public power and water infrastructure and adequate worker's accommodation have been provided and there will be a long-term cap of 3600 on the number of overnight visitors in Coral Bay.

To provide immediate support to the implementation of the Regional Strategy the Government has gazetted the Ningaloo Coast Regional Interim Development Order to establish strong new development control powers and the Ningaloo Coast Statement of Planning Policy 6.3. A statutory region scheme will also be prepared for the area.

These powers will be exercised under delegated authority from the Western Australian Planning Commission by a Ningaloo Sustainable Development Committee, which will include significant regional representation to ensure that decisions are appropriate to local conditions, and will be supported by a Ningaloo Sustainable Development Office based in Carnarvon.



In the medium term the Government intends to establish a statutory authority for the area for development control. However the scope and timing of the authority will be reviewed to take into account the outcome of the world heritage listing process that is currently underway for the area, the pastoral lease exclusion process and the effectiveness of immediate arrangements being put in place for the implementation of this strategy.

The Government has also committed to the Ningaloo coast being managed as public lands for conservation and recreation.

This Strategy follows on from a draft strategy released earlier this year and an options paper released in 2003 seeking community input. This input has guided the development of this final strategy. We would like to express our thanks for the time and effort that so many community members have contributed to the development of this Strategy.

A handwritten signature in blue ink, appearing to read 'Geoff Gallop', with a stylized flourish at the end.

Dr Geoff Gallop MLA  
**PREMIER**

A handwritten signature in blue ink, appearing to read 'Alannah MacTiernan', with a stylized flourish at the end.

Hon Alannah MacTiernan MLA  
**MINISTER for PLANNING  
and INFRASTRUCTURE**

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# Executive summary

The Western Australian Planning Commission has prepared two documents: the Ningaloo coast regional strategy Carnarvon to Exmouth and the Ningaloo coast statement of planning policy 6.3. The regional strategy is a 30 year strategic land use plan that sets the framework of planning for sustainable tourism and land use on the Ningaloo coast. The strategy is subject to review by the commission at least every five years. The accompanying Ningaloo coast statement of planning policy 6.3, included in part 2 of this document, provides a legal framework for the key elements of the strategy.

The preparation of this final Ningaloo coast regional strategy Carnarvon to Exmouth follows the release of the discussion paper, *Future directions: sustainable tourism and land use scenarios for the Carnarvon-Ningaloo coast* in July 2003 and subsequent assessment of submissions and correspondence. A series of public information sessions, community planning days, and direct consultation involving State agencies and local government, key stakeholders and the general public were undertaken in 2003. This extensive consultation on the options canvassed in the paper was actively pursued and the feedback from submissions was used to formulate a draft statement of planning policy 6.3 and the related draft Carnarvon-Ningaloo coast regional strategy. Extensive public consultation and assessment of submissions received on both the draft policy and draft strategy have been used to formulate this final strategy and the final policy.

The strategy (part 1) consists of three sections. Section one, the Regional strategy, which consists of the:

- Background
- Regional land use plan
- Coastal tourism framework
- Planning and environmental guidelines for sustainable tourism on the Ningaloo coast

Section two consists of the:

- Carnarvon structure plan
- Exmouth structure plan
- Coral Bay settlement plan

Section three is the Governance and implementation of the strategy.



The Regional strategy provides for the following key outcomes:

- Dispersal of tourism away from unmanaged, potentially environmentally harmful camping, into, small scale, low impact, managed nodes along the coast.

- Provision of detailed planning and

infrastructure delivery for Coral Bay to ensure long term environmental sustainability.

- Better, more outcome focussed management presence with establishment of dedicated resources.
- Detailed planning and environmental guidelines to assess future development.

Key decision-making processes and actions in the strategy, are established through the statement of planning policy, which will ensure development outcomes are delivered in line with the overarching objectives to protect the Ningaloo Reef and provide low key, low impact nature-based tourism opportunities and sustainable use of the Ningaloo coast.

## Background

The background defines the purpose and vision of the strategy, establishes the planning context for the strategy, identifies the guiding principles, including sustainability, of the strategy and provides an overview of the regional planning and environmental context for the strategy.

The purpose section outlines how the terms of reference for the development of the strategy, overseen by a Steering Committee, were addressed.

The strategy has eleven guiding principles which fall under the headings of sustainable development, community aspirations, aboriginal heritage, economic development, interdependence, limits of acceptable change, precautionary principle, cumulative impacts, protection of high-conservation values, protection of remoteness values and protection of biodiversity. Additionally the strategy is linked strongly to the *State sustainability strategy*.

The regional context outlines the region's economic drivers, significant centres, coastal tourism framework, access network, Aboriginal heritage and rangelands. The section also outlines the environmental characteristics and conservation values of the Ningaloo coast, providing substantial information on the region's climate, geology and geomorphology, coastal geomorphology, hydrology, oceanography, flora, fauna, and areas of environmental significance.

## Regional land use plan

The purpose of the regional land use plan is to identify the preferred land uses for specific locations within the study area. The Regional land use plan builds on the opportunities, constraints, values and planning issues outlined in the background section, and aims to guide broad land use over the 30 year life of this strategy.

It identifies ten land uses, the roles of Carnarvon, Exmouth and Coral Bay within the region, the Coastal tourism framework, coastal sectors and the access network for the region.

## Coastal tourism framework

The Coastal tourism framework will guide future tourism use on the Ningaloo coast. It is expected that a range of tourism opportunities will be provided at the coastal tourism nodes identified in the framework, ranging from camping through to ecolodge style accommodation.

Both government bodies and private operators will provide these opportunities, which will be developed as part of the implementation of the strategy. This may include staging within identified coastal tourism nodes, and staging of tourism opportunities along the Ningaloo coast.

As part of the implementation of the strategy further consideration of the staging of development along the Ningaloo coast is required.

The basis of staging of tourism development shall include:

- protection of the fragile environment of the Ningaloo Reef and coastal landforms;
- the need for proactive planning and provision of sustainable tourism development on the Ningaloo coast;

- the guiding principles of the strategy;
- objectives of the Statement of planning policy;
- development of environmental monitoring and audit systems to gauge environmental impacts (input to the cumulative impacts assessment framework);
- consideration of all new proposals within a cumulative impact assessment framework containing identified levels of acceptable change thresholds;
- limits of available infrastructure;
- water availability;
- existing environmental pressure, including that caused by current tourism use;
- provision of a range of tourism accommodation to cater for a variety in visitor experience, including limited tourism in a remote setting;
- recognition of the lack of tourism accommodation on certain sections of the Ningaloo coast;
- policies of the Planning and environmental guidelines for sustainable tourism on the Ningaloo coast;
- estimates of future tourism visitation;
- recognition of established coastal tourism nodes;
- commercial viability and opportunities for a diversity of sustainable tourism developments to be realised on the Ningaloo coast; and
- opportunities for sustainable tourism development will be offered through a public competitive tendering process.

Priority shall be given to the resolution of the Blowholes settlement. The future redevelopment of this area is recognised as an important element in the effective future

planning for the southern section of the Ningaloo coast.

- No new tourism development shall be considered outside of Carnarvon, Exmouth and Coral Bay until land vesting and management in relation to the pastoral coastal exclusion process has been agreed (this is being undertaken through a separate process).
- An implementation strategy will further consider the issues related to the staging of tourism opportunities along the Ningaloo coast.

The process for development of coastal tourism nodes is outlined in the Coastal tourism framework.



The table on page x summarises the recommendations for tourism on the Ningaloo coast.

## Coastal camping

Camping along parts of the Ningaloo coast currently occurs both in the Ningaloo Marine Park and on pastoral leases outside the Cape Range National Park. Although this has been managed in various ways by the different pastoral lessees, the activities of increasing numbers of campers is leading to some degradation of the coastal environment potentially posing a risk to the Ningaloo Reef.

- All camping along the coast will be formalised and managed across a range of experiences within remote and semi-remote settings.
- Managed camping will assist in the reduction of environmental degradation (vegetation clearance, ad hoc creation of four-wheel drive tracks, waste management, etc) caused by unmanaged camping.
- Camping may include the delineation of single camp sites to multiple camp sites,



camping grounds, small groupings, small commercial operations such as cabins or ecocamp proposals in association with coastal features or activities.

- Rationalisation of some existing campsites to prevent long-term environmental damage may occur and lead to defined and managed campsites that do not detract from the natural and remote visitor experience.

In the short-term, much of the camping will continue to occur on pastoral leases. Management of camping will occur through a partnership with pastoral leaseholders, relevant state agencies, local government and visitors camping along the coast.

## Planning and environmental guidelines

The Planning and environmental guidelines for sustainable tourism development on the Ningaloo coast are primarily intended to ensure all future semi-permanent and permanent tourist accommodation on the Ningaloo coast, outside of Exmouth and Carnarvon, are low-impact, sustainable tourism developments (some examples include campsites, camping nodes and ecolodges).

All developments proposed must address and comply with the guidelines and policies regarding

- location;

Tourism nodes (up to 500 bed equivalent)	Minor tourism nodes (up to 200 bed equivalent)	Ecolodge nodes (up to 100 bed equivalent)	Homestead tourism nodes (up to 50 bed equivalent)	Coastal camping nodes (site specific based on environmental conditions)
Blowholes Quobba Gnaraloo Ningaloo Beach Yardie Caravan Park Vlamingh Head	Red Bluff Camp Three Mile Camp Bruboodjoo Warroora Minor Tourism Node	Gnaraloo Bay Elles Camp Winderabandi Cape Range National Park Ecolodge	Warroora Homestead Giralia Homestead	The Lagoon Horse Paddock Stevens Camp Maggies Fourteen Mile Camp Jane Bay Camp Lefroy Bay Doddy's Camp
Notes on current site usage:				
Blowholes, Yardie Creek Caravan Park and Vlamingh Head are already substantially developed and currently cater for tourist accommodation numbers of the order recommended in a tourism node.	Red Bluff Camp and Three Mile Camp currently offer overnight accommodation nearing the 200 limit for a minor tourism node however Bruboodjoo presently has no infrastructure and is utilised for coastal camping so has not reached the minor tourism potential recommended. Warroora Minor Tourism Node is currently not utilised.	There are presently no ecolodges along the Ningaloo coast. A small ecocamp however operates in the Cape Range National Park at Reef Retreat. Elles Camp and Winderabandi currently cater for overnight accommodation in the form of coastal camping, however no camping is permitted at Gnaraloo Bay or Cape Range National Park Ecolodge Node at the present time.	It should be noted that the listed homesteads presently offer station stay tourist accommodation.	Cape Range National Park – includes a number of coastal camping nodes, however these were not assessed as part of this process.

- type and scale of development;
- protection of amenity and landscape values;
- water availability;
- site access;
- energy supply and building efficiency;
- foreshore setback;
- marine infrastructure;
- cyclones, flooding and drainage;
- sewage treatment;
- waste disposal;
- impacts of construction; and
- approvals required for development.

Marina and canal developments will be considered only in the designated townsites of Exmouth and Carnarvon.

## Carnarvon and Exmouth structure plans

Carnarvon and Exmouth are both well positioned to cater for higher-order and higher-impact development, infrastructure and tourism facilities. These towns provide the bookends for development of the Ningaloo region and should be promoted for their development opportunities.

The Carnarvon and Exmouth structure plans:

- identify key land use planning objectives, actions and guidelines for the future growth and development of Carnarvon and Exmouth;
- provide for the orderly development of the Carnarvon and Exmouth townsites; and

- will enable higher-order and higher-impact development, infrastructure and tourism facilities within the Ningaloo coast.

## Coral Bay settlement plan

Coral Bay has developed as a tourism settlement in a relatively ad hoc manner, and is under increasing environmental pressure from tourist visitation. Good planning, strong development controls and improved infrastructure is required if Coral Bay is to

continue to be an attractive destination for tourists seeking to experience the Ningaloo Reef in a remote holiday atmosphere.

Key Points:

- There will be a moratorium on development in Coral Bay until appropriate public sewerage, water and power infrastructure has been provided.
- No development will be permitted until an inventory of existing accommodation within Coral Bay has been completed and bed numbers comply with approved limits.
- The normal peak usage for Coral Bay is estimated at 4500 and extreme periods have seen estimates of up to 6000 visitors trying to find a “bed” in the settlement. It is proposed that accommodation in Coral Bay be capped to cater for the ordinary peak of 4500 people. This will comprise accommodation to cater for 3600 overnight visitors, 400 workers (including partners and dependants) and 500 day visitors.
- Development and redevelopment within Coral Bay shall be controlled and staged in an orderly manner.



## Governance and implementation

The State government will ensure that future management of the Ningaloo coast protects the world-class natural values of the Ningaloo coast while enabling sensitive development of the region as a nature-based tourism destination of international significance.

Government has moved to establish interim arrangements under existing legislation for the Western Australian Planning Commission (WAPC) to:

- exercise development control over the coastal strip including Coral Bay;
- establish a dedicated committee, the Ningaloo Sustainable Development Committee, to act under delegated authority from the WAPC; and
- establish a Ningaloo Sustainable Development Office to proactively coordinate the implementation of the strategy and facilitate appropriate nature-based tourism developments and to service the WAPC.

Planning control for the Carnarvon and Exmouth townsites will remain with the appropriate local authorities.

Given the significance of the area and the need for strong development controls to prevent ad hoc or inappropriate development, the Government intends to establish a statutory authority with development control powers over Coral Bay, the coastal tourism nodes and the Ningaloo coast, however the timing and scope for such an authority will be reviewed in of outcomes:

- arising from the world heritage nomination process;
- from the pastoral exclusion process; and
- from arrangements being established under the Western Australian Planning Commission and the Ningaloo Sustainable Development Office.

Planning and development controls will have a strong environmental focus, to ensure that individual developments have as little impact as possible, and that development is staged in a manner that is informed by an understanding of cumulative impacts and is consistent with the protecting the environmental values of the area. This will include proactive coordination and facilitation of low-impact, nature-based tourism developments consistent with the plans, policies and guidelines outlined in this strategy.

An Implementation strategy will be prepared to program and prioritise the actions identified in this strategy and to identify other actions necessary to ensure the effective and efficient implementation of the Ningaloo coast regional strategy Carnarvon to Exmouth.

The Government has also committed to the Ningaloo coast being managed as public lands for conservation and recreation and it is intended to vest the coastal strip currently being negotiated for exclusion from pastoral leases generally in the Conservation Commission of Western Australia, however the option of vesting the tourism nodes in the Department for Planning and Infrastructure will be considered and resolved through implementation of the strategy.

Camping along the Ningaloo coast will be formalised into managed camping across a range of experiences within remote to semi-remote settings, with management of this camping occurring through a partnership with pastoral leaseholders, relevant state agencies, local government, Aboriginal interests and visitors camping along the coast



## Ningaloo coast statement of planning policy 6.3

The statement of planning policy (SPP) provides an overarching framework, and includes the components of the Ningaloo coast regional strategy Carnarvon to Exmouth. The Ningaloo coast statement of planning policy 6.3 included in this document is for information only; official copies of the policy published in the Government Gazette are available from the State Law Publisher.

The statement of planning policy:

1. Provides state agencies, local government, community and proponents with clear guidance regarding acceptable and sustainable development on the Ningaloo coast.
2. Maintains the Ningaloo coast as an all-seasons recreation and nature-based tourism destination with growth limited to managed staged development, to ensure that the community may continue to enjoy a remote and natural experience.
3. Preserves, enhances and protects the natural environment and promotes rehabilitation of degraded areas.

4. Consolidates future residential, commercial, higher-impact tourism and industrial development to the towns of Carnarvon and Exmouth and provides strategic direction for their future growth.

Specifically, the SPP addresses planning and development issues relating to the Coral Bay settlement, coastal areas (pastoral lease exclusion areas, Cape Range National Park, Ningaloo Marine Park, local government reserves and tourism or other leases) and Carnarvon and Exmouth townsites.







# Abbreviations Glossary Reading list





# Abbreviations

AgWA	Department of Agriculture	NSDC	Ningaloo Sustainable Development Committee
AHD	Australian height datum	NSDO	Ningaloo Sustainable Development Office
BPA	Blowholes Protection Association	OE	Office of Energy
CALM	Department of Conservation and Land Management	OTC	Overseas Telecommunication Centre
CD	Chart datum	ODP	Outline development plan
Defence	Department of Defence	PLB	Pastoral Lands Board
DHW	Department of Housing and Works	RIDO	Regional Interim Development Order
DIA	Department of Indigenous Affairs	SPP	Statement of planning policy
DoE	Department of Environment	TWA	Tourism Western Australia
DoIR	Department of Industry and Resources (formerly Department of Minerals and Energy – DME, Department of Commerce and Trade – DOCAT and Department of Resources Development – DRD)	UCL	Unallocated crown land
DPI	Department for Planning and Infrastructure	UNESCO	United Nations Environmental, Scientific and Cultural Organisation
EPA	Environmental Protection Authority	WAM	Western Australian Museum
DoF	Department of Fisheries	WAPC	Western Australian Planning Commission
GDC	Gascoyne Development Commission	WC	Water Corporation
HMAS	Her Majesty's Australian Ship	WP	Western Power
ISO	International organisation for standardisation	WRC	Water and Rivers Commission
LG	Local Government		
MRWA	Main Roads Western Australia		
NCAC	Ningaloo Coast Advisory Committee		

# Glossary

## Attraction

A physical or cultural feature of a particular place that individual travellers or tourists perceive as capable of meeting one or more of their specific leisure-related needs. Such features may be ambient in nature (eg climate, sense of place, vegetation or scenery), or they may be specific to a location, such as a theatre performance, a museum or a waterfall.

## Camping/camping ground

A form of accommodation where limited hardening or built infrastructure is required. The accommodation is not permanent and therefore easily removable.

## Campsite

An area of land on which caravans/vehicles and tents fitted or designed for habitation are situated for habitation (derived from the *Caravan Parks and Camping Grounds Act 1995* WA). Unsupervised campsites have no, or minimal, supervision and rely on the patrons to camp and access in a responsible way. These campsites may or may not have facilities (eg water, toilets). Supervised campsites are camping areas where some form of supervision occurs on a regular basis either by a government agency (eg Conservation and Land Management) or a private caretaker (eg station caretaker). The campsite may or may not have facilities (eg water, toilets).

## Caring for country

An Aboriginal term for the traditions derived from the individual and group identities attained from their own particular area of land and sea, often referred to as country.

Throughout life Aboriginal people retain their cultural association with, and responsibilities to look after, their traditional country - even though they may no longer have ownership or even access to it. It is this sense of responsibility to country that makes indigenous groups particularly keen to be involved in the management of coastal areas.

## Covered accommodation

Any form of accommodation under a permanent roof. Within this category there is a spectrum of accommodation types from single sleeping unit huts to multiple sleeping unit structures. Covered accommodation includes ecolodges, chalets, caravan parks and ecocamps.

## Day use site

An area which is designated and managed to provide visitor access and amenity for day use only (eg parking facilities, barbecues, toilets, picnic areas), but not for overnight stays or longer. Signage, monitoring and supervision are part of the education for such sites. This will generally occur where the area is perceived to be sensitive to change or may have been notably degraded already through four-wheel drive access and unsupervised camping. Rehabilitation of former camping areas to a revegetated state will assist in the education and awareness of day users.

## Development

The *Town Planning and Development Act 1928* defines development as including any demolition, erection, construction, alteration of or addition to any building or structure on the land and the carrying out on the land of any excavation or other works.

## Ecocamp

A semi-permanent tented camp. An ecocamp will have tented public areas as well as sleeping accommodation. They are generally smaller than ecolodges. These low-key accommodations are constructed primarily of canvas or canvas like material, that can be easily and quickly removed.

## Ecolodge

An industry label used to define a category of permanent accommodation that meets the philosophy and principles of ecotourism. A type of tourist accommodation that requires special care in design, construction and operation so as not to destroy the very resources or qualities tourists come to experience. An ecolodge should incorporate elements such as sustainable power generation, low energy passive design, minimal water use, ecologically sensitive waste disposal and recyclable processing of all waste with no pollutant product. An ecolodge can also consist of tented or canvas sleeping accommodation that is of a more permanent nature to that found in an ecocamp.

## Ecotourism

Ecotourism is nature-based tourism that involves education and interpretation of the natural environment and is managed to be ecologically sustainable. There are five key principles that are fundamental to ecotourism. They are that ecotourism is nature based, ecologically sustainable, environmentally educative, locally beneficial and generates tourist satisfaction.

## Informal boat-launching

This occurs where boats are launched at locations other than designated constructed boat-launching sites, eg beaches.

## Low-impact development

Means the use and development of land in such a manner that it does not detract from the rural and natural amenity of the locality, and includes the following criteria:

- (i) development being located so as to avoid ridge lines, escarpments or visually exposed sites and situated where screening vegetation or land form can be utilised;
- (ii) use and development being sensitively located and designed to minimise impact on vegetation, water courses, soil quality and existing land uses;
- (iii) development being of a scale and nature so as to be self-sustaining on the lot, or demonstrating the ability to provide servicing without significant modifications to existing infrastructure;
- (iv) development that by the nature of its scale, design, colours, materials, landscaping and use, has minimal impact on its site and surrounding areas; and
- (v) where the land use and any development has a minimal off-site consequences.

Low-impact developments include tourism accommodation developments that recognise the principles of ecologically sustainable development and displays sensitivity to the area in which it operates.

## Nature-based tourism

A broad term that includes a range of tourism experiences, including adventure tourism, ecotourism, and aspects of cultural and rural tourism. Indigenous culture is included as a part of nature-based tourism because of its inextricable link with the natural environment.



## **Environmental protection management areas**

Multi-use areas which have high conservation values and should be dedicated primarily to the protection and enjoyment of natural or cultural heritage, to maintenance of biodiversity and/or maintenance of ecological life-support systems.

## **Remote**

A site or visitor attraction is considered remote when it is largely unmodified or undeveloped and displays a high degree of naturalness and exhibits natural qualities with negligible evidence of human activity, formed access, unnatural visual impacts, or noise. Remote sites and attractions are not connected to services such as power, water, sewerage or waste disposal. It may also be perceived to be an area that has few permanent residents and is isolated from services, thus providing a closer interaction with the non-human environment. Change due to human use is not evident.

## **Remote camping**

Camping, in defined and managed areas, which takes place in an area which is not connected to any services or infrastructure.

## **Semi-remote**

A site or visitor attraction is considered semi-remote when it is predominately unmodified but may contain some minor evidence of human activity, noise and development, including roads and walking tracks. Semi-remote sites and attractions have limited services such as power, water, sewerage or waste disposal. Change due to human use is evident, but subordinate to the naturally established landscape.

## **Semi-remote camping**

Camping, in defined and managed areas, within an area which provides some services or infrastructure such as hardening of campsites, provision of designated fireplaces, or toilet facilities.

## **Station accommodation**

A range of covered and semi permanent accommodation provided in conjunction with the station homestead and related to a working pastoral lease. The pastoral-based tourism activity must be supplementary to the operation of the station and requires a diversification permit from the Pastoral Lands Board and necessary planning and environmental approvals.

## **Sustainability**

Meeting the needs of current and future generations through integration of environmental protection, social advancement and economic prosperity.

## **Sustainable design**

The use of design principles and strategies which help reduce the ecological impact of buildings, by reducing the consumption of energy and resources, and by minimising disturbances to existing vegetation.

## **Sustainable tourism**

Tourism that can be carried out without damaging the long-term health and integrity of natural (and cultural) environments.



## **Tourist accommodation**

Establishments, which provide predominantly short-term accommodation (ie for periods of less than two months) to the general public. These include hotels, motels and guest houses with and without facilities; holiday flats, units and houses; and visitor hostels. Caravan parks which provide either predominantly short-term (ie for periods of less than two months) or predominantly long-term (ie for periods of two months or more) accommodation to the general public and which provide powered sites for caravans and toilet, shower and laundry facilities.

## **Viewshed**

The views and visual aesthetics offered by a particular site and/or buildings.

## **World best practice**

Achieving a level of business or operational performance that meets industry agreed to, world-class bench marks.

# Reading list

*Aboriginal Heritage Act 1972 (WA)*

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# Part one

## Ningaloo coast regional strategy







# Section one

## Regional strategy





## 1.1 Background

### 1.1.1 Introduction

#### Overview

The regional strategy is a 30 year strategic planning framework for the study area which:

- Defines a vision for the future.
- Provides an overview of the planning, regional, sustainability and environmental context.
- Identifies the guiding principles for the future.
- Contains the Regional land use plan, which identifies the regional land uses and access network.
- Contains the Coastal tourism framework for the Ningaloo coast.
- Outlines the Planning and environmental guidelines for sustainable tourism on the Ningaloo coast.
- Contains structure plans for Carnarvon and Exmouth and a settlement plan for Coral Bay.
- Outlines the immediate planning and development controls being implemented Ningaloo coast.
- Provides the basis for the preparation of the Ningaloo coast statement of planning policy 6.3.

#### Study area

The study area for the Ningaloo coast regional strategy Carnarvon to Exmouth lies within the Gascoyne Planning Region. The study area extends north from the town of Carnarvon to the Exmouth Gulf, includes all land west of the North West Coastal Highway, Exmouth Gulf and Murion islands and extends to the western seaward boundary of the proposed and existing marine park (figure 1).

#### Purpose

The Western Australian Planning Commission (WAPC) has prepared the Ningaloo coast regional strategy Carnarvon to Exmouth, following consideration of submissions received on the draft Carnarvon-Ningaloo coast regional strategy released in May 2004. The draft itself was largely based upon the discussion paper, *Future directions: sustainable tourism and land use scenarios for the Carnarvon-Ningaloo coast (Future directions)* in July 2003.

Term of reference	Aquital
Review the Gascoyne coast regional strategy and incorporate the recommendations of other relevant planning documents, including the Exmouth-Learmonth (North West Cape) structure plan, relevant statements of planning policy and Hope for the future – the Western Australian state sustainability strategy.	Part 1
Co-ordinate with other concurrent planning activities in the study area such as the Ningaloo Marine Park management plan, Cape Range National Park management plan, Ramsar listings as wetlands of international significance, and the state's policy commitment to seek world heritage nomination.	Coordination was undertaken with the other concurrent activities to ensure complimentary and integrated outcomes for the area.
Identify the most appropriate and sustainable long-term tourism and development options for the coast within the study area.	Part 1, s1.2 and s1.3
Identify and recommend the preferred vesting and management options for the conservation and recreation strip along the coast.	Part 1, s3
Prepare revised structure plans for Carnarvon and Exmouth.	Part 1, s2.1 and s2.2

Figure 1: Study area



Term of reference	Aquittal
Prepare settlement or site plans for Coral Bay and the future Blowholes tourism node.	Part 1, s2.3 and s1.2
Prepare environmental and planning guidelines for tourism development on the Ningaloo coast.	Part 1, s1.3
Prepare an implementation strategy to achieve sustainable outcomes for the study area.	Part 1, s3

The preparation of the strategy was guided by a steering committee, reporting to the Western Australian Planning Commission, that was supported, as required, by a community stakeholder advisory group (community representation) and a technical advisory committee. The community stakeholder advisory group proposed a new vision for the Ningaloo region.

## Vision

The *State planning strategy* outlined the following vision for the Gascoyne Region.

***"In the next three decades, the Gascoyne Region will expand through increased development of tourism, horticulture, mining, fishing and aquaculture. The Shark Bay World Heritage Area, the Ningaloo Marine Park and Cape Range National Park, as well as the hinterland attractions of Mt Augustus and the Kennedy Ranges will be among the prime environmental tourism assets in the state. Aboriginal tourism experiences will also play a growing role in the development of tourism in the region. The region's population will increase significantly as its economy grows, and major centres will develop. The region will achieve the highest standards of marine and terrestrial environment management and protection to ensure that its natural assets are well managed and, where necessary, protected."***

The Ningaloo coast community stakeholder advisory group has prepared the following community vision:

***"The [Ningaloo coast] is an internationally recognised sustainable (social, economic, environmental and spiritual) success, which combines the preservation of ecosystems with low-impact tourism. This is achieved through a management plan for conservation and public usage that is well funded, protected by legislation and supported through education and the wisdom of heritage."***

The vision of the Ningaloo coast regional strategy has been carried forward from the *Gascoyne coast regional strategy*:

***"To develop the [Ningaloo coast] into a tourism region of international significance focussing on its unique natural features. This would be achieved in a manner that is ecologically sustainable, retains the sense of wilderness and provides local and regional economic and social benefits. The development of existing and new industries which are complementary to this vision will be encouraged."***

These visions reflect the environmental and cultural significance of the Ningaloo coast and the desire to see the coast managed sustainably. The priorities and principles of these visions are reflected in this strategy.

## 1.1.2 Planning framework

The *Western Australian Planning Commission Act 1985* allows the Commission to prepare planning strategies for the state to co-ordinate and promote regional land use planning and land development, guide government departments, authorities and local government.

The land use planning system is fundamental to the achievement of community goals and



aspirations. However, rather than drive these processes, its role is facilitative, ensuring land use and planning decisions improve the opportunities of the community to fulfil goals of creating wealth, caring for the environment and building sound communities.

The *State planning strategy* provides a strategic guide for land use planning to the year 2029 aimed at developing a land use planning system to help the state achieve key goals. These goals include generating wealth, conserving and enhancing the environment, and building vibrant and safe communities for the enjoyment of this and subsequent generations of Western Australians.

The principles set below come from the *State planning strategy* and should guide future decision-making throughout government through the strategies and actions for each principle. While each principle is unlikely to be met equally in each instance, the best outcome for the State's future requires that proposals and plans address each principle fully.

## State planning framework

### Environmental principle

To protect and enhance the key natural and cultural assets of the state and deliver to all Western Australians a high quality of life which is based on environmentally sustainable principles.

The pursuit of environmental strategies will contribute to a more sustainable future. The strategies are designed to:

- increasingly use energy sources which have minimal impact on the environment;
- prevent further loss in biodiversity;
- ensure that air, water and soil quality are protected and where necessary, improved;
- reduce consumption of materials and promote recycling;
- promote management and protection of resources;
- protect land and seascape;
- preserve public access;
- enhance the quality of life for all Western Australians; and
- and protect the state's cultural heritage.



## Community principle

To respond to social changes and facilitate the creation of vibrant, accessible, safe and self-reliant communities.

To achieve this principle, strategies are designed to:

- monitor the amount and rate of population growth;
- respond to the changing needs of the population;
- improve the linkage between land use planning and the provision of human services;
- provide a range of housing opportunities;
- build a sense of community through the design of accessible settlements and public facilities; and
- incorporate opportunities for consultation and include the views of local communities and groups with specific needs in local and regional plans.



- provide for the likely growth of downstream processing industries and value-adding industries; and
- make allowance for the needs of new industries and technologies and support the further development of State and Regional centres of business, culture and administration.

## Infrastructure principle

To facilitate strategic development by ensuring land use, transport and public utilities mutually are supportive.

To achieve this principle, strategies are designed to:

- integrate land use and transport planning;
- provide efficient freight transport routes and hubs;
- plan for public transport and balanced travel;
- ensure the efficient, progressive development and servicing of land;
- promote the development and optimal use of strategic infrastructure;
- support the development of major nodal urban settlements; and
- ensure that the provision of public utilities to country areas is based on economic and social considerations and promote public facilities as a means of assisting the creation of regional wealth and providing cultural benefits.

## Economic principle

Activity to assist in the creation of regional wealth, support the development of new industries and encourage economic activity in accordance with sustainable development principles.

To achieve this principle, strategies are designed to:

- provide flexibility in the planning system to meet the needs of small business;
- minimise delays in government approval processes;

## Regional development principle

To assist the development of regional Western Australia by taking into account the region's special assets and accommodating the individual requirements of each region.

The *State planning strategy* identified a broad regional vision statement and the key planning priorities for each of the state's 10 planning regions, including the Gascoyne Region, which provides the focus for integrated planning to enhance the future prospects of each region.

A strategic planning approach with the use of guiding principles and the preparation of broad strategic plans and policies provides guidance for detailed actions at a local level.

## **Planning priorities for the Ningaloo coast region from the *State planning strategy***

The following priorities are identified in the *State planning strategy* to be implemented in the future development for the Ningaloo coast.

The regional planning strategy is to be kept current and updated as required for the Ningaloo [Gascoyne] coast to:

- provide a broad framework for land use planning;
- guide tourism, economic and urban development; and
- guide the management of environmental areas.

Area development strategies or structure plans for specific issue areas required in Gascoyne Region to be prepared to:

- provide integrated multi-disciplinary land use development plans addressing issues of competing demands;
- facilitate the sustainable development of natural resources; and
- coordinate the provision of strategic infrastructure.

The *State planning strategy* recommended that significant natural and environmental areas in the region be protected and infrastructure

requirements be satisfied through the following requirements for future planning:

- incorporate CALM management strategies into future regional planning and development initiatives;
- review management plans for tourist areas to protect them from future degradation;
- promote environmentally responsible tourist operations;
- provide water and sewerage services to tourist centres, especially Coral Bay; and
- implement transport initiatives such as the *Gascoyne regional transport strategy*.

## **Previous studies**

As the Ningaloo coast has grown in tourism popularity in recent times, more attention has been directed to the area by government at all levels. The core planning and other related documents that have been reviewed to provide a context for the development of this strategy are listed below. A complete list of all documents referenced is provided in the Reading list. This strategy supersedes all previous strategic planning documents where there is any inconsistency.

### **Statutory planning documents**

- *State coastal planning statement of planning policy 2.6.*
- *Shire of Carnarvon town planning scheme 10.*
- *Shire of Carnarvon town planning scheme 11.*
- *Shire of Exmouth town planning scheme 3.*

### **Strategic planning studies**

- *Coasts WA: better integration - the Western Australian Government's response to the Coastal taskforce report.*
- *Coral Bay settlement plan 1998.*



- *Coral Bay planning strategy.*
- *Coral Bay taskforce report on Infrastructure requirements for Coral Bay.*
- *Exmouth coastal strategy 1992.*
- *Exmouth-Learmonth (North West Cape) structure plan.*
- *Exmouth structure plan 1988.*
- *Gascoyne coast regional strategy.*
- *Guidelines for tourism development on the North West Cape.*
- *Draft Carnarvon coastal strategy.*
- *Environmental Protection Authority report and recommendation on the proposed Coral Coast Resort at Mauds Landing.*
- *EPA Cape Range position statement 1.*
- *North West Cape Wilderness Lodge proposal (reference file).*
- *Designing tourism naturally - A review of world best practice in wilderness lodges and tented safari camps.*
- *North West Cape tourism development study.*

### Other studies

- *Hope for the future - The Western Australian state sustainability strategy.*
- *State Government Squatter Policy.*
- *A 12-Month survey of recreational fishing in the Gascoyne Bioregion of Western Australia during 1998-99.*
- *Draft fisheries environmental management plan for the Gascoyne region.*
- *Gascoyne regional transport strategy.*
- *Roads 2020 regional road development strategy – Gascoyne.*
- *First report of the Legislative Council Select Committee on Cape Range National Park and Ningaloo Marine Park.*
- *Cape Range National Park management plan 1987-1997.*
- *A representative marine reserve system for Western Australia.*
- *Ningaloo Marine Park management plan 1989-1999.*
- *Ningaloo Marine Park (Commonwealth Waters) management plan.*
- *Jurabi and Bundegi coastal parks, and Muiron islands management plan 1999-2009.*
- *Exmouth Gulf coastal plan.*

## 1.1.3 Guiding principles for the future of the Ningaloo coast

The following guiding principles will be used to assess all future planning and development on the Ningaloo coast to ensure the protection and sustainable use of the environment for future generations.

### 1. Sustainable development

All planning and development must meet the needs of current and future generations through appropriate land use and planning policies and practices which integrate environmental protection, social advancement and economic prosperity in the interests of sustainable development.

### 2. Community aspirations

Future planning and decision making must be consistent with the vision for the Ningaloo coast, including equity of access for a range of visitor experiences in different settings for all people from those seeking a remote and natural experience along the coast to the infrastructure and services provided for in the towns of Carnarvon and Exmouth.



### 3. Aboriginal heritage

All planning and development must provide for the ongoing protection of Aboriginal heritage if there are direct impacts, especially relating to the marine environment, and the continuation of Aboriginal use and caring for country. Where relevant, it should also provide opportunity for the development of culturally appropriate tourism through the interpretation of Aboriginal heritage.

### 4. Economic development

All planning and development should actively assist in the creation of regional wealth, support the development of new industries and encourage economic activity as long as these activities are in accordance with sustainable development principles. Planning and development must also support the provision and maintenance of infrastructure based on sustainability principles to service regional communities and develop and upgrade tourism infrastructure to improve the attractiveness of the region as a natural and remote place both to visitors and residents alike.

### 5. Interdependence

Development must not significantly interfere with current natural ecological processes. Ecological processes include physical and biological systems, which are interconnected strongly. Changing one part of the environment may have an impact on other parts.

### 6. Limits of acceptable change

Development must be within limits of acceptable change. The limits of acceptable change are defined as the degree of change a system can accommodate or buffer while still sustaining or returning to its desired characteristics. The limits may be defined by environmental, social or economic concerns.

What is acceptable or appropriate is determined by consultation with governments and communities, as well as by legislation and regulations. The limits of acceptable change establish the maximum level of alteration for a resource that society is prepared to accept. Given the region's acknowledged fragile nature, more reliance on scientific knowledge and research will be necessary in defining appropriate limits of acceptable environmental change for this region.

### 7. Precautionary principle

Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason to postpone measures to prevent environmental degradation. In applying this principle in planning and development, the following steps must be followed.

- The onus is on any proponent to show that development does not pose any likelihood of serious or irreversible harm of the environment.
- If the proponent cannot demonstrate there is no likelihood of such harm, the onus is on the development proponent to show that the harm can be managed.
- If the proponent cannot demonstrate the harm will be managed, the development should not go ahead.

### 8. Cumulative impacts

All planning and development must consider its cumulative impact. The demand for and subsequent provision of tourism or recreational development along the coast may result in cumulative impacts as each new development proposal is added to existing development. The ad hoc establishment of developments along the coast has the potential to erode the remote and environmental values of the area over time and also may affect the economic viability of the individual development projects. If there is an unacceptable cumulative impact, the development should not go ahead.



## 9. Protection of high-conservation values

Planning must be based on the protection of high-conservation areas such as the Ningaloo Marine Park, Cape Range National Park and surrounds. These areas are rare and irreplaceable natural assets with outstanding scenic, recreational and scientific value, which have been identified as a potential world heritage area. Development must not adversely interfere with these values.

## 10. Protection of remoteness values

Remoteness is a dynamic concept, rather than a static one. It varies from place to place, through time as society's values change, and from person to person, therefore it is useful to describe remoteness in terms of relative values, rather than providing a definition. The Planning and environmental guidelines for future tourism

development on the Ningaloo coast address specific issues which may affect remoteness values, for example emission of noise (eg power generation, vehicles and boats), light, smoke or dust, waste disposal (eg refuse disposal site, public toilets, evaporation ponds and pipe outfalls), visual impact (eg buildings and roads) or odour (eg sewage treatment). Development must not significantly interfere with any identified remote values.



## 11. Protection of biodiversity

Biodiversity underpins the processes that make life possible. Healthy ecosystems are necessary to maintain and regulate atmospheric quality, climate, fresh water, marine productivity, soil formation, cycling of nutrients, and waste disposal. Biodiversity is intrinsic to values such as beauty and tranquility. Australians place a high value on

native plants and animals, which contribute to a sense of cultural identity, spiritual enrichment and recreation. Biodiversity is central to the cultures of Aboriginal and Torres Strait Islander peoples. Australian plants and animals attract tourists and provide food, medicines, energy and building materials. Our biodiversity is a reservoir of resources that remains relatively untapped. Planning must consider biodiversity, and development must not significantly interfere with the biodiversity in a particular area.

## Sustainability

At the state planning level, planning initiatives have been developed in response to particular state-level issues. The most recent being the government's response to an increased global awareness and commitment to encourage sustainable development.

*Hope for the future: The Western Australian state sustainability strategy* (state sustainability strategy,

November 2003) aims to coordinate development across the state, in accordance with the principles of sustainability. It provides a long-term agenda for the ongoing global goal of protecting the environment and raising the quality of life of all citizens.

Sustainability is defined in the strategy as:

*"Meeting the needs of current and future generations through an integration of environmental protection, social advancement and economic prosperity."*

The *State sustainability strategy* provides the benchmark for decisions to be made by government and its agencies. The Ningaloo coast regional strategy Carnarvon to Exmouth sets a benchmark for future strategic land use planning by incorporating the principles of sustainable development, identified below, and aims to assist local governments in their

interpretation and integration of these ideas within the context of regional Western Australia.

The preparation and release of the Ningaloo coast regional strategy Carnarvon to Exmouth achieves one of the identified actions of the *State sustainability strategy*, which is to:

*“Complete the [Ningaloo coastal] regional strategy to define the location and character of preferred development and use of the coast in the context of the proposed world heritage nomination. Ensure adequate planning and development controls are established to implement the outcomes of the strategy.”*

The strategy recommends the use of statements of planning policy to coordinate the actions of local governments, regional councils and state natural resource management agencies on priority natural resource issues. Also in line with the State sustainability strategy is the introduction of the Ningaloo coast statement of planning policy 6.3.

## **Sustainability foundation principles**

The *State sustainability strategy* recognises the following as foundation principles for sustainability.

### **Long-term economic health**

Sustainability recognises the needs of current and future generations for long-term economic health, innovation, diversity and productivity of the Earth.

### **Equity and human rights**

Sustainability recognises that an environment needs to be created where all people can express their full potential and lead productive lives and that significant gaps in sufficiency, safety and opportunity endanger the Earth.

## **Biodiversity and ecological integrity**

Sustainability recognises that all life has intrinsic value, is interconnected and that biodiversity and ecological integrity are part of the irreplaceable life-support systems upon which the Earth depends.

## **Settlement efficiency and quality of life**

Sustainability recognises that settlements need to reduce their ecological footprint (ie less material and energy demands and reduction in waste), while they simultaneously improve their quality of life (health, housing, employment, community).

## **Community, regions, “sense of place” and heritage**

Sustainability recognises the significance and diversity of community and regions for the management of the Earth, and the critical importance of “sense of place” and heritage (buildings, townscapes, landscapes and culture) in any plans for the future.

## **Net benefit from development**

Sustainability means that all development, and particularly development involving extraction of non-renewable resources, should strive to provide net environmental, social and economic benefit for future generations.

## **Common good from planning**

Sustainability recognises that planning for the common good requires equitable distribution of public resources (like air, water and open space) so that ecosystem functions are maintained and a shared resource is available to all.

The principle of community can be used as an example of the integration of sustainability principles in the Ningaloo coast regional strategy Carnarvon to Exmouth. Community recognises the significance and diversity of



community and regions for the management of the Earth, and the critical importance of sense of place and heritage (buildings, townscapes, landscapes and culture). The structure plans for Carnarvon and Exmouth, the Coral Bay settlement plan and the Coastal tourism framework incorporate the local and regional diversity of places, through recognising the historical land use of areas and aiming to retain the sense of place.

## Process Principles

### Accountability, transparency and engagement

Sustainability recognises that people should have access to information on sustainability issues, that institutions should have triple bottom line accountability, that regular sustainability audits of programs and policies should be conducted, and that public engagement lies at the heart of all sustainability principles.

### Precaution

Sustainability requires caution, avoiding poorly understood risks of serious or irreversible damage to environmental, economic and social capital, designing for surprise and managing for adaptation.

### Hope, vision, symbolic and iterative change

Sustainability recognises that applying these principles as part of a broad strategic vision for the Earth can generate hope for the future, and thus it will involve change as part of successive steps which will continue over generations.

### Measuring a more sustainable future

The *State sustainability strategy* identifies the need to develop indicators of change, which can be measured. These measurable

indicators can be used to monitor whether the principles of sustainability are working for the region.

Change indicators will be developed through consultation to monitor the sustainability outcomes of the strategy.

## 1.1.4 Regional context

The study area is located within the Gascoyne Planning Region. Within the study area are the significant centers of Carnarvon and Exmouth, as well as the tourist settlement of Coral Bay. The area is north of Shark Bay (a world heritage area), and includes Ningaloo Marine Park and Cape Range National Park (both important conservation and tourism areas). To the east, Karijini National Park (another major tourism and recreation attraction) and the Mount Augustus and Kennedy Ranges National Parks are part of a region that has an important future in tourism.

## Regional economic drivers

The Gascoyne Region has a diverse economic base with the primary activities of tourism, horticulture, fishing, aquaculture, pastoralism and mining. Given the abundance of natural features, tourism is the largest and fastest-growing sector of the regional economy. Pastoralism as the region's traditional economic base, now represents a declining proportion of the region's economic base. Within the towns additional economic wealth has been generated from, fishing and horticulture in Carnarvon, and fishing and the maintenance of Australian Government defence communications infrastructure in Exmouth.

There are great opportunities for synergies to be developed between the Carnarvon coastal area, Shark Bay, Exmouth and the Pilbara Region to form a tourism package that will



attract many more local, interstate and overseas visitors. It is important to ensure that the attraction of the combined region is managed to sustain the values that bring people to it.

The study area supports the towns of Carnarvon and Exmouth and a tourism settlement at Coral Bay. There also is a range of other permanent and temporary settlements, including a squatter settlement at Point Quobba (Blowholes), the salt and gypsum operation at Lake MacLeod, an airforce base at Learmonth, pastoral homesteads, fishing and numerous ad hoc camping areas.

The majority of the study area is held in pastoral lease and includes a portion or the whole of the following pastoral stations: Boolathana, Booloogooro, Brickhouse, Bullara, Cardabia, Exmouth Gulf, Giralia, Gnoraloo, Marrilla, Mia Mia, Minilya, Ningaloo, Quobba, Warroora and Winning.

### **Agriculture in the Gascoyne Region**

The agriculture sector was valued at \$51.3 million in the 1999/2000 season and was dominated by horticultural and pastoral production. A well-established horticultural industry, located in the region's major service centre of Carnarvon, supplies fruit and vegetables for the domestic and export markets.

Pastoral stations represent more than just an industry to the people of the Gascoyne, but a way of life chosen by a distinctive group of residents. A total of 115 800 km<sup>2</sup> of the Gascoyne land mass is allocated to pastoral activity. Wool and meat production are the primary activities, however many stations are diversifying to take advantage of opportunities in goat domestication, horticulture, inland aquaculture and outback tourism.

### **Mining**

In 1999/2000 mining production was valued at \$70.8 million, of which salt production accounted for \$50.2 million and gypsum \$20.3 million. The region contributed 27 per cent of the total value of Western Australia's salt production and 88 per cent of gypsum.

### **Fishing and aquaculture**

In the 1999/2000 season, the Gascoyne Region's fishing catch was 5805 tonnes with an estimated value of \$73 million. The catch is dominated by prawns, with the Gascoyne Region having the largest prawn catch in Western Australia.

The fishing industry continues to be one of the Gascoyne Region's major industries. Prawns, molluscs, lobster, crabs and a variety of wetline fish are caught in Gascoyne waters, and processed at onshore operations at Carnarvon, Exmouth and Shark Bay.

Aquaculture opportunities abound in the region, and this industry will become more significant in the future, especially in the Exmouth Gulf area.

### **Tourism**

In recent years (most recent available data), the growing tourism sector has become the major component of the regional economy. More than 200 000 tourists have visited the Gascoyne Region each year since 1996. A record number of 280 000 domestic visitors were reported in 1999, contributing an estimated \$72 million to the local economy and significant additional amounts to the State economy.

## **Significant centres**

### **Carnarvon**

Carnarvon is the largest town in the Gascoyne Region. It is an important regional centre and a gateway to the region and the study area. It is the regional administrative centre and



**Table 1: Population projections**

Year	Shire of Carnarvon	Shire of Exmouth
2001	6300	2300
2006	6500	2500
2011	7000	2700
2016	7500	2900

Source: Western Australian Planning Commission (2000b) Western Australia Tomorrow: Population Projections for the Statistical Divisions, Planning Regions and Local Government Areas of Western Australia.

provides a wide range of services and facilities. During winter the Shire of Carnarvon experiences an influx of tourists and seasonal workers. The 2001 Census population of Carnarvon was 7272, of which 1727 were visitors. The estimated resident population as calculated by the Australian Bureau of Statistics (ABS), for the Shire of Carnarvon in 2001 was 6723. This figure is well above the projected population for 2001, as shown in table 1.

Currently the population of Carnarvon represents approximately 83 per cent of the total Shire of Carnarvon.

## Exmouth

Exmouth is the only townsite on the North West Cape and the second-largest town in the Gascoyne Region. Exmouth services the north of the study area and provides basic services, including education (kindergarten to year 12) and health care. In 2001, it had an estimated population of 1815. This increases to more than 3000 when visitors are included during peak times (Australian Bureau of Statistics, 2001). The estimated resident population as calculated by the ABS, for the Shire of Exmouth in 2001 was 2306. This figure is just above the projected population for 2001, as shown in table 1.

Currently the population of Exmouth represents approximately 78 per cent of the total Shire of Exmouth.

## Coral Bay

Coral Bay is an important tourism settlement comprising two caravan parks, a hotel, 26 holiday homes and ancillary commercial/retail uses. It has limited health services and no education services. Currently, Coral Bay has fewer than 1850 approved overnight visitor beds, though anecdotal evidence shows that this number has been exceeded during peak periods for a number of years.

An important aspect of Coral Bay is the fact that although there are at least 150 residents, made up of workers and business owners, during the busier part of the year, there is no provision for permanent residents within the settlement. The current accommodation facilities for workers in Coral Bay are sub-standard and a matter of concern. Work is under

way to ensure that leased land for workers' accommodation will be available once sewerage is connected.

The Shire of Carnarvon has planning control over Coral Bay. The state government recommended as part of the preparation of the *Coral Bay taskforce report on infrastructure requirements for Coral Bay* (December 1996) that a moratorium be placed on development at Coral Bay due to environmental degradation and unsuitability of infrastructure services within Coral Bay. This moratorium remains in effect until land is connected to a public water supply and public effluent disposal facility.

The *Coral Bay taskforce report* recommended that the settlement remain as a tourism node and not become a conventional town. The revised settlement plan for Coral Bay,



contained in this strategy, provides a series of criteria upon which land should be developed, including the resolution of servicing constraints, environmental issues, access issues and infrastructure contributions.

## **Mauds Landing**

Mauds Landing is located north of Coral Bay and is subject to many environmental limitations, including storm surge and cyclonic storm and rainfall events. It is adjacent to significant marine habitat and also has terrestrial values which were recognised in two decisions to reject development at the site. As a consequence of these limitations, the area has been recognised as unsuitable for any permanent development. The State has commenced processes to degazette the North Mauds Landing townsite and reserve the area for conservation and recreation.

## **Coastal tourism framework nodes**

The study area contains a squatter shack settlement known as the Blowholes at Point Quobba. These shacks are on reserved land vested in the Shire of Carnarvon and are located approximately 50 km north-west of Carnarvon.

Formalised camping and accommodation facilities are provided at the following sites: Quobba Homestead, Red Bluff, Three Mile Camp, Gnaraloo Homestead, Warroora Homestead, Giralia Homestead, Yardie Caravan Park and Vlamingh Head.

There are many other places along the coast where recreational attractions including windsurfing, surfing, camping, snorkelling and fishing can be enjoyed. These places require some form of management to ensure their attractive qualities are retained.

## **Access network**

The roads within the study area are part of either the primary access network or the coastal access network.

### **Primary access network**

The primary access network within the study area consists of the North West Coastal Highway, Minilya - Exmouth Road, Burket Road and Coral Bay Road. Main Roads WA is the owner and manager of these roads. All of the primary access network roads are sealed and designed to allow safe, high-speed travel.

#### **North West Coastal Highway**

North West Coastal Highway is the major state access, freight and tourism distributor route servicing the north-west. The highway provides access to the study area from Perth and Geraldton in the south, and Karratha and Port Hedland in the north. The road also connects the study area to the Shark Bay world heritage area, Ningaloo Marine Park and Karjini National Park. Access to the southern portion of the study area, including the Blowholes, and Quobba and Gnaraloo stations is provided from the highway via the Blowholes Road.

#### **Minilya - Exmouth Road**

Minilya - Exmouth Road serves as a feeder road from the highway predominantly for tourism and service traffic to Coral Bay, Exmouth and the northern portion of the study area. Some freight emanating from the pastoral and fishing industries use the road. Access is also provided to Warroora and Ningaloo stations from this road.

#### **Coral Bay Road**

Coral Bay Road provides access to the tourism facilities at Coral Bay and is used almost exclusively for tourism related activity. Access also is provided to Cardabia Station and the coastal access network north to Ningaloo Station and Yardie Creek.

## Burkett Road

Burkett Road is an east-west link between the two major north-south freight/service routes. It also is a major tourism road providing a link to the Pilbara.

The primary access network is providing adequate primary access to the study area at present. Planned upgrading of the network by Main Roads WA to reduce the level of road closures (Lyndon River Crossing, Minilya - Exmouth Road) and widening sections to meet traffic growth and composition (North West Coastal Highway, Gascoyne River to Blowholes and Minilya - Exmouth Road) will ensure the network continues to fulfil its function.

The upgrading of the primary access network, outlined in this document, continues to be supported by the strategy. These roads may require pavement widening to ensure that they fulfil their function. This strategy does not promote additional modifications to the primary access network.

## Coastal access network

The main coastal access network provides direct access to the coastal area and the majority of pastoral stations within the study area. The standard of road varies from sealed road to sandy tracks, which predominantly are the responsibility of local government. The roads in the coastal access network are classified as follows:

### Track

An unconstructed and unformed road, essentially a track made by four-wheel drives and other large vehicles, created by force. Local government does not maintain them, but is generally aware of their existence as they usually represent a gap between sections of formed roads.

### Type 1 – Unformed road

These are cleared, flat-bladed roads, with minimum construction, and usually are

formed from in-situ or adjacent material. Two-wheel drives can use them but only at low speeds.

### Type 2 – Formed road

A type 2 road is formed and has drainage, without imported material and/or a constructed surface. This includes roads with intermittent sheeting.

### Type 3 – Gravel road

A road that is paved and constructed from imported material (such as gravel) of adequate thickness, that's compacted, shaped and drained.

### Type 4 – Sealed road

These are constructed roads with a sealed surface but without kerbing.

The following describes the form and function of each of the sections of the coastal access network.

## North West Coastal Highway - Blowholes

The Blowholes Road is a good-quality type 4 sealed road providing access for tourists and local residents to the southern coastal section of the study area and servicing the Dampier Salt operation. The key features serviced by this road include Boolathana Station, The Blowholes, Blowholes tourism node and the coastal road north.

## Blowholes to Gnarlaloo

Gnarlaloo Road is an unsealed road running parallel with the coast. The road is type 2 (formed road) standard between the Blowholes and Quobba and drops to a two-lane type 1 (unformed) road between Quobba and Gnarlaloo Bay. The road provides access to Quobba and Gnarlaloo homesteads, HMAS Sydney Memorial, Cape Cuvier salt and gypsum-loading facilities, Red Bluff, Gnarlaloo, Three Mile Camp and various recreation and camping sites along the coast.



## **Gnaraloo to Warroora**

The Gnaraloo to Warroora section exists as a track, which currently is closed to the general public from Gnaraloo Bay to The Cove and is not shown on the Regional land use plan (figure 4). This access is to remain closed making the area a remote coastal sector and an area of environmental management priority. The main Warroora station access road is from the Minilya - Exmouth Road.

## **Warroora to Coral Bay**

The Warroora to Coral Bay section comprises a network of poorly defined station tracks, including coastal access tracks, not suitable for two-wheel drive vehicles. This main access between Warroora and Coral Bay is via the northern station access road connecting to the Minilya - Exmouth Road.

The tracks are subject to restrictions on usage. Camping areas accessible via the existing tracks include Stevens Camp, Maggies, Elles Camp, Fourteen Mile Camp and Point Anderson. The tracks provide the only access to the coastal features in this area.

## **Coral Bay to Ningaloo**

This track is considered a flat-bladed track of a slow two-wheel drive standard is a flat-bladed track standard, with the exception of the sandy blowouts. It provides a coastal access to Ningaloo Road, The Lagoon, Oyster Bridge and Bruboodjoo.

## **Ningaloo to Yardie Creek**

The Ningaloo to Yardie Creek Road while a local government road (Shire of Exmouth) is a flat-bladed track standard, mostly accessible by two-wheel drive vehicles to Winderabandi. The area from Winderabandi to Yardie Creek is predominately four-wheel drive access with the samphire flat areas and Yardie Creek Crossing sometimes becoming impassable after rain. It currently does not follow the road reserve and the reserve status within Australian Government land requires definitive resolution. There are a number of

indiscriminate tracks and minor detours being created, possibly due to sandy or inundated sections. The road provides access to a number of locations along the coast, including Ningaloo Homestead (main access via the east-west Ningaloo Road), Norwegian Bay, Winderabandi, Lefroy Bay and Yardie Creek.

## **Ningaloo to Minilya - Exmouth Road**

Ningaloo Road is managed by the Shire of Exmouth and is an important access road to the coast and Ningaloo Station. It is a type 3 gravel road and provides good access to Ningaloo Station. It is used to service the station and by tourists wishing to access coastal areas between Ningaloo and Yardie Creek.

## **Recreational use of roads**

Various reports have highlighted the need for improved coastal access based on research and analysis undertaken during their preparation.

During the development of this strategy, a number of issues have also highlighted the need for improved and managed coastal access.

There are growing numbers of people visiting the Ningaloo coast. This is evidenced by the increase in accommodation being provided at the more formalised sites (the capacity of Red Bluff increased from 30 in 1988 to a current peak capacity of 200). The tourism season is being extended into the summer months, as a result of international tourists wishing to visit the region year round. The operators of the various formalised facilities are planning modest expansion, resources allowing, as a result of the continuing growth. This continued growth relates directly to an increased need to provide better planned access.

Definitive traffic data to support the increasing visitor trend along the coast is difficult to obtain. However, figures obtained from Main Roads WA indicate that the Minilya - Exmouth Road had an average daily traffic count of 200

vehicles in 1998 to 1999, an increase from 1988 to 1989 of about 38 per cent or approximately 3.8 per cent increase per year.

### **Consequences of increased recreational use**

Given the general increase in accommodation and the traffic growth being experienced on the primary access network, it is evident that the existing coastal access network is under increasing pressure.

As described in the Coastal access network section, there are parts of the existing coastal access network able to support this increased usage adequately without any direct detriment to the environment (Blowholes Road, Quobba to Gnarlloo).

However the sections of coastal access network unable to support the increased usage, due to inappropriate location and standard, may cause detrimental impacts on the environment. These impacts may be addressed initially as ad hoc realignments, including severely corrugated sections of road, created to gain access around boggy sections or low-lying inundated areas.

Secondary impacts, such as indiscriminate access to a new location or expansion of an existing site, may result from the existing lack of management of tracks. The creation of a new camping site in an inappropriate location has the potential to create even more environmental degradation through the ad hoc creation of additional tracks.



### **Other considerations in the provision and upgrading of road infrastructure**

#### ***Environmental Protection Act 1986***

Any new infrastructure proposals will need to be referred to the Environmental Protection Authority (EPA) for consideration under the *Environmental Protection Act 1986*. This includes upgrading of existing roads, and any proposal for a coastal road between Gnarlloo and Warroora stations. A new coastal access network in this locality would require referral to the EPA.

#### ***Hope for the future: The Western Australian state sustainability strategy, 2003***

The strategy highlights the need for integrated land use and transport planning so that the land use function drives the transport requirements and not vice versa. The Ningaloo coast regional

strategy Carnarvon to Exmouth and the associated Coastal tourism framework will guide land use and development within the study area and any improvements to the coastal access network will be implemented incrementally or the status quo maintained in response to changing transport demand.

### **Aboriginal heritage**

The archaeological record of the Cape Range peninsula is significant in that it provides the earliest confirmed evidence of Pleistocene marine resource use in Australia. Aboriginal habitation of the North West Cape and Exmouth area is thought to have commenced at least 32 000 years (with some reports of 38 000 years) before the present and continues up to the present. The North West Cape area is an area of ongoing cultural

significance to Aboriginal people and to the members of the Gnulli native title claimants group.

Gnulli means “All of Us” and the claim group includes the traditional owners of the Exmouth Gulf and surrounding area, including members of the Thalanji, Baiyungu and Ingarrda groups. The Gnulli group are recognised by the Aboriginal community as custodians of Aboriginal culture for the Exmouth region and Ningaloo area.

## Rangelands

The rangelands in the study area support 15 pastoral leases. All pastoral leases are Crown land and are due to expire in 2015. All these leases will be renewed, either without boundary changes or with areas excluded from the renewed lease for public purposes. The state government has commenced the process of excluding these areas from pastoral leases for inclusion in a new conservation and recreation reserve. The negotiation period to finalise the boundaries of the excluded areas from pastoral lease renewal is currently in process and due to conclude by the end of 2004.

The *Gascoyne coast regional strategy* provided for the continuation of the remaining pastoral activity on the North West Cape. However, the coastal pastoral areas are more environmentally sensitive and have been identified in previous reports as required for the long-term management of high-value conservation and recreation areas. The *Select Committee report on Cape Range National Park and Ningaloo Marine Park* proposed that the pastoral lease of Ningaloo station be added to the Cape Range National Park when it was due to expire in 2015.

The main rangelands activity in the study area is pastoralism, involving the production of cattle, sheep and wool. Production levels and stocking rates indicate the study area provides low yields. This situation is unlikely to improve in the near future. Diversification of pastoral activities includes approved tourism

operations at Gnarlaloo, Quobba and Giralia stations. Wildflower production also has been identified as a potential source of income for pastoralists in the study area. There is no limit to diversification activities that may occur subject to environmental acceptability, receiving the necessary planning approvals, and obtaining diversification permits or leases.

Settlement and pastoral development within the study area has resulted in a number of changes in the landscape over the past 100 years. The proliferation of annual pasture species has led to the replacement of native grasses by introduced species in some areas, with buffel grass being the most significant.

Selective grazing and overgrazing by sheep, goats, cattle and native wildlife attracted to the artificial watering points have over-exposed areas to wind erosion through the loss of the native vegetation cover. Trampling of vegetation and compaction of the earth also are problems at stock-watering points where large numbers of hard-hoofed animals congregate.

It is important that the carrying and watering of stock are restricted to those areas capable of supporting this activity. This generally excludes the sensitive coastal strip, which is extremely susceptible to wind erosion and subsequent dune destabilisation. This requirement also may provide other land use opportunities for areas not suitable for pastoral use, particularly along the coastal zone where access and utilisation for tourism activities is in high demand.

A committee formed to investigate pastoral issues in the Gascoyne Region has produced the *Gascoyne-Murchison rangeland strategy* (1997). This strategy made a number of recommendations aimed at ensuring that the industry, which is in relative decline in economic terms compared to other industries, becomes sustainable by the promotion of biodiversity, tourism and cultural values.



## Environment characteristics and conservation values of the Ningaloo coast

### Overview

Much has been written about the exceptional conservation values of the Ningaloo coast and the acceptability or otherwise of tourism development. The values of the area include:

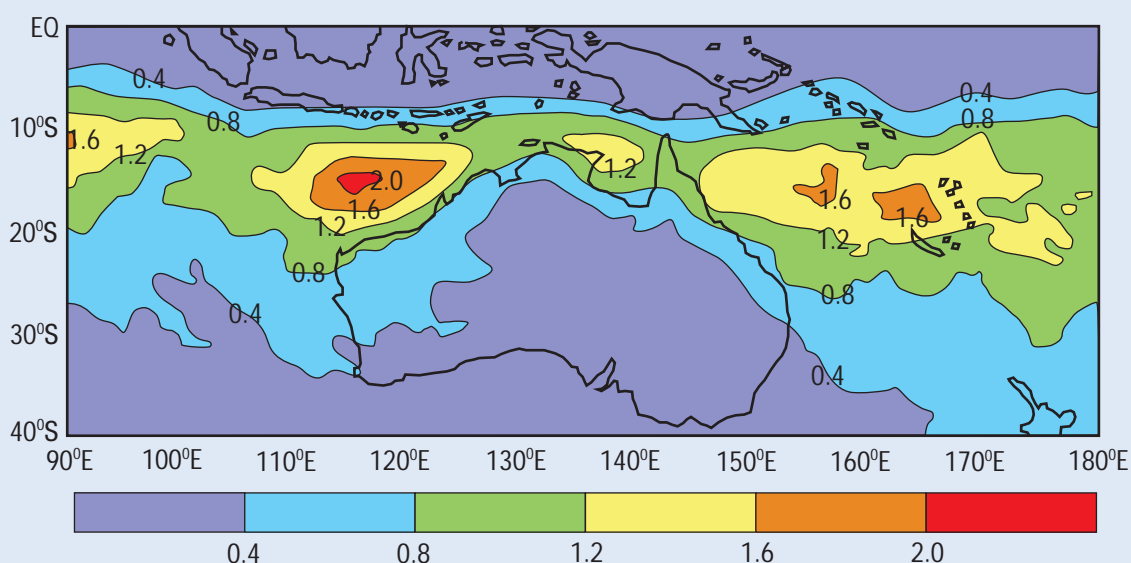
- biological diversity;
- terrestrial flora and fauna;
- karst formations and subterranean fauna;
- fringing coral reef and offshore islands;
- marine flora and fauna;
- mangrove systems; and
- landscape and landform attributes.

*The Select Committee on Cape Range National Park and Ningaloo Marine Park, Western Australian Government's response to the Select Committee's report, Gascoyne coast regional strategy, Exmouth-Learmonth (North West Cape) structure plan, Environmental Protection*

*Authority Cape Range position statement* all cite and/or recognise the need to implement appropriate planning and management measures for the area to protect its conservation values. More importantly, they provide the background reference and principles on which these guidelines, as well as a number of policy statements, have been formulated. *Coastal tourism: a manual for sustainable tourism* provides proponents with a good source of additional information.

### Climate

The climate of the Ningaloo coast ranges from hot, arid conditions at the tip of Cape Range in the north to warm semi-arid conditions around Carnarvon in the south. The area experiences two seasons, a hot summer which extends from October to April and a mild winter from May to September. The average annual minimum temperature is 17°C and the average annual maximum temperature is 27°C. The coolest month is July and the hottest month is January, when the maximum temperature may reach over 45°C inland and to the north. On the whole, the region experiences a moderate, arid climate along the coast with about 320 days' sunshine per year, however, inland variations can be experienced.



**Figure 2: Average annual frequency of tropical cyclones in the Australian region**



The average annual rainfall is 226 mm; however, this is considerably exceeded by the mean average annual evaporation of 2591 mm. Rain in the area is associated with occasional, but intense, tropical cyclone activity (January to March) and the regular, but less intense, passage of cold fronts during winter.

The synoptic wind patterns of the Ningaloo coast are largely controlled by the west to east movement of a belt of anticyclonic systems. This anticyclonic belt undergoes a seasonal latitude migration resulting in predominantly south to south-westerly winds in summer, and east to south-easterly winds in winter. In addition, strong southerly sea breezes typically develop during summer afternoons. Storm winds may arise from tropical cyclones and thunderstorms during summer and mid-latitude depressions in winter.

Tropical cyclones may affect the region during summer and typically occur between January and March. The direction and speed of the winds experienced during a tropical cyclone are highly variable and dependent on the path taken by the cyclone. Tropical cyclones may have wind speeds in excess of 90 km/hr. These occur in the region every three to five years (Department of Planning and Urban Development, 1992). The region is cyclone prone, and can experience category 5 cyclones with extremely destructive winds and storm surge, with wind speeds in excess of 200 km/hr. The average annual frequency of tropical cyclones along the Ningaloo coast increases northward from a return interval of 0.4 (every 2.5 years) around Carnarvon to approximately 0.8 in the Exmouth (every 1.25 years) (figure 2).

## **Geology and geomorphology**

### **Geomorphic districts**

The landforms of the study area are contained within seven geomorphic districts, as described by *Payne et al.*, 1987. These geomorphic districts are summarised below.

### **Cape Range**

The Cape Range district occupies the north-west portion of the study area and is comprised of deeply dissected limestone ranges and outwash plains. Cape Range is the most elevated part of the Ningaloo coast rising to 300 m above sea level with intermittent drainage by a series of short parallel flowlines, which fan out near the coast to form outwash plains. Cape Range may be described as an anticline structure resulting from tectonic uplift during the miocene and quaternary periods and the subsequent exposure of the underlying tertiary sediment. The deeply dissected plateau has created narrow valleys, spectacular gorges and extensive cave formations. The land system adjacent to the rangeland system consists of gentle, stony upper slopes, sandy plains and outwash alluvial plains which receive run-off from the plateau.

### **Coastal dunes**

The coastal dunes district is predominantly sedimentary surfaces located west of Lake MacLeod and extending north to Exmouth Gulf. Sedimentation within the district was intermittent and occurred mainly in a marine shelf environment. These basement rocks are overlain with coastal dunes.

Longitudinal dunes over limestone or calcrete at shallow depth occur on the undulating sandplain inland. Relatively young deposits occur closest to the coast and are characterised by large, arcuate and longitudinal coastal dunes with narrow calcareous swales. Cliffs, wavecut platforms, narrow beaches and mobile sand drifts also feature in the dunal landform, where soils range from deep calcareous sands along the coast to siliceous sands of variable depth to the east.

### **Giralia Range**

The Giralia Range district is located in the north-eastern and central portion of the study area and includes the anticline structures of the Giralia Range, Rough Range, Gnarlaloo Range and numerous small folds adjacent to



Lake MacLeod. The geological history of the district follows similar patterns as the Cape Range district with marine sedimentation, tectonic stress and the uplift and exposure of tertiary sediments.

The most elevated features occur at 50 m – 100 m's above sea level and typically are characterised by dissected limestone hills above undulating stony plains. Lower in the profile, stony uplands, and undulating and sloping plains with limestone at variable depths predominate, with occasional outcropping. In lower-lying areas, the gently dissected limestone plains and broad outwash alluvial plains and fans are found as a result of run-off from the higher systems.

### **Lake MacLeod and saline plains**

Lake MacLeod and the flat saline plains on its periphery are subject to regular inundation. The shape of Lake MacLeod was largely determined by the gently dipping tertiary anticlines, which flank it to the east and west. Subsequent marine deposition, erosion and lake and aeolian deposition have formed the basis for three land systems, MacLeod, Chargoo and Warroora.

In general, the predominantly highly saline plains and tidal mudflats overlie lake-bed deposits of gypsiferous sands, with areas of shallow marine deposits and aeolian calcareous sand also common. Broad alluvial plains and lacustrine deposits of beaded gypsum with clay, silt and sand characterise the area to the north of Lake MacLeod. Slightly higher in the profile, flat saline plains with sluggish drainage tracts are located throughout the district.

### **Alluvial plains**

The alluvial plains district comprises mainly alluvial deposits with areas of red, aeolian sandbanks, dunes and occasional claypans. It is based on the main channels, floodplains and deltas of the Lyndon, Minilya and Gascoyne rivers. Sandplain and sand dune deposits, particularly in the area adjacent to the Gascoyne River, have been redistributed extensively or modified by floods.

Narrow active floodplains following the middle course of the major rivers and creeks are flanked by broad active floodplains associated with the lower reaches. Extensive alluvial plains outside the active floodplain are also common along with the supra tidal flats and tidal mangrove swamps which fringe the coastal areas of the alluvial plains.

The soils, consisting of earthy sands, deep duplex soils and clays, are particularly fertile with the region's horticultural activities mainly concentrated in the alluvial soils around the Carnarvon townsite.

### **Winning plains**

The winning plains district extends inland from the Giralia Range and is located in the north-eastern part of the study area. The district may broadly be described as undulating landscape with aeolian induced ridges and plains. The component landforms are quite diverse and numerous, including deposits of shale, sandstone, siltstone, sand and saline flats which have been subject to varying degrees of dissection.

### **Ridge dunes**

The ridge dunes district, which covers the central eastern portion of the study area, features longitudinal and convergent sand ridges and flat to undulating inter-tidal plains of aeolian sand. The medium-grained red quartz sand which characterises the district has been derived directly from the upper part of the lateritic profile. With appropriate management pastoral use is appropriate for this district.

### **Summary**

The study area contains a diversity of land systems and landforms displaying features of regional conservation significance. The most outstanding from an environmental perspective is Cape Range with its anticline structure, heavily dissected plateau, gorges, extensive cave systems and marine deposit characteristics inherently linked to the marine environment.

The coastal and littoral land systems also represent conservation areas of regional significance, particularly the sensitive holocene coastal deposits flanking the Gascoyne delta, the mangrove and inter-tidal flats fringing the Exmouth Gulf, and the river and delta land systems just east of Carnarvon which offer fertile soils in close proximity to the groundwater resources underlying the Gascoyne River. Their value from an economic perspective is also significant due to the importance of horticulture to the region.

## **Coastal geomorphology**

Coastal geomorphology is probably the most significant physical factor influencing land use planning on the coast. The coastal geomorphology of the study area dictates that development should be confined to certain areas. The stability of coastal landform underpins the levels of use and development that can occur without causing environmental damage or degradation.

The Ningaloo coast may be divided into six broad coastal sectors on the basis of their landforms and prevailing coastal processes. These coastal sectors are described below.

### **Delta coast**

#### **- Carnarvon to Miaboolya Beach**

The delta coast is located between Carnarvon and Miaboolya Beach. This sector has formed by the fanning out of sediments from the Gascoyne River, is low-lying, and characterised by mangroves, tidal inlets, bar deposits and samphire flats.

### **Dune coast**

#### **- Miaboolya Beach to Point Quobba**

The dune coast is a sedimentary coast that extends from Miaboolya Beach to Point Quobba and has largely formed under the influence of contemporary coastal processes. Along the southern part of this coastal sector, a large series of shore-parallel beach ridges occur and these beach ridges are backed by samphire flats. Midway along this coastal sector, the beach ridges taper off and give way

to large parabolic dunefields mostly stabilised by dense vegetation; although, towards the north several large isolated active blow-outs occur. These dunefields extend northward to Point Quobba and inland from the shore to the samphire flats of Lake MacLeod. Further inland, away from the moist onshore seawind influence, the typical upward growing parabolic dunes of the immediate coast become transformed in the drier conditions to elongate migratory hairpin dune forms.

### **Cliff coast**

#### **- Point Quobba to Three Mile Camp**

The cliff coast extends from Point Quobba to Three Mile Camp and is largely composed of low limestone cliffs with rocky shores and occasional pocket beaches. Active parabolic dunes are observed adjacent to several of the pocket beaches and these dunes often extend landward onto the plateau area. Relict vegetated parabolic dunes occur along the seaward margin of this plateau for much of this coastal sector. Within a short distance from the coast, the parabolic dunes on the plateau give way to older linear dunes (desert dunes).

### **Dune and cusped spit coast**

#### **- Three Mile Camp to Exmouth**

The dune and cusped spit coast extends from Three Mile Camp to Exmouth and is characterised by the presence of the Ningaloo Reef offshore and the development of several coastal dune formations. The Ningaloo Reef commences immediately north of Red Bluff where it borders the shoreline. The reef leaves the coast at Gnarlou Point and becomes a fringing reef. A series of cusped forelands have developed in the lee of the Ningaloo Reef due to the effects of wave refraction through gaps in the reef and circulation patterns within the lagoon (Sanderson, 1997). The cusped forelands are typically formed through the development of a sequence of beach ridge dune.

The cusped forelands of Cape Farquhar and Alison Point are also characterised by high, bare, mobile dunes with vegetated parabolic



dunes towards their northern ends. Shore-parallel beach ridges are often present adjacent to the shoreline and these are typically backed by recent parabolic dunes. Parabolic dunes are also often found at the northern (downwind) end of a sequence of beach ridges. Bare mobile parabolic dunes are present throughout this area. Along this coastal sector, the sandy shoreline is regularly interrupted by short sections of low coastal cliffs and rocky shoreline. Between Cape Farquhar and Alison Point and from Yardie Creek to North West Cape, the coastal plateau is deeply incised by a series of creeks which drain westward to the sea from off the South Giralia Plateau and Cape Range, respectively.

### **Floodplain coast** **- Exmouth to Learmonth**

The floodplain coast is located within the Exmouth Gulf and extends from Exmouth to Learmonth. This coast is characterised by numerous intermittent incised streams which discharge eastwards from Cape Range. These creeks are highly seasonal and typically only flow following intensive rainfall events (often associated with cyclone events). The streams discharge onto a broad flat coastal plain and have resulted in the development of wide outwash fans of sand and cobble. The flood waters typically discharge to the Gulf at discrete locations often associated with low points in the coastal dunes. At these locations, small delta deposits may form; however, these delta features are limited in size as the majority of the sediments are deposited landward of the coastal dunes on the coastal plain in the form of outwash fans. The shoreline is typically sandy and generally experiences very low wave energy conditions due to its sheltered location within Exmouth Gulf.

### **Mangrove coast** **- Learmonth to eastern** **boundary of Giralia Station**

The mangrove coast extends from Learmonth to beyond the eastern boundary of the study area. This coastal sector is located towards the southern end of the Exmouth Gulf and is

characterised by the predominance of mangroves. These mangroves (up to 16 different species) form a fringing forest along the shore edge and are typically backed by wide tidal flats with areas of algal mats. A number of low islands are located offshore, many with fringing mangroves.

## **Hydrology**

Hydrology can be categorised into surface and groundwater features. The main surface features in the study area include the Gascoyne River, Lake MacLeod, Minilya River, Lyndon River and Yardie Creek.

Groundwater resources throughout the region are variable in terms of quality and availability and occur to a limited extent as superficial formations, but more commonly as confined aquifers. There is a lack of fresh water within the Ningaloo coast area. Access to and availability of water will influence the level of development along many parts of the coast.

Salinity content of groundwater varies across the study area. Pastoral stations which exhibit a high salt content depending on the depth of the bore, include Cardabia and Warroora (1000-15 000 mg/L). Other pastoral stations average 1000-8000 mg/L. Much of the groundwater requires treatment by means of desalinisation, cooling, softening and the removal of iron to obtain potable drinking water.

The limestone formations throughout the North West Cape are characterised by cave features with associated stygofauna (specialised subterranean aquatic species), troglofauna (specialised subterranean terrestrial species) and contain underground streams and caverns (Hamilton-Smith *et al.*, 1998). These underground streams are the current source of water supplies for the town of Exmouth. However, the greatest care must be taken to maintain the aquifer habitat, which includes endemic stygofauna and troglofauna, and control groundwater abstraction in a sustainable way. It is important that pollutants and/or wastes (including sewage, oils and toxic sludge from



rubbish tips, fertilisers and pesticides) do not enter the system. As the land is extremely sensitive, alternatives to septic tanks and leach drains outside the reticulated sewerage network should be encouraged.

## Oceanography

### Tides and water levels

The coast from Carnarvon to North West Cape is microtidal and experiences mixed predominantly diurnal tides; within Exmouth Gulf the tides are also microtidal but predominantly semi-diurnal. The mean spring tide range increases towards the north: at Carnarvon, the mean spring tide range is 0.9 m and a mean neap tide range of 0.3 m; at Coral Bay the mean spring tide range is 1.2 m while the mean neap tide range is 0.1 m and at Exmouth the mean spring tide range is 1.8 m and the mean neap tide range is 0.6 m (Department of Defence, 2002).

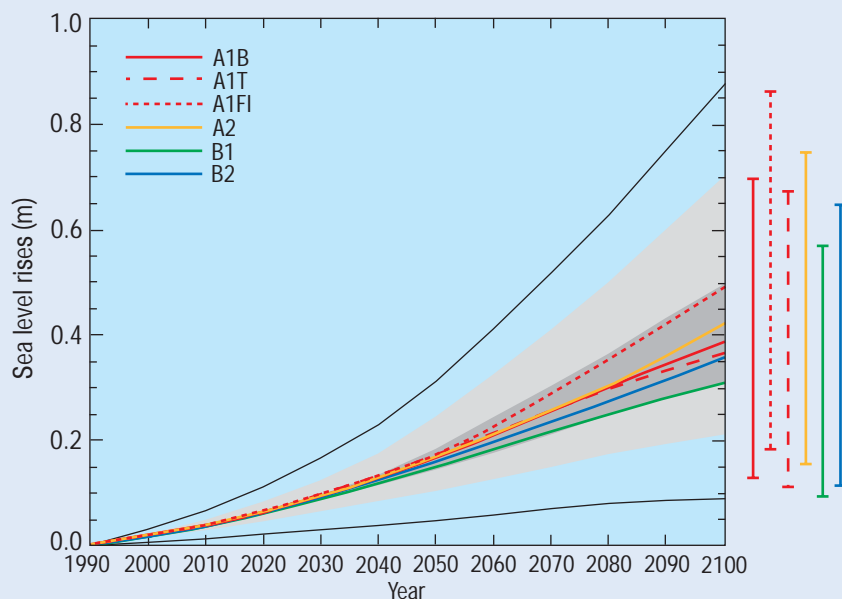
Analysis of the annual sea level trend at Carnarvon from 1966 to 1997 shows an average rising trend of 0.25 mm/year - note however that this was determined from a limited time series and the data contained a large degree of scatter (National Tidal Facility, 1999). Coastal planning in Western Australia is presently allowing for sea level rise based on the mean of the median model of the most recent Assessment report of the Intergovernmental Panel on Climate Change (IPCC, 2001) Working Group (Department for Planning and Infrastructure, 2003). Based on this method, the sea level rise over the next 100 years is estimated to be 0.38 m (figure 3).

Other processes driving water-level fluctuations along the Ningaloo coast include storm surge (including cyclonic events), seiches and tsunamis.

Storm surge is the result of the combination of strong onshore winds and/or low atmospheric pressure and may result in elevated water levels at the shoreline. Tropical cyclones, which may affect the region during summer, have the potential to cause storm surge events.

The most recent category 5 cyclone to cross the Western Australian coast was Cyclone Vance (17–24 March 1999). Cyclone Vance crossed the coast at Exmouth on 22 March 1999 and produced the highest recorded wind speed on Australian mainland of 267 km/hr. The storm surge measured at Exmouth during Cyclone Vance was + 3.6 m CD (chart datum), whereas the maximum storm surge from Cyclone Vance was estimated to be approximately + 5.0 m CD and occurred on the coast west of Onslow (Bureau of Meteorology, 2000).

The 10 year recurrence storm surge level at Carnarvon is 1.3 m above Australian height



**Figure 3: Global average sea level rise (1990–2100) from IPCC (2001)**

datum (ADH) (Steedman Science and Engineering, 1989). When wave run-up is added to the surge level, it is considered that water levels in Carnarvon may reach from 3.0–4.2 m above AHD (Western Australian Planning Commission, 1996), and possibly slightly higher in the lee of the Ningaloo Reef chain (Rogers and Associates, 1994).

Seiches are long-period standing waves and occur inside the reef lagoon and cause a small amplitude periodic rise and fall of the water level at the shoreline. Seiche motions are typically triggered by an impulse that may be related to a storm surge, a change in wind direction/speed, or by periodic fluctuations in the wave heights breaking across the reef crest. Seiching along the Ningaloo coast may occur between the shoreline and the reef line or alongshore within coastal embayments.

Tsunamis are caused by a sudden large displacement of the ocean floor or shores and may be initiated by a severe earthquake or volcanic eruption. Tsunamis may occur on the northern Western Australian coast approximately every 10 to 20 years due to earthquakes in the Indonesia region (Environment Australia, 2002). On 3 June 1994 a tsunami caused temporary inundation of some nearshore facilities in Exmouth and Carnarvon. At North West Cape (in the lee of a gap in the reef), this tsunami resulted in a + 3.5 m CD water level rise and inundation of areas within 300 m of the shoreline. A similar event occurred in 1987 (Western Australian Planning Commission, 1996).

## Wave climate

The offshore wave climate of the Ningaloo coast is dominated by low swell waves generated by the Roaring 40s and the south-east trade wind belt of the Indian Ocean. Visual estimates of offshore wave height, period and direction indicate that the offshore waves in summer generally arrive from the south and typically have a wave height of 1–2 m (Port and Harbour Consultants, 1989). During winter, the offshore waves typically have a height of 2–3 m and the wave direction shifts towards a more south-westerly

direction. Within Exmouth Gulf, the wave climate is considerably more sheltered than along the more exposed western coast.

Ningaloo Reef forms a fringing reef immediately north of Red Bluff and leaves the coast at Gnarlaloo Bay and becomes a barrier reef. This reef results in considerable attenuation of the offshore wave energy through shoaling, refraction, diffraction and breaking processes across the reef crest and bottom friction across the reef lagoon prior to reaching the shoreline.

During summer, the regular sea-breezes superimpose a southerly sea wave climate onto the background swell. Extreme waves may also be generated in summer during tropical cyclones. Numerical modelling of tropical cyclone Hazel (February/March 1979), which was considered to be representative of a 100 year return period event, indicated that maximum significant wave heights could reach 6.2 m outside the reef line and 3.7 m in a water depth of 7 m near Mauds Landing (Port and Harbours Consultants, 1989).

Hindcasting of typical and extreme wave conditions along the shoreline of Bills Bay (adjacent to the Coral Bay settlement) has shown that, during non-cyclonic conditions, the median wave height is 0.1–0.2 m and 10 per cent of the time waves could be expected to exceed 0.2–0.4 m in height (CMPS&F, 1997). Modelling of a storm with a five year recurrence interval indicated that the offshore and inshore wave heights were determined to be 6.0 and 1.7 m, respectively and the 50 year recurrence interval wave heights for offshore and inshore were 10.1 and 2.0 m, respectively.

## Currents

The regional offshore water circulation is dominated by the Leeuwin current which is a southward flow of warm, relatively low-salinity water of tropical origin. The flow of the Leeuwin current is generally greatest between autumn and winter and is greatly attenuated by wind stress in summer.

Inside the lagoon, the current structure is complex and driven by wind, waves and tides and modified by the coastal morphology, in particular the location of size of passages and channels through the reef system (Rogers and Associates, 1994). Typically, the persistent southerly swell waves break on the reef and result in the pumping of water over the reef crest and into the lagoon. This generally results in the generation of northward flowing circulation cells inside the lagoon which exit via the reef passages (Hearn and Parker, 1988). Observations from Bateman Bay indicated typical current velocities of  $0.1\text{--}0.2\text{ ms}^{-1}$  and a localised increase in the current velocity (up to  $0.5\text{ m/s}$ ) may be experienced in the narrow channel immediately offshore of Point Maud (Rogers & Associates, 1994). Observations by Hearn and Parker (1988) at Osprey Bay (120 km north of the Coral Bay settlement) indicate that the lagoon in this region has a flushing time of less than 24 hours. The lagoon flushing to the south of Osprey Bay is expected to be less influenced by tidal currents than at Osprey Bay due to the reduced tidal range towards the south.

Within Exmouth Gulf strong tidal currents may occur with spring-tide velocities in the deeper waters of  $0.5\text{ m/s}$  and up to  $1\text{ m/s}$  on open shallow areas and several metres per second may be recorded in tidal channels (Brown, 1988).

## Flora

The vegetation of the Carnarvon Basin area mainly is dominated by arid (eremaeon) perennial shrub association. The native flora exhibit a wide range of growth forms and features, but are similar in that all are capable of survival (as adult plants and seeds) through adverse seasonal conditions. Whenever seasonal conditions are favourable, complementary floras of drought-avoiding, short-lived herbs and grasses develop.

Hummock grasslands with sparse overstoreys of trees or shrubs are predominant on dune fields, sandy plains and limestones in the north, but these decline southwards and are

virtually absent south of the Gascoyne River. *Acacia* shrublands are very widespread on the hills and stony plains. Shrublands and low woodlands dominated by *Acacia* species gradually replace the hummock grasses on the sand sheets and dune fields in the eastern part of the study area.

The floodplains and alluvial delta areas of the lower Gascoyne River are characterised by extensive plains of Gascoyne bluebush, and other low halophytic shrublands. In most places, such plains feature low banks, dunes or small sheets of red sand on which the chenopods largely are replaced by *Acacia* shrublands, with variable understoreys of low shrubs and grasses, including the introduced buffel grass.

The mangrove fringes are dominated by *Avicennia marina* and *Rhizophora stylosa* and occur mainly in the coastal area adjacent to Carnarvon and within the Exmouth Gulf. A small mangal remnant also occurs on the west coast of the North West Cape at Mangrove Bay. The highly productive mangrove areas mitigate storm surge damage and provide shoreline stability. They also represent important wildlife habitats and fish/prawn nursery areas at the southern extension of their range.

The diversity and richness of the floral species in the Cape Range is significant with 46 per cent of the known species of the Carnarvon botanical district occurring throughout. This is unusual as limestone soils in arid areas generally are recognized as species poor.

Settlement and pastoral development over the past 100 years have introduced change upon the native vegetation with the depasturing of the land by sheep, goats and cattle and the establishment of stock watering points over areas previously grazed only by native invertebrates and small populations of marsupials. Buffel grass is displacing *Triodia* throughout many of the pastoral areas and a proliferation of weed species around the towns of Exmouth and Carnarvon also is evident.



Based on available broadscale information, it is apparent.

- The North West Cape is an area of high-conservation significance with the inherent creek system and semi-permanent wetlands of Yardie Creek standing out as a refuge for a number of southern taxa that reach their northern limits in this area.
- From a management perspective, the vegetation communities fringing the coast are of regional significance given their dune-stabilisation properties and the inherent difficulties in dune restoration.
- The mangrove and inter-tidal areas associated with Carnarvon, Mangrove Bay and Exmouth Gulf possess significant conservation value due to their high productivity, shoreline stability function and provision of habitats, particularly in regard to fish and prawn nurseries, and migratory birds.

## Fauna

The fauna within the study area broadly can be classified as vertebrate, invertebrate and subterranean species.

### Vertebrates

#### Terrestrial

A bio-geographical description of vertebrate fauna recently undertaken for the Cape Range (Kendrick, 1993) together with published management plans (Department of Conservation and Land Management, 1987) provide a useful overview of the study area.

Existing information indicates that in the order of 38 species of native ground mammal, 125 species of reptile, five amphibians and more than 200 species of birds are found in the study area. The occurrence of species at the limits of their geographical range and/or as geographically isolated populations adds to the diversity (one mammal, one frog, 11 bird and 21 reptile species).

Mammals have not been intensively or systematically sampled and it is possible that populations thought to be locally or regionally extinct may be located in the study area. All key mammal species, with the exception of the Black-footed Rock Wallaby and Central Rock Rat, are found elsewhere in the arid and semi-arid north-west of Western Australia.

Three reptile species recorded in the study area, the green, hawksbill and loggerhead turtles, are listed as threatened. The Cape Range is also a hotspot for non-marine mollusc endemism.

Introduced species include domestic stock such as sheep, goats, horses and cattle, together with cats, dogs, foxes, rabbits and mice. Goats are established in feral populations.

The avifauna of the study area reflects the range of habitats from the Cape southwards to Carnarvon with its narrow coastal plains, dissected limestone uplands, sand plains and sand ridges, extensive inter-tidal flats and large areas of mangrove. The bird fauna generally is representative of the semi-arid north-west coast and hinterlands. CALM studies suggest that more than 200 bird species are likely to utilise the study area as permanent or temporary habitat. Migratory birds, some protected by international agreements, also are known seasonally to inhabit the mangrove and inter-tidal areas around Carnarvon and the Exmouth Gulf.

#### Marine

Ningaloo Reef is the only fringing coral reef in Australia and supports a very diverse range of marine species. The diversity of habitats provide for an extensive range of marine species, including over 200 species of coral, 600 species of mollusc and 500 species of fish in the marine park alone. The reef is famous internationally for its diving and aggregations of marine species, including whale sharks, turtles, dugongs, sharks, whales and manta rays.



Marine vertebrates of conservation value include:

- green, hawksbill and loggerhead turtles which have significant nesting rookeries in the study area;
- dugong communities which have been sited in several locations within the lagoon and Exmouth Gulf;
- humpback whales, which pass close to the reef front on their annual migration routes and the resting area in Exmouth Gulf; and
- whale sharks which frequent areas of the reef between March and June.

## Invertebrates

There is a vast array of invertebrate fauna inhabiting the study area and there is very little information regarding their regional significance. Invertebrates play an important role in every ecosystem and represent about 98 per cent of the earth's animals.

The conservation status of most invertebrate species is unknown, as the majority is yet to be described by science. This lack of taxonomic information seriously has hindered research on much of Western Australia's invertebrate fauna.

## Subterranean

Subterranean animals throughout the study area are concentrated on the North West Cape where unique geological features and climatic influences have created an extraordinary range of underground habitats. At least 16 genera are known to be endemic to the Cape Range formation (Humphreys, 1993).

There are various classes of subterranean fauna, depending upon their underground habitats. The two main types that live in the area are stygofauna (specialised subterranean aquatic species) and troglobites (specialised subterranean terrestrial species).

The stygofauna, or obligatory groundwater inhabitants, inhabit a range of freshwater to

brackish water caverns and fissures in the limestone of the coastal plain. The study area contains a great diversity of stygofauna, which is endemic to the Ningaloo coast and the North West Cape. Genetic differences also exist between the east and west coastal plain populations, which is important in terms of biodiversity.

Troglobites have evolved to be totally dependent upon cave environments and have many adaptations in common. They are usually eyeless, lack pigmentation and have enhanced non-optic sense organs such as long antennae and limbs. They occur in caves mostly in Tulki limestone in the Cape Range and on the coastal plain. With at least 55 species of troglifauna, the North West Cape has some of the most diverse karst fauna in the world. It supports a rich troglobite and troglophile arachnid and myriapod fauna population which comprises approximately half of the known terrestrial subterranean fauna of Australia. The caves and subterranean waterways of the study area are of critical importance in maintaining the local troglitic fauna.

Research regarding the diversity and importance of the subterranean fauna within the study area still is quite limited at this stage, however it is sufficient to recognise their regional significance and ensure their protection through appropriate management measures. Any major hydrological changes would be a threat to both types of cave fauna. Management of karst at Cape Range may be guided by the local adoption of international policies and practices such as International union for conservation of nature and natural resources guidelines for cave and karst protection (Watson *et al.*, 1997).

## Areas of environmental significance

### Ningaloo Marine Park

Ningaloo Marine Park presently covers an area of 430 000 ha and includes waters under state and Commonwealth jurisdiction, although it is managed as one area by CALM. Its proposed



extension is shown in figure 4. In addition, the body of water between Gnarlaloo Bay and Red Bluff is being investigated for possible inclusion in the Ningaloo Marine Park as part of the review of the current marine park management plan.

The Ningaloo Marine Park possesses a range of areas of national and international significance. Its waters have been divided into the following zones.

- Sanctuary zones, which provide special protection areas for wildlife;
- Recreation zones, which provide for recreational uses consistent with conservation of the environment; and
- General use zones, which provide recreational and commercial fishing.

The Ningaloo Reef extends about 290 km from Red Bluff to the North West Cape. It is the only fringing coral reef in Australia, forming a discontinuous barrier to the coast. The majority of the Ningaloo Reef is a declared marine park (by either state or commonwealth) and managed by CALM.

Throughout the world, coral reefs are under threat; therefore it is important that Ningaloo, one of the most pristine coral reef systems in the world, is protected. The reef is located very close to the shoreline and any shore-based development potentially may have more significant impacts than in the case of the Great Barrier Reef.

Coral reefs can suffer severe storm and cyclone damage. This natural disturbance is important in maintaining coral species diversity by destroying the faster-growing branching corals and allowing slower-growing massive corals to survive. However, coral reefs are highly sensitive and severely affected by other disturbances such as sedimentation, increased nutrient levels in the water which favour the growth of algae over corals, and changes in salinity.

It is recognised that the Ningaloo Reef has nationally significant conservation, recreation, commercial, educational, historical and

research values that are worth preserving for future generations.

### **Mangrove tidal flats**

The Gascoyne delta, littoral landforms and near shore marine environments close to Carnarvon and extending north and south from the town are important mangrove and seagrass habitats. The inter-tidal mangroves stabilise the shoreline and mitigate wave and tidal action. The mangroves also are known to support large numbers of habitat-specific waterbirds, some of which are migratory species protected by international agreements. On a regional basis, mangrove habitats are recognised as areas of high biological productivity, and as an important medium for nutrient exchange between terrestrial and marine ecosystems. These functions contribute to the overall productivity of the region's fishery.

### **Cape Range National Park**

Cape Range National Park encompasses 50 581 ha of the Cape Range near Exmouth. The park comprises a heavily dissected limestone range and a fringing coastal plain directly adjacent to the northern part of the Ningaloo Marine Park. The Cape Range is the only elevated limestone range on the north-western coast of Western Australia. The impressive weathered limestone range has plateaus of up to 314 m high.

The park is vested in the National Parks and Nature Conservation Authority and managed by CALM. The North West Cape is an exceptionally rich environment displaying significant scientific, cultural, biological, scenic and recreational attributes.

The Cape Range National Park protects a significant segment of Western Australia's environment and wildlife for the benefit and enjoyment of the community. It will be developed to accommodate public recreation within its capacity for long-term stability and maintenance of its resources.

The park contains eight camping areas with approximately 90 individual sites. It generally is accessed from the north via Yardie Creek Road, which is sealed from Exmouth and most of the way through the park. It is unsealed thereafter. The State charges an entry fee.

### **Cape Range karst system**

The North West Cape may be described as a karst landscape. The area contains extensive karst formations and has been recognised as a potential key component of any world heritage area nomination.

Karst is formed by the percolation of water through limestone sinkholes and the subsequent dissolution of minerals. The process occurs over a long period of time and is linked closely to the occurrence and distribution of rare and internationally significant species of subterranean fauna. Karst landscape also have development implications as their inherent properties constrain engineering works and waste disposal.

The karst systems of the Cape Range support many relict taxa of international conservation significance. The closest relatives of these taxa indicate that the ancestry of the Cape Range stygofauna is linked to northern Gondwana and the Tethys Sea, which once separated the landmasses of the southern and northern continents. These species include troglobitic fish, shrimps, ostracods, amphipods, remipedes, plus many other families and orders of terrestrial and aquatic species. Threatening processes include pollution (townsite, chemical, sedimentation), mining (direct impacts and pollution) and feral animals (feral fish have been found in cave systems near Exmouth). Knowledge of subterranean fauna of the Cape Range is based on limited surveys. The biological knowledge of subterranean systems of the Cape Range is very poor, but given the high level of endemism and lack of research, it is highly likely that as yet undiscovered taxa exist.

There are two threatened ecological communities found on the Cape Range peninsula associated with the karst system; the Cape Range Remipede Community of Bundera Sinkhole, and Cameron's Cave Troglobitic Community. The Bundera Sinkhole is situated within the Department of Defence military exercise area to the south of Cape Range National Park, and comprises a rich stygobitic fauna assemblage composed primarily of crustaceans, but including a blind fish. Cameron's Cave Troglobitic Community is known only from Cameron's Cave within the Exmouth townsite, and is recognisable by its unique composition of species, of which at least eight are endemic to this location.

### **Jurabi and Bundegi coastal parks**

Two areas of coastal land at the northern end of the North West Cape are reserved for the purpose of recreation and coastal management and are vested and managed jointly by CALM and the Shire of Exmouth. The reserves consist of holocene coastal deposits forming a complex of dune and beach sequences with large dune ridges and occasional active blowouts, and significant turtle nesting beaches. The dunes are susceptible to disturbance and a management plan to ensure their long-term protection has been prepared. The coastal parks together with the Australian Government lands form a coastal extension of the Cape Range National Park and are likely to be managed in a manner consistent with the parks' management plan.

### **Exmouth Gulf**

Exmouth Gulf is characterised by:

- intermittent beaches separated by low and exposed limestone anchor points along the western gulf shoreline;
- low beaches and mangrove tidal flats throughout the southern portion of the gulf; and
- extensive mangroves and inter-tidal flats extending from Giralia Bay to the northern Shire of Exmouth study area boundary.



The south-eastern shore of Exmouth Gulf is characterised by supra tidal flats up to 20 km wide. Numerous tidal channels extend landward from the sub-littoral zone and carry tidal waters into the interior. The channels and inter-channel areas on the seaward margin of the flats within the study area are bordered by extensive mangrove thickets and terrains of algal mat. These associations are key elements in nutrient recycling for organisms, which inhabit the North-West Shelf. The tidal channel system also is inhabited by juveniles of many marine species, including the commercially important prawns.

The gulf is relatively sheltered but subject to the influences of tropical cyclones and storm surge. Sediment movement along the gulf shoreline indicates a low net littoral drift to the south in the vicinity of Exmouth and Learmonth with evidence of northward longshore sediment transport in the north-eastern part of the gulf.

Recent initiatives now recommend the inclusion of the Exmouth Gulf mangroves as a marine reserve.

### Lake MacLeod

Lake MacLeod is an extensive salt lake and pan system which provides habitat for large numbers of waterbirds, some of which are migratory. The surface of the lake is normally dry but along the north-western shore, there are large irregular ponds which contain seawater of near-normal salinity. Seawater continually wells up from the subterranean caverns and recharges the ponds, which are bordered by mangroves and contain fish and other marine organisms. The environments associated with the permanent wetlands are of outstanding conservation value. This site has long been considered appropriate for potential Ramsar listing.



Dampier Salt, operating under a mineral lease agreement, evaporates and extracts salt from the southern part of Lake MacLeod.

### Babbage and Whitlock islands

Babbage and Whitlock islands are located on the western side of Carnarvon and are separated from the town by the south arm of the Gascoyne River, known as the Fascine. The islands are partially protected by a conservation reserve, which protects the principal areas of conservation value such as the mangroves, wet samphire and mobile dunes, and the sandy inter-tidal shorelines at the southern end of Whitlock Island.

The objective of the islands' management plan is to ensure that managed public access is provided to the public open spaces and to mangrove, samphire and dune conservation areas, and to detail the actions necessary to ensure the maintenance of these ecosystems.

### Murion islands

The two elongated, medium sized, sparsely vegetated Murion islands, lie at the western end of the Rowley Shelf. The two islands are Crown reserves for recreation and the conservation of flora and fauna jointly vested in the Shire of Exmouth and the Conservation Commission of Western Australia. The islands are managed in accordance with the prepared management plan. The islands waters have prolific coral growth and are important turtle and seabird nesting rookeries. The islands together with the adjacent Sunday Island are experiencing increasing recreational usage and are highly prospective for hydrocarbons and exploration is anticipated to increase in this region in the next decade. The waters surrounding the islands are proposed as the Murion Islands Marine Management Area.



## 1.2 Regional land use plan

The Regional land use plan, shown in figure 4, builds on the opportunities, constraints, values and planning issues discussed in the preceding section. The purpose of the regional land use plan is to identify the preferred land uses for specific locations within the study area.

The strategy recognises that land uses will, in reality, be more complex than these categories suggest. The aim is to guide broad land use over the 30 year life of this strategy. The following sections outline the intentions of each land use category.

### 1.2.1 Land uses

#### **Cape Range National Park and other conservation and recreation reserves**

This land use includes reserves in the terrestrial conservation system. This includes the Cape Range National Park, Jurabi and Bundegi coastal parks, Murion islands and other conservation and recreation reserves within the study area. In these areas, it is proposed that development be limited, with environmental protection being the key criterion in relation to all development decisions. These areas should be administered in accordance with management plans.

The management plan for Cape Range National Park and proposed additions is being reviewed and a new plan prepared for public comment. Currently, accommodation for a ranger is provided at Milyering and additional

accommodation may be required within the park to provide enhanced management outcomes in the future.

Murion islands have high conservation values and form an important part of conservation and recreation reserve system. Bundegi and Jurabi coastal parks are two areas of coastal land at the northern end of the North West Cape, which combined with the Australian Government lands, form a coastal extension of the Cape Range National Park adjacent to significant marine areas and contain important turtle nesting beaches. Many of the islands in Exmouth Gulf are nature reserves for the protection of flora fauna.

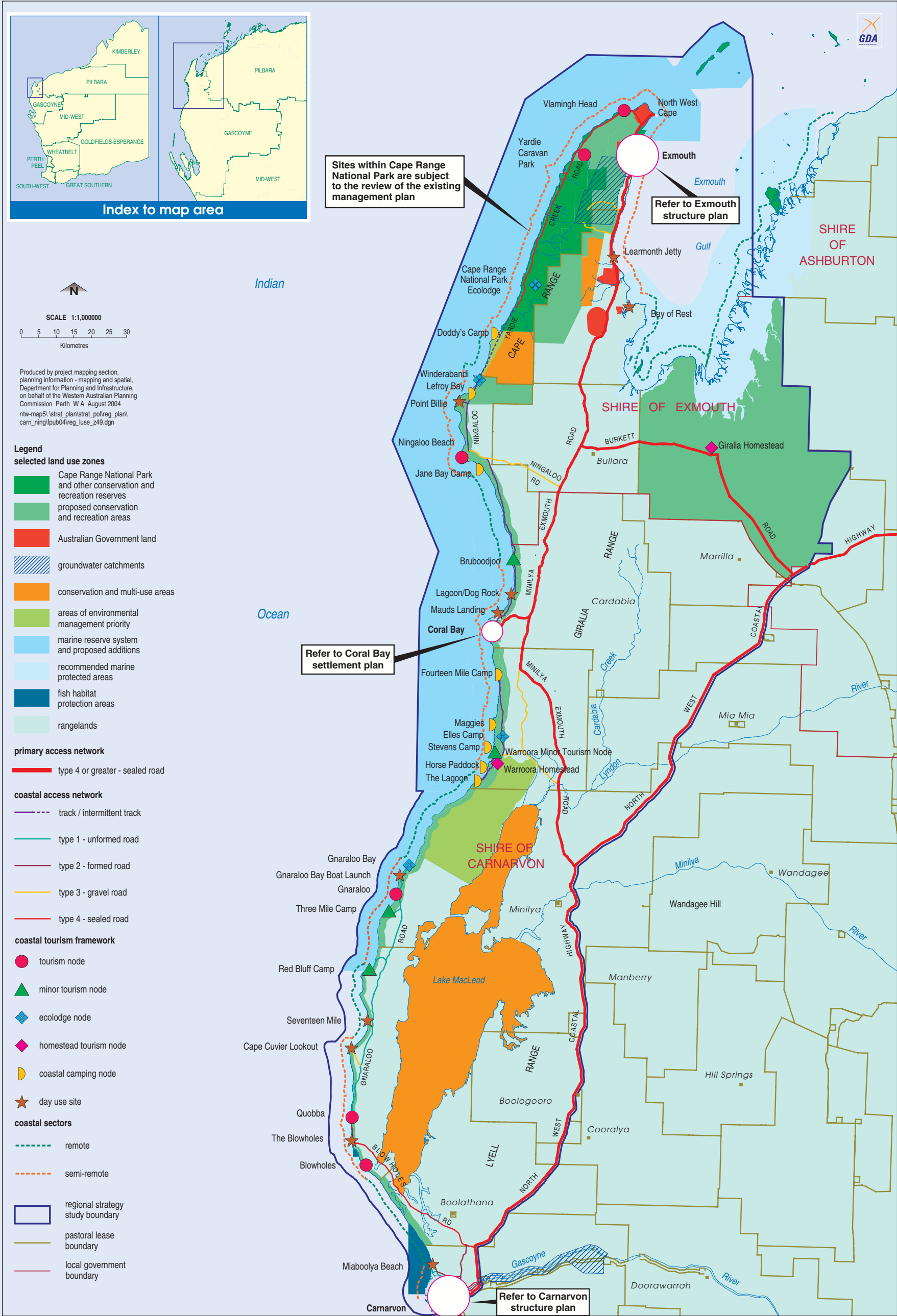
#### **Proposed conservation and recreation areas**

This category includes areas that have been identified to be added to the conservation reserve system. The areas have either high conservation and/or recreation value or are required to manage adjacent areas of high conservation and/or recreation value. This includes the proposed pastoral lease exclusions along the Ningaloo coast, the proposed extensions to the Cape Range National Park, and the proposed Giralia conservation park. It should be noted that historically the whole of Ningaloo station has been included in proposed extension to the Cape Range National Park, however the Regional land use plan only identifies the land included in the pastoral exclusion process.

It is recognised that the coastal sections of pastoral leases are under significant recreational pressure. They also are environmentally sensitive because of their relationship to the marine environment. The lack of coordinated management of these areas has led to considerable environmental degradation. The creation of conservation and recreation reserves from the proposed pastoral lease exclusions (a strip between one and two kilometres wide along the Ningaloo coast) will help overcome these issues. Once reserved, these areas will be managed in accordance



Figure 4: Regional land use plan



with guidelines for existing conservation and recreation areas.

The Giralia conservation park is proposed to be created from the former Giralia pastoral lease. This will require the resolution of vesting arrangements, including native title, and the preparation of a management plan.

A series of Crown reserves for conservation and recreation will be gazetted at Giralia and along the coast and managed as an integrated whole to maintain the area's environmental values, especially those which are linked to potential world heritage nomination.

## **Marine reserve system and proposed additions**

The future marine reserve system aims to comprise the existing Ningaloo Marine Park and proposed southern extension to Red Bluff, the proposed Murion islands marine management area and the Ningaloo Marine Park (Commonwealth Territorial Sea). These areas should be managed in accordance with the relevant marine management plan, so as protect and conserve their environmental values and to maintain any potential world heritage values of the areas.

## **Recommended marine protected areas**

Within the study area three areas were identified in *A representative marine reserve system for Western Australia*, the first two of which still require further investigation. The first was an area of coast from Red Bluff to Point Quobba, the second was for Exmouth Gulf (southern and eastern mangal areas and adjacent coastal waters), and the third was the Murion islands, which is now a proposed marine management area. Development in these areas should be in accordance with the recommendations of the Marine Parks and Reserves Selection Working Group and consistent with any management plans.

## **Areas of environmental management priority**

Areas of environmental management priority are areas of high conservation value, not currently proposed to be added to the conservation estate, which should be managed to protect the area's values. Two areas have been identified, recognised for their high conservation values. These are the South Giralia Plateau area and the Bundera Coastal Protection Area. Both areas are classified as remote coastal sectors and are identified as long-term remote, mainly non-vehicular access areas. Both can still be utilised by water-based and walk-in visitors.

South Giralia Plateau is the area between the coast and the western shore of Lake MacLeod from Cape Farquhar to Warroora Homestead and is currently used for pastoralism. The presence of incised river channels within this predominantly limestone area is unique along this section of coast. These channels form a direct link with the coast and hence this area should be given a high status of protection. The existence of subterranean channels linking the ocean and the northern permanent water section of Lake MacLeod is also significant to the provision of habitat for birds, especially over 20 migratory species and the mangroves along the lake edge. Any development in this region, including road construction, has the potential to damage the channels that link the permanent water section of Lake MacLeod to the ocean. In addition, the plateau is the sole recorded area of an endemic mallee. Immediately to the south of this significant area is an area of relic linear dune plateau with good remaining biodiversity levels and restricted access.

The Bundera Coastal Protection Area contains one of the two threatened ecological communities found on the Cape Range peninsula associated with the karst system: the Cape Range Remipede Community of Bundera Sinkhole. The Bundera Sinkhole is situated within the Department of Defence Learmonth Air Weapons Range (buffer area component), and comprises a rich stygobitic



fauna assemblage composed primarily of crustaceans and includes a blind fish. Bundera Sinkhole is one of a series of access points to subterranean karst wetlands that range over 1-5 km wide and 70 km in length along a narrow coastal plain between Cape Range and the Indian Ocean. A nomination is currently being prepared by Department of Defence and Department of Environment and Heritage for Ramsar listing the sinkhole and its associated karst system.

## Fish habitat protection areas

Within the study area there is an existing fish habitat protection area at Miaboolya, and a proposed fish habitat protection area at Point Quobba. The establishment of a fish habitat protection area provides a framework to enable better management of human activities, minimise their impacts and encourage community stewardship for the conservation of the area.

Fish habitat protection areas are areas of state waters set aside under s.114 of the *Fish Resource Management Act 1994* which may provide for some or all of the following purposes:

- The conservation and protection of fish, fish breeding areas, fish fossils or the aquatic ecosystem.
- The culture and propagation of fish and experimental purposes related to that culture and propagation.
- The management of fish and activities relating to the appreciation or observation of fish.



## Australian Government land

At this stage, the Australian Government intends to continue its operations in the area, comprising of numerous installations - the most important of these being the Harold E. Holt Naval Communications Station, the Learmonth Air Base and other miscellaneous areas for communications infrastructure (Learmonth Air Weapons Range is classified as a Conservation and multi-use area).

The naval communications station (which abuts the town of Exmouth) will be operational for at least the next 30 years, and

there is no intention to transfer it to the state government. The Australian Government has indicated that there are opportunities for the lease or transfer of some parcels of the land for activities that would not affect the station's operations. Low-impact commercial activities such as aquaculture or small-scale tourism and

educational activities may be accommodated, but large-scale commercial/residential/tourism activities are not supported. These activities should not replicate the role and function of the Exmouth town centre and should be undertaken in accordance with State legislation and be subject to planning and development approval.

## Groundwater catchments

This category reserves land for groundwater catchments to protect the water supply for the townships of Carnarvon and Exmouth. The water reserves will be managed for priority 1 source protection and strict limitations on land use will apply. Retention of natural vegetation and ecosystem maintenance are considered the most compatible land uses on the water reserve.



## Conservation and multi-use areas

This land category applies to Lake MacLeod, the majority of Learmonth Air Weapons Range and the proposed 5(h) reserve for Conservation and limestone resource management adjacent to Cape Range National Park.

The Learmonth Air Weapons Range is currently managed by the Department of Defence in accordance with its obligations under the *Environment Protection and Biodiversity Conservation Act 1999* for areas of high conservation value. Currently the Department of Defence advises that this area is necessary for operational requirements however should this need cease, the area should be included into Cape Range National Park, as has been the recommendation of numerous studies.

Areas of Lake McLeod which currently are used or proposed to be used for salt and gypsum production are included in this land use category. Development in this area will be subject to relevant State Agreements Acts, the *Mining Act 1978* and any environmental requirements of the Department of Environment. The current owners of this minerals project, Rio Tinto, have entered into discussions with the WWF Australia to progress a management plan for the lake, which recognises its values as a potential Ramsar listed site.

The area identified for the 5(h) reserve was agreed to by the then Ministers for Mines and the Environment to ensure future access to high quality limestone resources, whilst recognising that the areas further north and of higher relief should be protected from future mining to preserve the visual amenity. Any major proposals for limestone extraction, if deemed environmentally acceptable, should be confined to the proposed 5(h) reserve for Conservation and limestone resource management.

## Rangelands

The rangelands, away from the Ningaloo coast, are areas, which have the potential to be multi-use areas. In land use terms, the continuation of the pastoral industry along with the associated uses, promotion of low-key, small-scale tourism development, and facilities for industries such as inland aquaculture are encouraged, subject to the proponent gaining planning and environmental approvals and receiving the necessary diversification approvals. Environmental management of the biodiversity of the rangelands is also supported and encouraged. Aquaculture proposals for the Exmouth Gulf coastal areas and inland pastoral areas should be in accordance with the Gascoyne region aquaculture development plan. Aquaculture proposals will not be supported where they abut the Ningaloo Marine Park or proposed extensions or fall within the area being proposed as future conservation and recreation reserves.

### 1.2.2 Carnarvon, Exmouth and Coral Bay

Carnarvon and Exmouth are the existing regional centres within the region. An objective of this strategy is to reinforce these towns as the key administrative and service centres for the study area. The centres can support a range of land uses as designated under the appropriate town planning schemes.

Coral Bay is the only tourism settlement in the study area. The role of the settlement is to provide a range of tourist accommodation, food services, groceries, limited automotive service, information, tours, and packaged activity options.

Carnarvon, Exmouth and Coral Bay sit above the identified Coastal tourism framework.



### 1.2.3 Access network

The roads within the study area form part of either the primary access network or the coastal access network. These networks are shown on the Regional land use plan (figure 4).

#### Primary access network

The primary access network within the study area consists of the North West Coastal Highway, Minilya - Exmouth Road, Burkett Road and Coral Bay Road. Main Roads WA is the owner and manager of these roads. All of the primary roads are sealed and designed to allow safe, high-speed access.

The primary access network is providing adequate access to the study area at present. Planned upgrading of the network by Main Roads WA to reduce the level of road closures (Lyndon River Crossing, Minilya - Exmouth Road) and widening sections to meet traffic growth and composition (North West Coastal Highway, Gascoyne River to Blowholes and Minilya - Exmouth Road) will ensure the network continues to fulfil its function. The upgrading of the primary access network, outlined in this document, continues to be supported by the strategy. These roads may require widening to ensure they fulfil their function.

This strategy does not support any additions to the primary access network.



#### Coastal access network

The main coastal access network provides direct access to the coastal area and the majority of pastoral stations within the study area. The standard of road varies from sealed road to sandy tracks, which are generally the responsibility of local government.

In light of the recent *State sustainability strategy*, the Ningaloo coast regional strategy Carnarvon to Exmouth recommends that the status quo of all roads in the study area be maintained until such time as the vesting and management arrangements for the coast and roads themselves (as defined in the Coastal

tourism framework) has been determined and established. This is so that the transport system does not have an adverse impact on the environment or guide the type and location of tourism nodes proposed in this strategy.

The following describes the future form and function of each of the

sections of the coastal access network.

#### North West Coastal Highway - Blowholes

The Blowholes Road will remain a good-quality type 4 sealed road providing access for tourists and local residents to the southern coastal section of the study area and servicing the Dampier Salt operation.

#### Blowholes to Gnarlaloo Bay

Gnarlaloo Road is gradually upgraded to be a type 2 (formed road) standard between the Blowholes and Gnarlaloo Bay. The road provides access to Quobba and Gnarlaloo homesteads, HMAS Sydney Memorial, Cape Cuvier salt and gypsum-loading facilities, Red Bluff, Gnarlaloo, Three Mile Camp and various recreation and camping sites along the coast.

## **Gnaraloo Bay to Warroora**

The access between Gnaraloo Bay to Warroora is to remain closed with the area being classified as a remote coastal sector and an area of environmental management priority.

## **Warroora to Coral Bay**

The Warroora to Coral Bay section will comprise a series of type 1 road spurs from the main northern station access road connecting to the Minilya - Exmouth Road. The tracks are currently subject to restrictions on usage. No coastal through access to Coral Bay is provided. The Warroora access roads remain type 3 roads.

## **Coral Bay to Ningaloo**

This track is proposed as a realigned type 1 road providing coastal access to Ningaloo Road and spurs into the features of The Lagoon, Oyster Bridge and Bruboodjoo.

## **Ningaloo to Yardie Creek**

The Ningaloo to Yardie Creek Road is a local government road (Shire of Exmouth).

The section from Ningaloo to Winderbandi is proposed to be a type 1 road, providing access to a number of locations along the coast, including secondary access to Ningaloo Homestead (main access is via the east-west Ningaloo Road), Norwegian Bay, Lefroy Bay and Winderabandi.

The section from Winderabandi to Yardie Creek is to remain an intermittent four-wheel drive only track. This section may be closed due to the breaching of the Yardie Creek sand bar, environmental management of the Bundera Coastal Protection Area to prevent damage to samphire areas during periods of rain or as part of Department of Defence operational requirements. This will become a refuge area for those seeking an experience,

which generally precludes vehicles from the coast. Walking and sea access along this section of coast will be encouraged in preference to four-wheel drive vehicle access.

## **Yardie Creek Crossing**

There will be no constructed crossing at Yardie Creek and the existing natural sand bar will be utilised for intermittent four-wheel drive crossing only. This recognises the intermittent access arrangements, which currently exist across the Department of Defence land south of Yardie Creek as this access may be closed as detailed above. Future access will be determined through the preparation and implementation of a management plan for the area.

## **Cape Range to Learmonth**

The strategy acknowledges some community interest in the construction of an additional vehicular access across Cape Range, however recognises that further investigation as to the environmental impact and economic viability of such a road is required prior to further consideration.

## **Ningaloo to Minilya - Exmouth Road**

Ningaloo Road is managed by the Shire of Exmouth and is an important access road to the coast and Ningaloo Station. It is a type 3 gravel road and provides good access to Ningaloo Station. It is used to service the station and by tourists wishing to access coastal areas between Ningaloo and Yardie Creek.

## 1.2.4 Coastal tourism framework

The following hierarchy of coastal tourism nodes have been identified. These are discussed in further detail in the Coastal tourism framework in section 1.3. Dispersed camp sites are not shown on the Regional land use plan (figure 4) or the Coastal tourism framework (figure 5) as these will be subject to further detailed planning during the implementation phase.

- Tourism node
- Minor tourism node
- Ecolodge node
- Homestead tourism node
- Coastal camping node
- Dispersed camp site
- Day use site

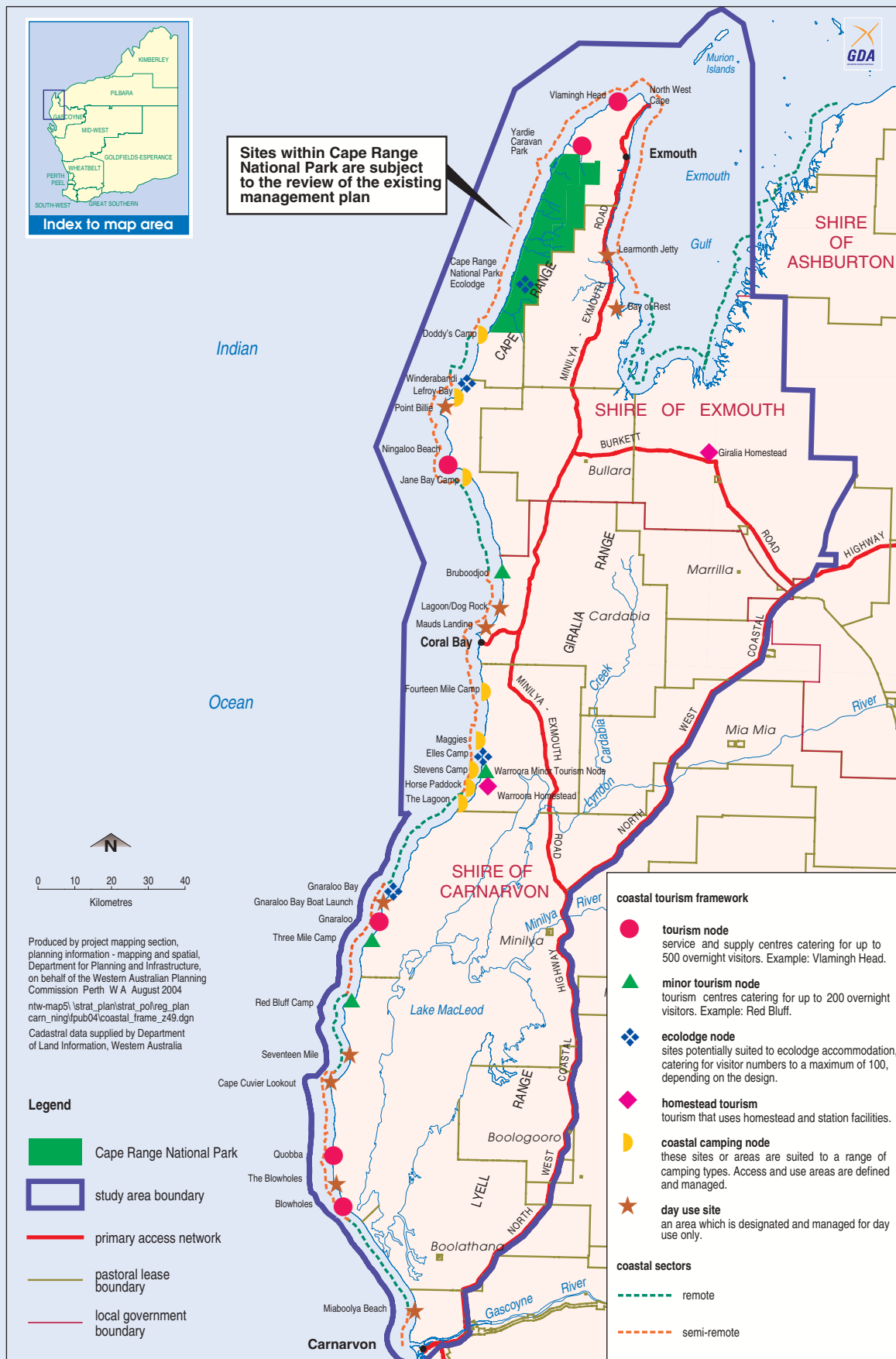


## 1.2.5 Coastal sectors

The coastal sectors outside of Carnarvon, Exmouth and Coral Bay have been classified as either remote or semi-remote experiences. These are discussed in further detail in the Coastal tourism framework in section 1.3.



Figure 5: Coastal tourism framework



## 1.3 Coastal tourism framework

### 1.3.1 Introduction

The environmental impacts of tourism are evident on the Ningaloo coast. This assessment of existing and potential tourism nodes along the coast responds to the increased visitors to the area by providing a framework for sustainable tourism management and growth.

Although this strategy covers a larger study area, the current pressures on the Ningaloo coast have led to the immediate consideration of the coastal environment. It should therefore be noted that detailed assessment of sustainable tourism use has not generally been undertaken for inland locations within the study area.

In order to provide recommendations for future sustainable tourism use, a broad assessment of specified locations on the Ningaloo coast has been undertaken. Most of the locations have a history of tourism use. The findings of this assessment are the basis for recommendations as to the level of appropriate tourism in specified locations on the Ningaloo coast (refer to figure 5).

The recommended level of tourism use falls within a hierarchy of categories, which was developed from those detailed in *Future directions: sustainable tourism and land use scenarios for the Carnarvon-Ningaloo coast* (Future directions) and the draft *Carnarvon-Ningaloo coast regional strategy*. The terms used have changed to better reflect the character of the Ningaloo coast. Two new types of tourism node have been added, ecolodge and homestead tourism.

It should be noted that no new tourism development shall be considered outside of Carnarvon, Exmouth and Coral Bay until land vesting and management in relation to the pastoral coastal exclusion process has been agreed (this is being undertaken through a separate process) and an implementation strategy will further consider the issues related to the staging of tourism opportunities along the Ningaloo coast.

#### Planning objective

**Develop a Coastal tourism framework for the Ningaloo coast, which considers environmental and other relevant factors, in order to facilitate planned sustainable tourism along the Ningaloo coast.**

### 1.3.2 Coastal tourism node definitions

Coastal tourism nodes have been identified along the Ningaloo coast. These are based on historical use patterns, acknowledgement of increasing tourism demand, *Future directions* scenarios and feedback from community consultation on these scenarios.

The categories of coastal tourism nodes are tourism, minor tourism, ecolodge, homestead tourism, coastal camping, dispersed camping and day use site. Sites within Cape Range National Park are acknowledged, although not assessed as part of this process. The different types of coastal tourism node are defined below.

#### Tourism node

Service and supply centres catering for up to 500 overnight visitors. These nodes provide a range of visitor services and amenities such as accommodation, ecolodge/camps, caravan bays, camping sites, utilities, limited food and grocery facilities and perhaps fuel.

## Minor tourism node

Tourism centres catering for up to 200 overnight visitors. These sites generally provide camping and may include some covered accommodation such as ecolodges with a local focus. Provision of supplies and services is limited.

## Ecolodge node

Sites potentially suited to ecotourism accommodation, catering for visitor numbers to a maximum of 100 depending on the design. Ecolodge style proposals also may be considered in tourism, minor tourism or camping nodes, as well as the specific ecolodge nodes identified in this strategy.

Ecolodge is a generic term used in this document to denote accommodation that meets the philosophy and principles of ecotourism. It includes tourist accommodation that requires special care in design, construction and operation so as not to destroy the very resources or qualities that visitors come to experience. An ecolodge should subtly fit in with the landscape, utilise sustainable power, be low energy incorporating solar passive design, minimal water use, ecologically sensitive waste disposal and recyclable processing of all waste with no resultant pollution. As with all ecotourism proposals, environmental education as well as utilisation of local culture, services, products and communities are important as is the actual operation of the facility. Information on these aspects must be included within any proposal.

## Homestead tourism node

Tourist accommodation which utilises land/buildings currently or previously used for the accommodation of pastoral station lessees/staff. The size of the node is dependent upon the approval of a structure plan, which considers all policies of the Planning and environmental guidelines for

sustainable tourism on the Ningaloo coast and a local impact assessment, however overnight accommodation capacity would be in the vicinity of 50 people.

## Coastal camping node

Areas with four or more established camping sites providing a range of camping opportunities, including single or group sites appropriate to a defined level of management, experiential setting and ability of the site to sustain use. Development of camping sites generally requires minimal built infrastructure apart from access, pedestrian paths, toilets and information structures. Coastal camping nodes may include ecocamp-style accommodation in association with commercial operations.

## Dispersed camp site

Single or small clusters of separated sites that appeal to visitors seeking solitude, remote activities, few if any support facilities and relatively low levels of management presence. Dozens of dispersed camp sites of various sizes and configurations currently are located along the Ningaloo coast. Individual sites often are favoured by a small number of visitors with a specific or seasonal activity focus, such as fishing. Few dispersed sites are monitored or visited by management staff on a regular basis resulting in variable, but potentially severe levels of site modification. Some established dispersed sites are sustainable while others are not.

Dispersed sites may be appropriate in both coastal sectors, remote, semi-remote, but as with all visitor sites on the coast, dispersed camping will require a significant level of site planning and ongoing management. All dispersed sites must be defined, monitored and managed.

Identification and suitability assessment of existing and potential dispersed camp sites are not included in this strategy. The detailed



level of site planning is assessed more appropriately in a coastal management plan.

A significant amount of camping currently occurs on the beach that often impacts upon the primary dune system and associated vegetation. Most beach camping occurs within the boundary of the Ningaloo Marine Park. Roads and camping sites have disturbed natural dunes and vegetation but, to date, there are no known studies to establish or assess the significance of the changes to the local ecology of this use.

Beach camping has become a popular activity for many long-term visitors to the Ningaloo coast who have become culturally and emotionally attached to this practice. Any change would be contentious and unwelcomed by current users and require appropriate research and education to support any proposed changes in camping behaviour. While beach camping is very popular, site conditions generally do not meet development suitability criteria and therefore no coastal camping nodes have been recommended for beach locations.

It is noted however, that dispersed camping on beach locations may be environmentally acceptable in some locations and this will be further investigated through the preparation of detailed management plans for coastal areas. Changing use patterns and establishment of any restrictions will require further study and consultation with government agencies, user groups and other interested individuals and a phased approach should be considered in conjunction with an appropriate education program.

## Day use site

These sites are generally associated with a feature, activity or interpretation focus, suited to short stays. The area is designated and managed to provide visitor amenities for day use only. It may include parking facilities, shade shelters, barbecues, toilets and picnic areas but does not cater for, or permit, overnight stays.

## Cape Range National Park sites

The coordinated planning of tourism within Cape Range National Park is administered through a management plan, prepared by the Department of Conservation and Land Management on behalf of the Conservation Commission of Western Australia. For this reason, nodes, coastal and dispersed camping sites in the national park are not described in the assessment. The exception to this is the identification of one potential ecolodge site within the national park.

### 1.3.3 Coastal sectors

To ensure the continued provision of a variety of experiences along the Ningaloo coast two coastal sectors have been identified on the Coastal tourism framework map. These reflect the preference for nature-based tourism along the Ningaloo coast. These are described below:

#### Remote

Landscapes within this class are largely unmodified or undeveloped and display a high degree of naturalness and exhibit natural qualities with negligible evidence of human activity, formed access, unnatural visual impacts, or noise. Change due to human use is not evident. This is shown in green on the Regional land use plan (figure 4) and the Coastal tourism framework (figure 5).

#### Semi-remote

Landscapes within this class are predominantly unmodified but may contain some minor evidence of human activity, noise and development, including roads and walking tracks. Change due to human use is



evident, but subordinate to the naturally established landscape. This is shown in orange on the Regional land use plan (figure 4) and the Coastal tourism framework (figure 5).

### 1.3.4

## How the Coastal tourism framework was developed

The recommendations for the Coastal tourism framework are based on the following.

- The information contained in the site inventory of the Ningaloo coast.
- Detailed field assessments undertaken by relevant government agencies (including the Department for Planning and Infrastructure, local government, Department of Conservation and Land Management, Department of Fisheries and Tourism Western Australia) to assess the qualities of each site based on a set of selection criteria.
- Consideration of environmental characteristics of each identified site.
- Recognition of current tourism activities.
- A review of previous studies.
- Public consultation through the release of *Future directions* and the draft *Carnarvon-Ningaloo coast regional strategy*.
- The consideration of the steering committee for the Ningaloo coast regional strategy Carnarvon to Exmouth presented to the Western Australian Planning Commission for endorsement.

The detailed assessment of each site within the Coastal tourism framework has been presented under the following headings.

### Description

This provides a general description of the identified node, including its location and visual appearance. The location of the node is shown through the delineation of a tourism investigation envelope, which visually defines the node area through the use of aerial photography.

### Environmental characteristics

This is a concise summary of the environmental characteristics of each identified area including recognition of whether the coastal sector is remote or semi-remote. It is based upon fieldwork and previous studies including environmental sensitivity as determined by the *Gascoyne coast regional strategy*. Environmental sensitivity is classified as highly sensitive marine, highly sensitive, moderately sensitive and least sensitive. Details such as landform, vegetation, adjacent marine habitat, information on Aboriginal heritage sites, pastoral use and description of known tourism activities are included here.

### Assessment

A set of selection criteria was used as the base for the assessment of each site within the Coastal tourism framework. The criteria ensure the protection of important environmental and cultural values and sustainability of ecosystems. The assessment then forms the basis for the recommendation for the desired level of tourism development for the site.

Five selection criteria were considered in order to provide a basis for the recommendations.

- Size

A land area of sufficient scale and configuration to accommodate the designated level of sustainable tourism.

Range: limited - adequate - expansive.

- Environmental stability

Soils, biological composition, visual landscape and ecological land systems likely to be stable and sustain change without unacceptable loss of value.

Range: sensitive - acceptable - stable.

- Attractions and features

A land area with an attractive appeal due to the presence of a number of special sites or attractions of biological, social, cultural, visual or historical significance.

Range: few - numerous.

- Distinctiveness

Sites of particular uniqueness due to natural elements, proximity to features of note, historical land uses, landscape characteristics or particular attractions.

Range: low - moderate - exceptional.

- Future options/expansion potential (desirable but not essential)

Sites with suitability for expansion or upgrading, possibly from minor tourism to tourism node designation.

Range: limited - moderate - exceptional.

## Additional comment

In some instances an additional comment is offered after the recommendation. This information should be considered in any future planning for the site.

## 1.3.5 Tourism investigation envelopes

Tourism investigation envelopes have been identified for each of the coastal tourism nodes. The tourism investigation envelope is a broad-scale area of land potentially suited to the development of visitor/tourist facilities and services. The aerial photograph geographically depicts each area recommended in the Coastal tourism framework.

While the entire area within the tourism investigation envelope is potentially suited for development, the scale of development must be consistent with the level of tourism recommended for the node. Generally, large areas have been included within the envelopes to allow for innovative design options and to minimise the need to expand or alter the envelopes to accommodate a variety of tourism facilities.

Nodes may also have a tourism focus area, which delineates the most appropriate building area within the envelope based on this assessment. This area is indicative only and should be subject to further detailed assessment as part of any proposal for tourism use.

Nodes may also have a recommended day use precinct identified. This generally acknowledges an attractive natural feature of the node and the desire to separate day use and overnight tourism uses, as well as discouraging hard infrastructure development in areas of high environmental sensitivity.

All tourism land use proposals must comply with the requirements of the Planning and environmental guidelines for sustainable tourism on the Ningaloo coast without the need to alter the recommended envelope.

Additional factors, that may ultimately influence whether a tourism investigation envelope is developed or not, such as

community attitudes and economic viability, have not been included in the following node assessments and recommendations. These types of factors will be dealt with at more detailed site planning and assessment, as outlined in the Implementation of the Coastal tourism framework.

### 1.3.6

## Overview of Coastal tourism framework recommendations

The recommended level of tourism along the Ningaloo coast is summarised below. Please note that sites are listed from south to north in each category. This list should be read in conjunction with figure 5, Coastal tourism framework.

### Tourism nodes

Blowholes  
Quobba  
Gnaraloo  
Ningaloo Beach  
Yardie Caravan Park  
Vlamingh Head

It should be noted that the Blowholes, Yardie Caravan Park and Vlamingh Head (which includes Lighthouse Caravan Park) are already substantially developed and currently cater for tourist accommodation numbers of the order recommended in a tourism node. Quobba and Gnaraloo homesteads presently offer station stay tourist accommodation while no tourism activity occurs at Ningaloo Beach.

### Minor tourism nodes

Red Bluff Camp  
Three Mile Camp  
Bruboodjoo  
Warroora Minor Tourism Node

It should be noted that Red Bluff Camp and Three Mile Camp currently offer overnight accommodation nearing the 200 limit for a minor tourism node, however Bruboodjoo presently has no infrastructure and is used for coastal camping so has not reached the minor tourism potential recommended.

### Ecolodge nodes

Gnaraloo Bay  
Elles Camp  
Winderabandi  
Cape Range National Park Ecolodge

It should be noted that there are presently no ecolodges along the Ningaloo coast. A small ecocamp operates in the Cape Range National Park at Reef Retreat. Elles Camp and Winderabandi currently cater for overnight accommodation in the form of coastal camping however no camping is permitted at either Gnaraloo Bay or Mandu Mandu Gorge North at present.

### Homestead tourism nodes

Warroora Homestead  
Giralia Homestead

It should be noted that the listed homesteads presently offer station stay tourist accommodation.

### Coastal camping nodes

The Lagoon  
Horse Paddock  
Stevens Camp

Maggies

Fourteen Mile Camp

Jane Bay Camp

Lefroy Bay

Doddy's Camp

Cape Range National Park - coastal camping nodes are not shown on the Coastal tourism framework map and were not assessed as part of this process, however include:

Boat Harbour, One K Camp, Yardie Creek, Osprey/Bungarra, Pilgramunna, Kurrajong, South Mandu Camping Area (Reef Retreat Ecocamp), North Mandu, Tulki Beach, Lakeside, Mesa, T-Bone and Neds (see note 1).

It should be noted that all listed coastal camping nodes have a history of camping use. It is recognised that camping has occurred both in the Ningaloo Marine Park and on pastoral leases in the nodes outside Cape Range National Park, although the different pastoral lessees have managed this in various ways. Increasing numbers of campers have contributed to environmental degradation on the Ningaloo coast. This will require an improved management regime that may include relocation of camping activities.

## Dispersed camp sites

Many visitors to the Ningaloo coast presently seek this style of camping which is made up of isolated single or small clusters of separated camp sites. This style of camping appeals to visitors seeking solitude and remote activities in an environment with minimal supporting infrastructure and services that has low levels of management presence. Although dozens of dispersed camp sites of varying size and configuration occur along the Ningaloo coast, these are not shown on the Coastal tourism framework map.

Management of camping is however a very important element for future planning of the Ningaloo coast.

## Day use sites

Miaboolya Beach

The Blowholes

Cape Cuvier lookout

Seventeen Mile

Gnaraloo Bay boat launch

Mauds Landing

Lagoon/Dog Rock

Point Billie

Learmonth Jetty

Bay of Rest

Cape Range National Park - day use sites are not shown on the Coastal tourism framework map and were not assessed as part of this process, however are listed here for information purposes.

Yardie Creek, Sandy Bay, Pilgramunna, Bloodwood Creek, Mandu Gorge Walktrack, North and South Mandu, Oyster Stacks, Turquoise Bay, Tulki Beach, Trealla Beach, Varanus Beach, Milyering Visitor Centre, Lakeside, Neds/Mesa, Mangrove Bay (see note 1)

It should be noted that only significant day use sites have been listed here. It is acknowledged that many other sites along the Ningaloo coast are for day use purposes.

The recommended day use of Seventeen Mile and Point Billie are discussed in the Assessment and recommendations of identified Coastal tourism framework nodes. The other sites listed will be assessed in detail as part of the implementation of the strategy.

### Note 1

Cape Range National Park existing coastal camping nodes and existing day use sites, provided courtesy of the Department of Conservation and Land Management, are listed for information purposes only. These sites are under a separate review process. The final outcome of the management plan review will supersede information on Cape Range National Park sites detailed in this document.



Figure 6: Blowholes - recommended tourism node



### 1.3.7

## Assessment and recommendations of identified Coastal tourism framework nodes

### Recommended Tourism nodes

#### Blowholes

##### Description

The Blowholes is already substantially developed and currently caters for tourist accommodation numbers of the order recommended in a tourism node. It is a well-established coastal area of appeal to residents of Carnarvon and visitors alike. Shacks and usage patterns developed over many years are the subject of current discussion, and redevelopment planning initiatives and concept development proposals.

##### Environmental characteristics

The settlement is located along a dune coast in a semi-remote setting. The tourism investigation envelope, the foreshore and dune system are located in highly sensitive environments. The land potentially suited to development is limited to a narrow coastal plain between the beach strand and inland dunes and a few inter-dunal swales. The area extends from Blowholes Road in the north to Black Rock in the south. The naturally established coastal vegetation association is altered significantly due to human activities and heavy impacts associated with shack use, introduction of weeds, boat launching, utilities, pedestrian and vehicular activities. The node is in an area of beach and dune sands overlaying limestone and calcarenite with low vegetation.

The marine environment is highly sensitive and has been identified previously as an area under consideration as a possible future addition to the marine protection system. There are no significant marine habitats or marine animal habitats in the adjacent waters. The beach area is dynamic (erosion and accretion) and there are sensitive reef areas around Point Quobba that are protected as part of a Marine Sanctuary Zone and proposed fish habitat protection area. An over-the-beach boat ramp is heavily used. Shacks are still utilised.

The node and surrounds are reserved as parks and recreation under *Shire of Carnarvon Town planning scheme 11 (Shire of Carnarvon TPS 11)*. There are no identified Aboriginal heritage sites in the vicinity.

The tourism investigation envelope in this document is compatible with the work being undertaken on a Blowholes coastal park concept plan which was prepared by the Blowholes Protection Association (BPA), but does not reflect coastal setback or surge designations. Although the tourism investigation envelope is shown, further research as detailed in the additional comments may require amendments to the envelope especially in relation to state coastal setback requirements.

##### Assessment

**Size:** adequate.

**Environmental stability:** acceptable.

**Attractions and features:** numerous.

**Distinctiveness:** exceptional.

**Future options/expansion potential:** limited.

##### Recommendation: Tourism node

**The area is suited to a range of visitor facilities and services that are compatible with a tourism node scale of development. Proposals may cater for the inclusion of**

**chalets, a caravan park, campground, manager/ranger residences, visitor information centre, general store/kiosk, boat launch, day use sites and a pedestrian path network.**

**Blowholes is not suited to permanent residential occupancy and should only be developed for temporary visitor/tourist accommodation.**

**Further assessment of storm surge and coastal setbacks is required prior to a node masterplan and site development plan for the Blowholes being finalised.**

### **Additional comment**

The Blowholes tourism node will continue to be an attractive destination for tourists and visitors seeking to experience the natural features of the Ningaloo coast both through day visitation and appropriate facilities to cater for up to 500 overnight visitors through planned chalet development (including the removal of existing squatter shacks) and improved camping and caravanning facilities.

Further surveys, consultation and research to determine the appropriate coastal setback distance for any future development at the Blowholes is required prior to detailed site or architectural design. This shall be guided by *State coastal planning statement of planning policy 2.6*.

Consultation with the Blowholes Protection Association, which represents approximately half of the shack owners, has demonstrated the need for the preparation of a management plan for the removal of shacks and should include appropriate vehicle and walkway definition/fencing and rehabilitation of building envelopes as part of the phased removal of the shacks. The old post office shack, believed to be the oldest remaining

structure at the Blowholes, has been identified for its potential retention for heritage purposes and restoration for public use/access. The remaining shacks are to be removed in accordance with the requirements of the *Land Administration Act 1997* by 27 March 2008.

The Blowholes Protection Association also acknowledge the staging of replacement shacks would facilitate best practice in design of the node as well as minimise the ecological footprint of new development. Monitoring and auditing of any proposed staged development should occur as part of ongoing management and will provide opportunities to learn through experience.



The concept plan prepared by the Blowholes Protection Association is considered to be a suitable starting point for the detailed site planning at the Blowholes. Further planning and consultation is required, and should address the following issues:

- all development, construction and use shall comply with the

Planning and environmental guidelines for sustainable tourism on the Ningaloo coast and the intent of the Ningaloo coast regional strategy Carnarvon to Exmouth;

- preparation of a foreshore management plan;
- continued use of the northern section of the Blowholes for day use activities;
- realignment of the existing road near Point Quobba (as it is considered to be a safety issue due to its close proximity to the coast) to the west of the waste transfer site and other infrastructure to allow continued access to the node whilst minimising impact on topography. Further investigation as to the most appropriate alignment should consider an existing unused track in this vicinity;



- all structures, including overnight accommodation (apart from camping and caravanning) shall be category five cyclone compliant as per relevant requirements, including the Building Code of Australia;
- the parking area west of the existing shack area be utilised for day use parking;
- existing informal beach boat launch operation be permitted to continue to be freely accessible to the general public, along with a duty of care to the user for any damage or injury, however shall not be upgraded from its present semi-natural condition;
- no vehicles will be permitted to park or drive on the beach, except those engaged in boat launching/retrieval;
- due to the sensitive environment and minimal coastal setback of the node, a service station or any



commercial/industrial use that may impact upon the coastal or marine environment will not be permitted at the Blowholes;

- in keeping with the recommendations of the Ningaloo coast regional strategy Carnarvon to Exmouth, the Blowholes tourism node shall be developed for tourism purposes only with no provision for permanent residential accommodation;
- no subdivision or provision of freehold land shall be permitted in the Blowholes tourism node;
- all higher order and higher impact infrastructure, tourism and other developments should occur in either Carnarvon or Exmouth; and

- a maximum of forty, 2-4 person capacity chalets shall be permitted in the area identified within the tourism investigation envelope.

It is acknowledged that the existing site would be the most appropriate location for redevelopment due to the considerable modification of the site by human development, however this is only recommended if the coastal setback requirements can be resolved through sound scientific analysis.

The Shire of Carnarvon has received funding to investigate renewable power sources for the Blowholes. The results of the research should

be utilised in any future planning for the site and made available to the Ningaloo Sustainable Development Office and Blowholes Protection Association.

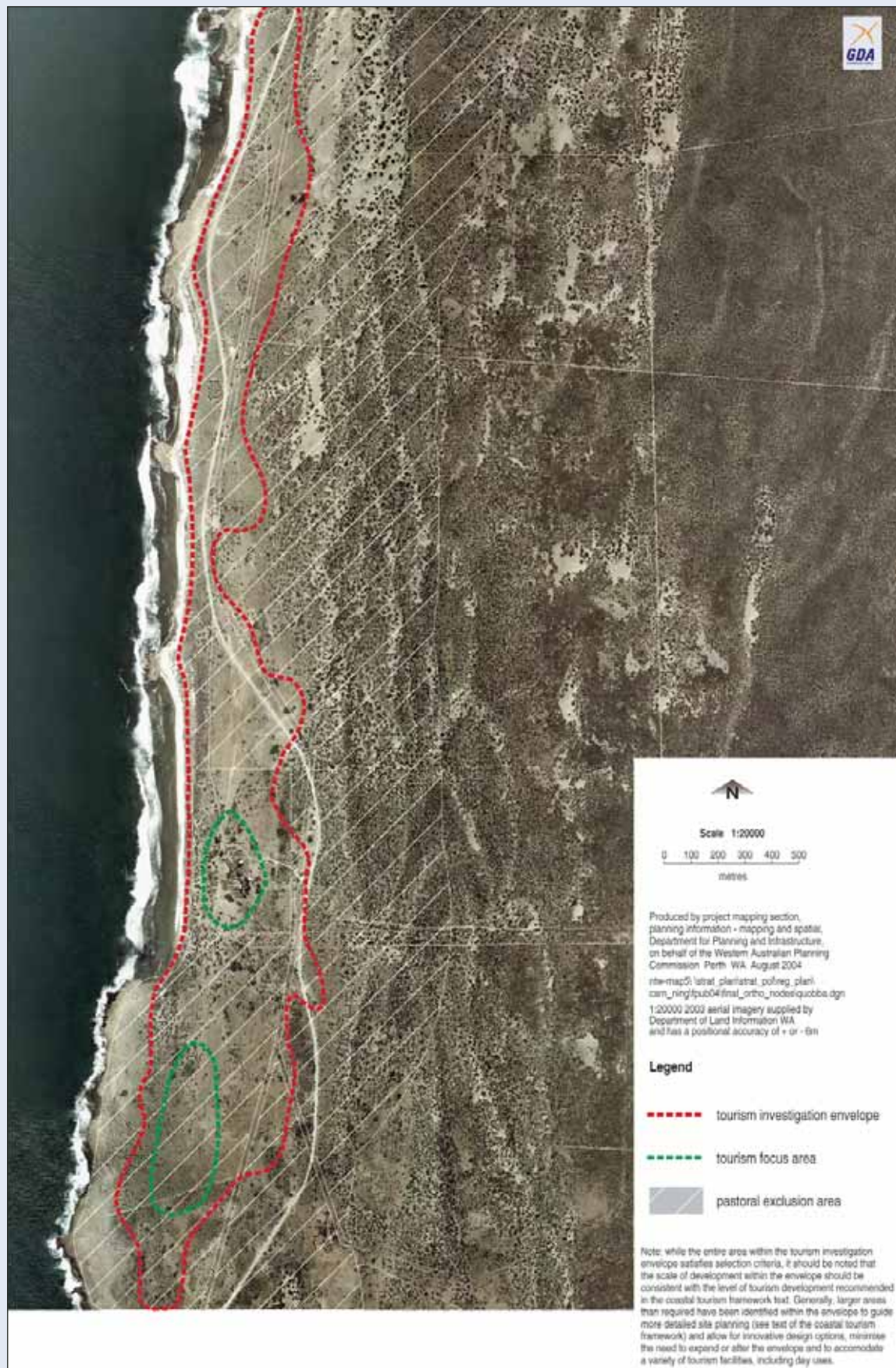
All Blowholes stakeholders should explore other funding options for management such as Envirofund and CoastWest.

A survey of existing registered shack owners is required to determine how many of the 42 registered owners want to retain an interest in the staged redevelopment of the Blowholes. This may include what financial contribution shack owners are willing to make and detail for a business plan to facilitate the redevelopment of the site. The Ningaloo Sustainable Development Office should coordinate this research in partnership with the Shire of Carnarvon.

Details of funds relating to the Blowholes, including the collection of rates, camping fees and budgets, should be confirmed. Camping and other fees collected from the users of the Blowholes should be reinvested into the environmental management and servicing of the site including identification of suitable coastal and dispersed campsites.



Figure 7: Quobba - recommended tourism node



## Quobba

### Description

The tourism investigation envelope includes an area of diverse stable landform offering settings suited to a range of tourist/visitor accommodation, services and facilities. Quobba Homestead currently offers station stay tourist accommodation. Within the homestead area pastoral infrastructure such as roads, tracks, buildings, an airstrip and tanks are visually dominant, but do not detract from the naturalness of the envelope.

### Environmental characteristics

The node is located on a cliff coast in a semi-remote setting. The area along the foreshore and dune system has high environmental sensitivity and the entire envelope is located within this area. The vegetation composition is common to grazed coastal landscapes - sparse, but with some localised interest in density, composition, height and pattern. The vegetation is described as pindan with low trees, with sparse shrub steppe further east. The adjacent marine environment is highly sensitive and is under consideration for inclusion into Ningaloo Marine Park.



The area surrounding the existing homestead is included in the proposed pastoral lease exclusion process, however the homestead itself is not. There is an Aboriginal heritage site to the north-east of the homestead. There is a petroleum tenement application pending over the entire node.

The established visitor facilities, including camping and bunkhouse-style accommodation, are located adjacent to the homestead in a wind-sheltered location. An extensive area north of the homestead, including the airstrip precinct, pocket beaches

and an inland valley with windmill east of the road, is included in the envelope. Special attractions nearby include the HMAS Sydney memorial and extensive stretches of rugged coastline north and south of the station.

The area south of the homestead offers significant opportunities for a range of accommodation types, with excellent view potential, proximity to a rugged cliff coastline and a west-facing sandy beach. Topography and vegetation may help visually separate the homestead complex from the southern part of the envelope. The existing coastal road provides convenient access to all sections of the envelope, but also could reduce the sense of remoteness required by some development.

### Assessment

**Size:** adequate.

**Environmental stability:** stable.

**Attractions and features:** numerous.

**Distinctiveness:** moderate.

**Future options/expansion potential:** moderate.

### Recommendation: Tourism node

**Quobba is suited ideally to development of visitor accommodation, services and facilities that are compatible with criteria developed for a tourism node.**



Figure 8: Gnarloo - recommended tourism node



## Gnaraloo

### Description

The tourism investigation envelope includes a land area of suitability, environmental diversity, visual distinction and tourism/recreation opportunity. Gnaraloo Homestead is located at a key central elevated point offering exceptional views along the coastline and presently offers station stay tourist accommodation. The tourism investigation envelope is separated from the coast by a significant mobile dune range, but has extraordinary appeal due to its elevated position, view potential, remoteness and character. The inter-dunal plain is an extensive area of stable, gently rolling landform sheltered from prevailing winds, currently used for utilities. Pedestrian access to the beach from a terminus car park behind the dune ridge is possible.

### Environmental characteristics

The area is in the vicinity of a dune and cusped spit coast in a semi-remote setting. There is high environmental sensitivity in the immediate vicinity and over most of the tourism investigation envelope. The area east of Gnaraloo Road is moderately sensitive. Vegetation patterns range from low grasses to sparse areas of remnant native species and pockets of significant coastal vegetation. Vegetation of pindan with low trees dominates the area. There are varied marine habitats in the waters adjacent to the node with shoreline reef along most of the coast, intertidal coral reefs, subtidal coral reefs and low-relief subtidal reef. This section currently is not part of the marine park, however it is under consideration for inclusion.



The homestead is surrounded by land affected by the proposed pastoral lease exclusion process. It also is located in close proximity to a significant Aboriginal heritage site.

The homestead, shearing shed, bunkhouse and a number of partially built cabins are located in prominent locations on a wind-exposed landform that drops steeply to an enclosed valley to the west and gently sloping terrain to the north. Paddocks, fences, tracks and the impact of grazing are visually dominant evidence of ongoing pastoral activities within the tourism investigation envelope. Established visitor facilities are limited to three cabins and bunkhouse accommodation in association with the homestead complex. Areas particularly suited to visitor services and facilities are located along the rim of the cliff area.

### Assessment

**Size:** expansive.

**Environmental stability:** stable.

**Attractions and features:** numerous.

**Distinctiveness:** exceptional.

**Future options/expansion potential:** exceptional.

### Recommendation: Tourism node

**Gnaraloo and environs is suitable for a tourism node due to the scale and configuration of land available, majestic views, and established access and infrastructure. Other benefits include proximity to an airstrip, Gnaraloo Bay, remote coastline (potentially roadless) to the north, Three Mile Camp and extraordinary surf breaks, pocket beaches and rocky coastal features.**



Figure 9: Ningaloo Beach - recommended tourism node



## Ningaloo Beach

### Description

The tourism investigation envelope includes a large area of land immediately to the north of Ningaloo Homestead with excellent potential for development of visitor/tourist facilities and services. The envelope is well suited as a tourism node due to topographical diversity, soil suitability, protection from prevailing south-westerly winds, view potential and sense of enclosure. No tourism activity currently occurs at Ningaloo Beach and no accommodation or visitor services currently are available at Ningaloo Homestead, although there is power and water infrastructure which may potentially be used to service the node.

### Environmental characteristics

The envelope is located on a dune and cusped spit coast in a semi-remote setting. The entire envelope is within an area highly sensitive to environmental changes. The vegetation composition across the envelope generally is uniform in appearance with species/textures common to grazed coastal landscapes. Some areas of diversity and visual interest occur, particularly in margins around paddocks and in the dunes. The Beard's vegetation association of the surrounds is pindan with low trees. The waters adjacent to the node are highly sensitive and within the Ningaloo Marine Park. The various marine habitats include sand, subtidal reef (low-relief – lagoon), macroalgae (limestone reef), coral reef (subtidal) and coral reef (intertidal). The node may offer views of dugongs and whale migration.

The node is affected by the proposed pastoral lease exclusion process. There is an Aboriginal heritage site to the north east of the node.



Areas most suited to the development of infrastructure and covered accommodation are located north of Ningaloo Homestead, as well as in an open valley to the east, below the lighthouse. The low but stabilised dune range may be suited to low-impact camping and covered accommodation but would require very careful assessment of site conditions and suitability prior to development.

Topography across the tourism investigation envelope is diverse due to extraordinary dune formations of varying age, suitability, height and cover. Nearby features and attractions include a lighthouse of heritage interest, Point Cloates, Jane Bay, Marine Sanctuary Zones, beaches and remote coastlines to the north and south. A type 3 gravel, all-weather road provides access to the homestead for all vehicle types. Beach access is limited to a minor track near the homestead and the major access point at the shearing shed.

### Assessment

**Size:** expansive.

**Environmental stability:** acceptable.

**Attractions and features:** numerous.

**Distinctiveness:** exceptional.

**Future options/expansion potential:** exceptional.

### Recommendation: Tourism node

**Ningaloo Beach is excellently suited to development of visitor/tourist accommodation, services and facilities. An established high-standard road offers access to a section of coastline with diverse attractions. A large, attractive area of land in the vicinity of the beach is suited to development.**



Figure 10: Yardie Caravan Park - recommended tourism node



## Yardie Caravan Park

### Description

Yardie Caravan Park is already substantially developed and currently caters for tourist accommodation numbers of the order recommended in a tourism node. The caravan park is located on the site of the original Yardie Homestead. The tourism investigation envelope around the caravan park is large and includes coastal plain and low foothill landforms. Rising topography to the east of the homestead offers some visual relief and excellent view potential for creatively located and designed accommodation. An area of exceptional vegetation density and diversity exists adjacent to a disturbed site south of the homestead that could potentially suit expansion of camping or covered accommodation.

### Environmental characteristics

The node is in a semi-remote setting. Most of the envelope, which encompasses the existing development, is located in an area of moderate environmental sensitivity. The dunes, foreshore and the watercourses that run down the range have high environmental sensitivity. Natural vegetation cover is generally uniform consisting of low coastal species with pockets of vegetation of distinctive height, composition, pattern or visual interest. Introduced vegetation around the homestead is well established and may be seen as an oasis from the coastal road.

The marine environment also is highly sensitive and is within the Ningaloo Marine Park. Various marine habitats include shoreline reefs, subtidal reef (low-relief – lagoon), sand and coral reefs (subtidal). Dugongs, manta rays, and whale sharks may be found in the waters adjacent to the node. There also are turtle rookeries along the beach north-west of the node, north of Jurabi Point.



The caravan park is reserved as public purposes under the *Shire of Exmouth Town Planning Scheme 3*, with the surrounding area reserved as parks and recreation. The area is in close proximity to a known Aboriginal heritage site and is affected by a petroleum tenement.

Access to the existing caravan park is by way of an almost straight road. A poorly maintained airstrip is nearby. Established facilities include a full range of camping and cabin accommodation and amenities and the main attractions are proximity to the national park, Tantabiddi boat launch and Exmouth. The facilities are particularly popular with fishers. No special features or natural

attractions are known to exist at the caravan park, but walking into the range may be of interest. View potential currently is unrealised.

### Assessment

**Size:** expansive.

**Environmental stability:** stable.

**Attractions and**

**features:** few (locally) numerous (nearby).

**Distinctiveness:** low.

**Future options/expansion potential:** exceptional.

### Recommendation: Tourism node

Yardie Caravan Park is ideally located to provide a full spectrum of visitor/tourist facilities and services at a tourism node level of development. Expansion capability is excellent in both the coastal plain and foothill settings adjacent to established facilities.



Figure 11: Vlamingh head - recommended tourism node



## Vlamingh Head

### Description

Vlamingh Head is already substantially developed and currently caters for tourist accommodation numbers of the order recommended in a tourism node. The tourism investigation envelope includes Lighthouse Caravan Park. Lighthouse Caravan Park is a major visitor/tourist focal point on the North West Cape providing a large number and range of accommodation types, food service, fuel, and information. The setting is dominated by a distinctive landform and historically significant lighthouse on Vlamingh Head. The lighthouse keeper's residence is an architectural feature of the caravan park.

Lighthouse Caravan Park is located ideally in close proximity to the services in Exmouth and many natural features of the cape, the national park, marine park and adjacent coastal attractions and beach access points. The Jurabi Turtle Centre is within walking distance.

Views to the coast are restricted from most of the accommodation sites. Cabins built on a prominent knoll, have excellent views, but also are highly visible from numerous viewpoints. Defined pedestrian access is provided from the caravan park to the beach at a marked road crossing point, but traffic/pedestrian conflict is an issue of concern.

## Environmental characteristics

The node is in semi-remote setting. There is high environmental sensitivity along the beach and moderate sensitivity around the existing development and the tourism investigation envelope. The vegetation is described as grass steppe to the west and saltbush or bluebush with woodland or scattered trees to the east. The marine environment is highly sensitive and is included within Ningaloo Marine Park. The marine habitats include shoreline reefs, subtidal and intertidal coral reefs and low-relief coral reefs. Dugongs and manta rays may be found in these waters.

The existing caravan park is under a freehold tenure and zoned tourist accommodation under the *Shire of Exmouth Town planning scheme 3 (Shire of Exmouth TPS 3)*, with a parks and recreation reserve surrounding it. There is an Aboriginal heritage site in the vicinity. A petroleum tenement affects the area.

The freehold land is intensely developed. Some naturally established vegetation has been retained around the fringes of the development, but introduced species are predominant. Limited expansion capability exists within the immediate caravan park freehold land.

## Assessment

**Size:** limited (freehold).

**Environmental stability:** acceptable.

**Attractions and features:** numerous.

**Distinctiveness:** exceptional.

**Future options/expansion potential:** exceptional (including unallocated Crown land).

## Recommendation:

### Tourism node

**The Vlamingh Head tourism node provides a comprehensive range of facilities and services and is ideally sited to retain its major focus for tourism. Expansion potential within the established development area is limited by landform and tenure boundaries, but areas suited to recreation and tourism facilities and services are located to the north and east of the Lighthouse Caravan Park.**

### Additional comment

The Vlamingh Head node was recommended as being suitable for tourist development to cater for up to 500 overnight visitors in the draft *Carnarvon-Ningaloo coast: Regional strategy*. Submissions on the draft strategy have suggested that this node has already developed beyond this capacity. It has also been noted that negotiations for a land swap between land south of the existing Lighthouse Caravan Park and unallocated crown land to the east of the caravan park has been in progress for some time. This has raised concerns relating to the overnight accommodation limit for this node. Submissions sought an increase in the amount of people that could be accommodated in this node ranging from 1000 to 1400 overnight visitors.

In the absence of sufficient information to determine the overall impact of an extensive increase in the size of this node, with particular reference to environmental sensitivity including significant turtle nesting in the locality, the impact upon the primacy of Exmouth as the centre for major tourism development and its proximity to Cape Range National and Ningaloo Marine Parks, the recommendation for this area be retained as a tourism node is supported.

Further review of potential development of this node in consultation with affected stakeholders is required by the Ningaloo Sustainable Development Committee as part of the implementation of the Coastal tourism framework.

Figure 12: Red Bluff Camp - recommended minor tourism node





## Recommended Minor tourism nodes

### Red Bluff Camp

#### Description

Red Bluff Camp currently offers overnight accommodation nearing the 200 limit for a minor tourism node. The tourism investigation envelope is a long, narrow portion of the coastal plain between the toe of the coastal range and the beach strand. It includes the access track, cabins and camping facilities that currently are managed by Quobba Station staff within a special lease area. The landform configuration ranges from nearly flat to moderately steep topography sloping to the sea. The beach strand appears pristine and appealing while the range and bluff backdrop is bold, rugged and imposing.



#### Environmental characteristics

The node is located on a cliff coast in a remote setting. The entire area, including the tourism investigation envelope, has high environmental sensitivity. Vegetation is low in character comprising predominantly coastal grasses and heath. There is some visual diversity in swales, behind the foredune and on the steeply rising cliff faces. Its marine environment also is highly sensitive and is part of the proposed extension to the marine park. The node may offer views of whale migration, shoreline reefs and low-relief subtidal reefs.

The node is surrounded by land affected by the pastoral lease exclusion process. The existing Red Bluff Camp is zoned as special use in the *Shire of Carnarvon TPS 11*. There is a petroleum tenement application over the area.

Established visitor activities/facilities, including cabins and camping sites, cater primarily for surfers, windsurfers, fishers and divers. Site capacity is limited by topography, fragile marine features and ability of the main beach access point to cope. The access track and parking nodes are well defined. The adjacent range landscape is distinctive and utilised for climbing, walking and exploring. A number of tracks are evident.

Expansion capability is limited within the special lease area due to restricted suitable landform. Some congestion currently occurs at key activity focal points. Expansion of facilities, including low-key camping and perhaps a small node of cabins or an

ecocamp, is suitable adjacent to the access track to the north of the special lease area and in a small dune swale where the track turns to the east. Very careful site assessment would be required prior to any development.

#### Assessment

**Size:** limited.

**Environmental stability:** acceptable.

**Attractions and features:** numerous.

**Distinctiveness:** exceptional.

**Future options/expansion potential:** limited.

#### Recommendation: Minor tourism node

Development potential in the Red Bluff area is limited by suitable landform, established user patterns and location of established facilities. Some expansion may be possible in the northern sector. A node masterplan is required to consider existing facilities and use patterns as well as potential for additional capacity.



Figure 13: Three Mile Camp - recommended minor tourism node



## Three Mile Camp

### Description

Three Mile Camp currently offers overnight accommodation nearing the 200 limit for a minor tourism node. The tourism investigation envelope includes areas east and south of the current campground, but is restricted in size due to proximity to the coast to the west, dune ridges to the north and east and by broken topography to the south. The established campsites are well located on gently rolling topography and stable soils with typical coastal vegetation cover, proximity to coastal features and excellent view opportunities. Established structures are low in profile and borrow colour and texture from landscape characteristics.

Development potential within the envelope is compatible with expansion of camping and potential development of a range of undercover accommodation types, including cabins or an ecocamp, that are appropriate to a minor tourism node. A small ridge running north-south through the envelope (including the manager's residence) offers excellent cabin potential due to view opportunities and suitable topography/soils. Exposure to wind may be a limiting factor, but effective choice of structural design/siting would help lessen the concern.

### Environmental characteristics

Three Mile Camp is located between a dune and cusped spit coast to the north and a cliff coast to the south, and in a semi-remote setting. The environment is described as highly sensitive along the coast (foreshore and dunes) and within the immediate vicinity of the node, then moderately sensitive inland. There is vegetation of pindan with low trees and sparse shrub steppe. The marine environment is highly sensitive and is part of the proposed extension to the marine park. The marine habitats include shoreline reefs, intertidal and subtidal coral reefs, and subtidal reefs.

Three Mile Camp is surrounded by land affected by the pastoral lease exclusion process. The existing camp is zoned special use under the *Shire of Carnarvon TPS 11*.

The cliffs, rugged coastline and beach to the north are notable landscape features of interest to visitors. As with all coastal areas in the study area, dune landforms and all vegetation are fragile and sensitive to human activities. Natural shade is rare with no known areas of special biological or cultural significance.

An open paddock with broken topography to the south and east of the manager's residence is suited to development of visitor facilities, but lacks ocean views. Topography, soils and setting are suitable and could provide a site for additional camping and/or development of cabins or an ecocamp.

### Assessment

**Size:** adequate.

**Environmental stability:** stable.

**Attractions and features:** numerous.

**Distinctiveness:** moderate.

**Future options/expansion potential:** moderate.

### Recommendation: Minor tourism node

**Three Mile Camp is suited to camping and possible development of additional visitor accommodation, services and facilities that are compatible with criteria developed for minor tourism nodes.**

### Additional comment

People staying at Three Mile Camp generally use the main surf breaks immediately to the south. These include Tombstone, Centipede, Dolphins and Turtles. These day use sites require a node masterplan(s) to ensure continued use without site degradation.



Figure 14: Bruboodjoo - recommended minor tourism node



## Bruboodjoo

### Description

Bruboodjoo presently has no infrastructure and is utilised for coastal camping so has not yet reached the minor tourism potential recommended. The tourism investigation envelope includes an area of stable, gently undulating terrain to the east of a low, periodically inundated portion of the coastal plain. The envelope is defined by a barrier dune range along the southern boundary and a low dune ridge along the eastern and northern flanks.

### Environmental characteristics

The Bruboodjoo node is located on a dune and cusped spit coast in a semi-remote setting. Its terrestrial environment is highly sensitive along the foreshore and dunes and in the immediate vicinity of the node. The vegetation association of the area is described as saltbush or bluebush with woodland or scattered trees. The marine environment also is highly sensitive and is part of the existing marine park. Extensive shoreline reefs can be found along the point with subtidal reefs further out to sea. Dugong habitats are located nearby and the node may offer views of whale migration.

This node is affected by the pastoral lease exclusion process. An Aboriginal heritage site has been identified in close proximity to the node and the area is affected by a petroleum tenement.

Visitor activities have resulted in significant disturbance to the landscape. Multiple roads have crisscrossed the fragile low areas and breached the foredune in many locations. Undefined camping sites have encroached seriously on to the dunes and fragile vegetation.

### Assessment

**Size:** adequate.

**Environmental stability:** acceptable.

**Attractions and features:** numerous.

**Distinctiveness:** exceptional.

**Future options/expansion potential:** limited.

### Recommendation: Minor tourism node

Bruboodjoo is suited to a range of visitor facilities and services including camping, limited covered accommodation and servicing appropriate to a minor tourism node. The low area outside the tourism investigation envelope has potential for nature study, walking and appropriate day use activities, but is not suited to camping, roads or any visitor infrastructure. A node masterplan, guiding site development and rehabilitation, is currently being prepared.



### Additional comment

In addition to the future minor tourism use of Bruboodjoo the long-term consideration of Cardabia Homestead as a homestead tourism node may be appropriate as visitation to the Ningaloo coast increases and Coral Bay is developed to its capacity.



Figure 15: Warroora Minor Tourism Node - recommended minor tourism node



## Warroora Minor Tourism Node

### Description

The tourism investigation envelope is located immediately to the west of the Warroora homestead node and east of a secondary dune ridge which contains three temporary station dwellings. It is inland from the Horse Paddock coastal camping node and is located completely within the pastoral exclusions area.

### Environmental characteristics

The node is located on a dune and cusped spit coast in a semi-remote setting. The environment is moderately sensitive. There is a variety of vegetation communities in close proximity to the node, including *Samphire halosarcia* saline varieties, open and sparse scrub and saltbush/bluebush. The closest marine environment is highly sensitive and part of the Ningaloo Marine Park.



The node is just to the west of the Warroora homestead node. The location offers close proximity to a range of spectacular coastal sites and features, ease of access (both vehicular and air) and proximity to Coral Bay.

The dune swale precinct is generally flat to rolling with a uniform cover of coastal grasses and heath. Views are generally enclosed by landform. There are currently no public facilities in this area although the nearby homestead node includes significant servicing infrastructure.

### Assessment

**Size:** adequate.

**Environmental stability:** stable.

**Attractions and features:** few (numerous nearby).

**Distinctiveness:** moderate.

**Future options/expansion potential:** exceptional.

### Recommendation: Minor tourism node

The tourism investigation envelope is potentially suited to facilities and services appropriate to a minor tourism node. Development potential adjacent to the homestead node is excellent, but could be influenced by distance from key coastal sites and lack of immediate amenity/scenic attractions.



**Figure 16: Gnaraloo Bay - recommended ecolodge node**



## Recommended Ecolodges

### Gnaraloo Bay

#### Description

The tourism investigation envelope includes a large area of gently undulating landform behind the foredune ridge north and west of the Gnaraloo airstrip. A smaller area to the north, closer to Gnaraloo Bay has been identified as suited to a possible ecolodge development. Vegetation cover in the larger unit is uniform with little evidence of distinctive patterns or composition while more diversity and visual interest is present in the smaller unit. Gnarloo Homestead is located approximately 10 km south of Gnaraloo Bay, but at present there are no ecolodge developments or camping at Gnaraloo Bay.



#### Environmental characteristics

Gnaraloo Bay is located on a dune and cusped spit coast in a semi-remote setting. The terrestrial and marine environments are highly sensitive. The local vegetation association is pindan with low trees. The waters adjacent to the node are part of the proposed extension to the marine park and have a variety of marine habitats, including sand, intertidal and subtidal coral reefs, lagoon and seaward subtidal reefs and shoreline reefs. Turtle rookeries have been identified east of the sandy point and the node may offer views of whale migration.

The node is affected by the pastoral lease exclusion process. There is an Aboriginal heritage site in close proximity to the node.

Numerous roads and tracks in the tourism investigation envelope are evidence of pastoral land uses but do not detract

significantly from development potential. The publicly accessible road to/from points south to Carnarvon terminates at Gnaraloo Bay. The track north is gated and locked.

View potential from the larger portion of the envelope is limited to foreground and inland middle-ground views, but does not include visual links to the ocean features. Expansive views to Gnaraloo Bay are offered from portions of the smaller northern node.

The dunes and beach strand adjacent to the envelope are fragile and unsuited to any major development. Day use activities such as boat launching, vista platforms, walking tracks and nature exploration could complement tourism facilities at Gnaraloo (homestead), located approximately 10 km south of the Gnaraloo Bay.

#### Assessment

**Size:** expansive.

**Environmental stability:** acceptable.

**Attractions and features:** numerous.

**Distinctiveness:** exceptional.

**Future options/expansion potential:** exceptional.

#### Recommendation: Ecolodge node

**Gnaraloo Bay is a magnificent but fragile natural asset notable for its sense of remoteness and pristine beauty. The tourism investigation envelope is suited to development of an ecolodge. Any development would require careful assessment due to potentially significant implications on important values, such as turtle rookeries, aesthetics, dune stability, conflicts with other visitors, sense of remoteness, and fisheries. Development at Gnaraloo Bay should complement facilities and services provided at the homestead.**



Figure 17: Elles Camp - recommended ecolodge node



## Elles Camp

### Description

The tourism investigation envelope is located on a narrow coastal plain situated between the beach strand and the toe of a broken dune range, where vegetation has been stabilised. The land cover is predominantly low grasses and coastal heath with occasional clumps of shrub species. There is little visual diversity in vegetation composition, but the complex shoreline topography and ocean interface are extraordinarily diverse and visually distinctive. Elles Camp currently caters for overnight accommodation in the form of coastal camping.

### Environmental characteristics

Elles Camp site is located on a dune and cusped spit coast in a semi-remote setting. The area along the beach and foredunes is considered highly sensitive, with the land behind considered moderately sensitive. Vegetation of saltbush or bluebush with woodland or scattered trees can be found in the surrounding area. The marine environment is highly sensitive and is within the Ningaloo Marine Park. Marine habitats of subtidal and intertidal coral reefs can be found in waters adjacent to the node. The node may offer views of whale migration.

The area currently is used for pastoral activities and is affected by the pastoral lease exclusion process.



A coastal track extends the length of the tourism investigation envelope with a terminus loop to the south at a mobile dune and shack known as Nev's Camp. Some camping, beach access and day use activities such as snorkelling and diving currently occur at defined locations. The sense of remoteness, spectacular views and access to ocean beaches and proximity of the Ningaloo Reef make this area exceptional.

### Assessment

**Size:** limited.

**Environmental stability:** acceptable.

**Attractions and features:** numerous.

**Distinctiveness:** exceptional.

**Future options/expansion potential:** limited.

### Recommendation: Ecolodge node

The area within the tourism investigation envelope is suited to development of an ecolodge. The land area available is narrow, but several locations are suited to special accommodation nodes. The entire envelope is exposed to wind and severe coastal conditions, but the views and sense of uniqueness, remoteness and naturalness are exceptional.

Figure 18: Winderabandi - recommended ecolodge node





## Winderabandi

### Description

The tourism investigation envelope includes coastal plain and foothill terrace landforms of diversity and topographical variation. While the coastal plain landform is typically undulating with some visual diversity, the foothill plateau is deeply dissected with steep slopes to the west. Vegetation and landform patterns are characteristic of the plain and foothill vegetation associations with some pockets of distinction. Winderabandi currently caters for overnight accommodation in the form of coastal camping.

### Environmental characteristics

Winderabandi is located on a dune and cusped spit coast in a semi-remote setting. The foreshore, dunes and point are highly sensitive environments, as is the range, and the foot of the range is considered a moderately sensitive environment. Local vegetation is described as sparse shrub steppe. The waters adjacent to the node contain habitats of sand, shoreline reefs, subtidal reefs, and subtidal and intertidal coral reefs, and are within the Ningaloo Marine Park. Bird roosts can be found on the tip of the point and the node may offer views of whale migration.

The area currently is used for pastoral activities and is affected by the pastoral lease exclusion process. There is a mining lease over the area.

Past and current visitor usage focuses primarily on the beach strand and adjacent plain. Poorly defined tracks, campsites and toileting areas have significantly disturbed the fragile dune landforms, swales and vegetation composition along Lefroy Bay and Winderabandi Point.

Views from the foothill terraces are exceptional. Conversely, possible visual impacts resulting from any proposed development as seen from coastal sites would require careful assessment. There currently are few if any evident human-imposed landscape alterations in the range within of the tourism investigation envelope. Screening potential of either landform or vegetation cover is minimal. The established coastal road runs through the

envelope immediately adjacent to the shoreline.

The northern boundary of the envelope follows the boundary of Australian Government land. A narrow track runs from Lefroy Bay to the toe of the range along this boundary.

While the entire envelope potentially is suitable for an ecolodge complex, two tourism focus areas have been identified. These are the lowest terrace above the coastal plain and the coastal plain adjacent to Lefroy Bay behind the foredune.

An ecolodge development in either location would require careful integration of all tourist facilities – lodge, camping and day use and likely would require realignment of the coastal road. Winderabandi Point and Lefroy Bay have great tourist/visitor appeal and development potential but would become seriously degraded if left ill-defined and unmanaged.

### Assessment

**Size:** expansive.

**Environmental stability:** acceptable.

**Attractions and features:** numerous.

**Distinctiveness:** exceptional.

**Future options/expansion potential:** exceptional.

### Recommendation: Ecolodge node

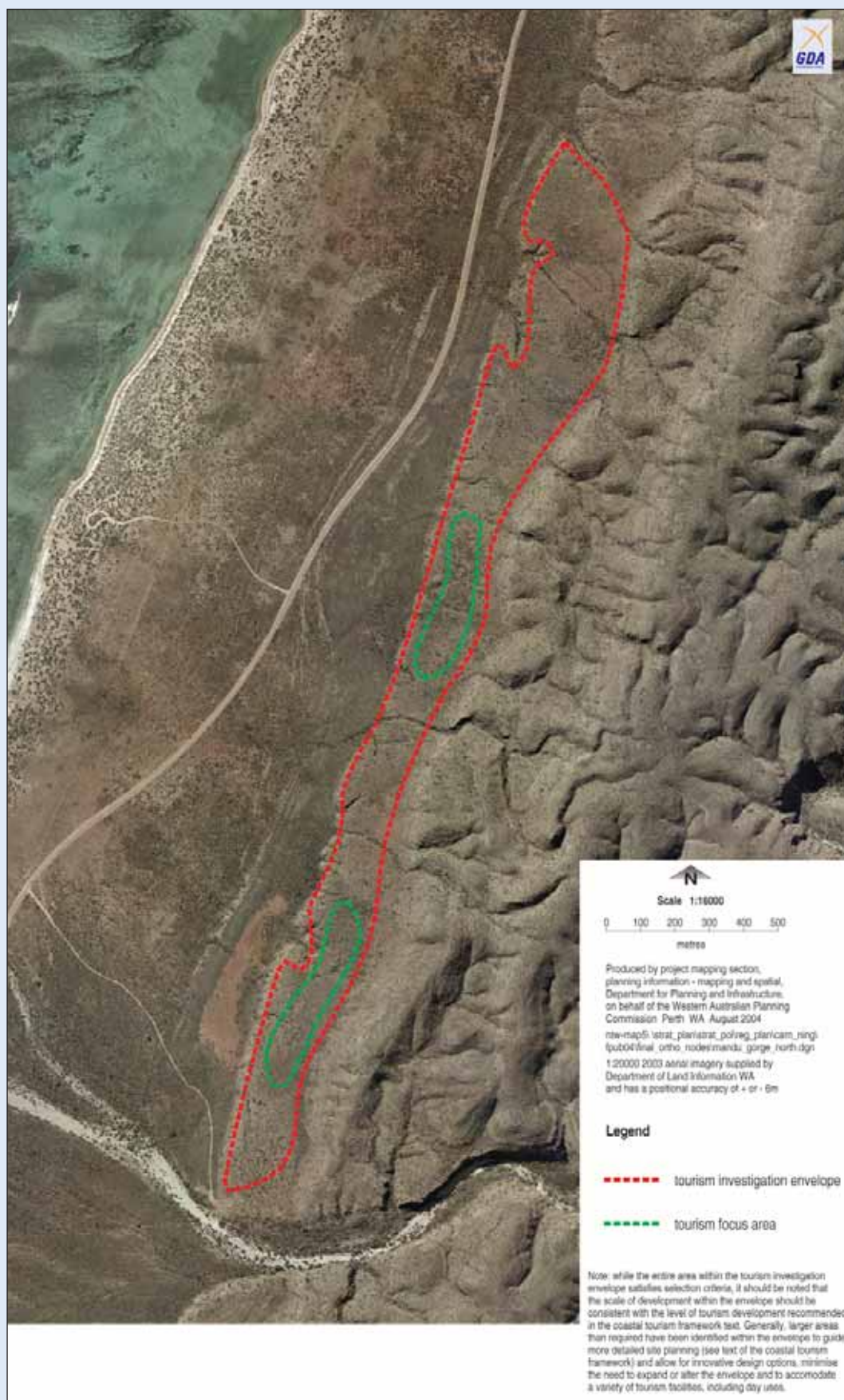
**Potential is excellent for an ecolodge/camping development at the base of the range or on the coastal plain in the Winderabandi area.**

### Additional comment

Camping and day use activities on Winderabandi Point and adjacent to Lefroy Bay have resulted in significant (perhaps accelerating) loss of native vegetation and erosion of fragile dune systems. Camping in the dune area is unlikely to be sustainable, but could be considered on the coastal plain in association with an ecolodge development or as a separate option.



Figure 19: Cape Range National Park Ecological



## Cape Range National Park Ecolodge

Note: A site at Mandu Mandu Gorge north has been identified within this framework. However, the final location of any ecolodge site within the national park, be it at Mandu Mandu or any other suitable site which meets the criteria, will be determined in the Cape Range National Park management planning process.

### Description

The currently defined tourism investigation envelope is a very large portion of the landform terrace between the coastal plain and the steep rise on to Cape Range east of Oyster Stacks. The landform is rolling, rocky in some locations, and offers extraordinary views to the coastal dunes, Oyster Stacks, Turquoise Bay and Ningaloo Reef. Mandu Mandu Gorge is located on the southern margin. Vegetation patterns are diverse and offer some screening capability. At present there is no vehicular access to the area and no camping is permitted.

There are numerous dissections, which break the continuity of the envelope landform and define plains of diverse development potential. High walls and distinctive gullies are characteristic of the range immediately adjacent to the envelope.



### Recommendation: Ecolodge node

The tourism investigation envelope is a very large area within which development of an ecolodge may be suitable.

Confirmation of specific site suitability within the envelope requires further site analysis and assessment of biophysical, social, visual, aesthetic and managerial factors. This is currently being undertaken for Cape Range National Park as part of the separate management planning process.

### Additional comment

A site should be provided within the northern portion of Cape Range is required to provide the necessary components to the coastal framework. The exact site for this ecolodge will be subject to specific site suitability. Within the Cape Range National Park the determination of the final envelope (either at this site or another site which meets the necessary criteria) will require further site analysis and assessment of biophysical, social, visual, aesthetic and managerial factors. This will be undertaken for as part of the management planning process.

### Assessment

**Size:** expansive.

**Environmental stability:** stable.

**Attractions and features:** numerous.

**Distinctiveness:** exceptional.

**Future options/expansion potential:** exceptional.



Figure 20: Warroora Homestead - recommended homestead tourism node



## Recommended Homestead tourism nodes

### Warroora Homestead

#### Description

The tourism investigation envelope is focused on the original homestead and existing visitor/tourist infrastructure.

#### Environmental characteristics

The original Warroora Homestead is inland of a dune and cusped spit coast in a semi-remote setting. The environment is moderately sensitive in the immediate vicinity of the original homestead. There are a variety of vegetation communities surrounding the node. Samphire saline varieties can be found in the immediate vicinity and to the north east of the homestead, with open and sparse scrub to the south-east and saltbush/bluebush with woodland or scattered trees along the coastline.

The original homestead precinct is characterised by gently undulating to sloping topography with some remnant shrub-tree vegetation, particularly in moisture-gaining locations. There are no exceptional natural features, but views to the inland landscape are expansive. Major attributes include the



structures and activities at the hub of a functioning pastoral station, proximity to a range of spectacular coastal sites and features, ease of access (vehicular and air) and proximity to Coral Bay. An Aboriginal heritage site is located immediately south-east of the original homestead buildings.

Warroora Homestead currently offers station stay tourist accommodation. The existing visitor facilities and services include camping and bunkhouse-style accommodation near the original homestead. Additional accommodation in the original homestead buildings may also occur.

#### Assessment

**Size:** adequate.

**Environmental stability:** stable.

**Attractions and features:** few around homestead, numerous nearby.

**Distinctiveness:** moderate.

**Future options/expansion potential:** moderate.

#### Recommendation: Homestead tourism node

The tourism investigation envelope is potentially suited to facilities and services appropriate for homestead tourism. Development potential within the homestead precinct is good, but could be influenced by distance from key coastal sites and lack of immediate amenity/scenic attractions.





## Giralia Homestead

### Description

The tourism investigation envelope is located within Giralia station and includes the homestead precinct and surrounding paddocks. Land is flat to undulating with little diversity or unique visual interest in landform or vegetation pattern. The envelope includes the homestead complex, holding pens and airstrip. There are few natural constraints to the extent of land area potentially available and suited to development of tourism facilities and services. Giralia Homestead currently offers station stay tourist accommodation.

### Environmental characteristics

The Giralia Homestead site is an inland node; therefore no coastal geomorphology has been defined. Given its association to pastoral activities, the node is in a semi-remote setting. Most of the site is considered moderately environmentally sensitive, with an area of high environmental sensitivity along the wetland near the settlement. The local vegetation is described as open and sparse scrub.

The locality is recognised as pastoral land by the *Exmouth-Learmonth (North West Cape) structure plan*. It is not affected by the pastoral lease exclusion process and there are no Aboriginal heritage sites in the vicinity. A petroleum tenement affects the node. The station is owned by the state and is likely to be retained as part of the conservation estate with the reservation of the land for conservation purposes likely.

Numerous roads, tracks, structures, fences and other evidence of pastoral land uses are common within the tourism investigation envelope. These could be assessed as either positive or negative depending on development themes, target client groups and objectives of development proposals.

Views from the envelope are expansive with a landform rise to the east creating a focus of particular attraction (including a sunset viewpoint). Portions of the station are of

particular note for biological diversity and scientific interest.

A range of accommodation currently is provided in the homestead precinct, including camping, demountable units and homestead serviced units. Attractions include accommodation, food services, a pool, sense of oasis, proximity to the Gulf and remnants of a pastoral station. The key user groups currently are fishers and overnight camping tour groups.

### Assessment

**Size:** expansive.

**Environmental stability:** acceptable.

**Attractions and features:** few.

**Distinctiveness:** low.

**Future options/expansion potential:** exceptional.

### Recommendation: Homestead tourism node

The Giralia Homestead tourism investigation envelope is suitable as a homestead tourism node, however lacks a breadth of attraction or features of uniqueness. Potential target user groups include fishers, tour groups, scientists and those seeking an insight into pastoral history. A comprehensive business/marketing plan is required to determine the viability of Giralia Homestead as a tourist facility.

### Additional comment

Various sites adjacent to the gulf coastline, including Sandalwood Point, and the inlet are potentially suited to defined and managed dispersed camping and perhaps a small ecocamp or other minimum development accommodation types. Any facilities must complement and be compatible with other management objectives for the proposed reserve.

### Note

No aerial photography depicting Giralia Homestead is available, however the tourism investigation envelope is generally within the confines of the existing Giralia Homestead compound.



Figure 21: The Lagoon - recommended coastal camping node



## Recommended Coastal camping nodes

### The Lagoon

#### Description

The tourism investigation envelope includes an area of undulating stabilised sandy soil behind the foredune and immediately north of The Lagoon. Topography, exposed dunes and fragile riparian features limit the total area suited to development of campsites and day use activity nodes. The Lagoon is favoured by fishers and long-term visitors and has a loyal return clientele. Past camping and day use activities have resulted in disturbance to landform and vegetation. Definition of visitor use nodes and rehabilitation is currently being implemented by Warroora Station staff.



#### Environmental characteristics

The Lagoon is located on a dune and cusped spit coast. The area is in a remote setting. The terrestrial environment is highly sensitive along the beach, the foredunes and the water body that opens into the sea. Local vegetation is described as open and sparse scrub. The marine environment also is highly sensitive and currently is within the marine park boundary. Marine habitats of subtidal reefs, shoreline reefs and subtidal coral reefs are found here.

The area currently is used for pastoral activities, and is affected by the pastoral lease exclusion process. There is an Aboriginal heritage site to the east of the node.

The Lagoon is suited to low numbers of campers and day visitors and has little

potential for covered accommodation. Site definition and control of visitor activities and numbers are essential.

#### Assessment

**Size:** limited.

**Environmental stability:** acceptable.

**Attractions and features:** numerous.

**Distinctiveness:** exceptional.

**Future options/expansion potential:** limited.

#### Recommendation:

##### Coastal camping node

The Lagoon is suitable for limited camping and day use activities within the defined tourism investigation envelope with a focus on the lagoon, fishing, beach activities and ocean features. Access and parking, placement of camping sites, location of toilets and other services and design of day use focal areas must be managed carefully, monitored and delineated as guided by a node masterplan.

#### Additional comment

Other camping/day use facilities in the vicinity of The Lagoon include The Cove with two to three defined camps to the south and Nick's Camp with a single group site to the north. An area of potential expansion of camping sites is located on stable, but stony ground immediately east of the tourism investigation envelope. The area could provide for large numbers of visitors, but is some distance from the ocean features and potentially could place unacceptable social and environmental stress on fragile resources of the area.



Figure 22: Horse Paddock - recommended coastal camping node



## Horse Paddock

### Description

The tourism investigation envelope is located in a wide swale between the foredune range and a secondary dune ridge west of Warroora Homestead. There are three temporary homestead residences at Horse Paddock which are separate to the homestead node.

### Environmental characteristics

Horse Paddock is located on a dune and cusped spit coast in a semi-remote setting. The environment is moderately sensitive. The dune swale generally is flat to rolling with a uniform cover of coastal grasses and heath. Views generally are enclosed by landform. The adjacent marine environment is highly sensitive and part of the Ningaloo Marine Park. Habitats of shoreline reefs, intertidal and subtidal coral reefs and low-relief subtidal reefs can be found in the area.



This envelope is affected by the pastoral lease exclusion process. A few tracks crossing the area provide access to the temporary homestead residences and the shack area near the beach where some camping and general beach access occurs. There are currently no facilities in this area.

The three temporary residences built on a dune ridge overlooking the envelope are not accessible to visitors. Views are expansive from the dune ridge, but the area is not included in the tourism investigation envelope as it does not meet established suitability criteria.

### Assessment

**Size:** adequate.

**Environmental stability:** stable.

**Attractions and features:** numerous.

**Distinctiveness:** moderate.

**Future options/expansion potential:** exceptional.

### Recommendation: Coastal camping node

The tourism investigation envelope is potentially suited to facilities and services appropriate for coastal camping. It is in the foreground viewshed from the temporary homestead residences, but offers visual interest and proximity to the coastal dunes and beach.



Figure 23: Stevens Camp - recommended coastal camping node



## Stevens Camp

### Description

The tourism investigation envelope is located in a largely enclosed basin behind a high coastal foredune. The topography of the basin is flat to rolling and land cover is predominantly grassy with some pockets of shrubby coastal vegetation that create visual interest and some enclosure for campsites.

### Environmental characteristics

The terrestrial environment is highly sensitive along the beach and dunes and the local vegetation association is saltbush or bluebush with woodland or scattered trees. The waters adjacent to the node currently are within the marine park boundary and are highly sensitive. Intertidal and subtidal coral reefs are found here.

The area currently is used for pastoral activities, and is affected by the pastoral lease exclusion process. There is an Aboriginal heritage site just to the south of the node.

Current visitor use is concentrated in the sheltered basin behind the foredune and in the sandy terminus node to the west of the foredune. Key attractions are surfing, fishing and use of the protected beach. Tracks crossing the dune to access the beach are visually disruptive, subject to erosion and require stabilisation and rehabilitation. A pedestrian walking track is required.

The main camping area in the basin lacks visual links to the ocean. Favourable sites in the shrubby grove are limited. There is some expansion potential in the enclosed valley to the north and the paddock to the east, but both lack appeal.



### Assessment

**Size:** adequate.

**Environmental stability:** acceptable.

**Attractions and features:** numerous.

**Distinctiveness:** moderate (behind dune ridge) to exceptional.

**Future options/expansion potential:** limited.

### Recommendation: Coastal camping node

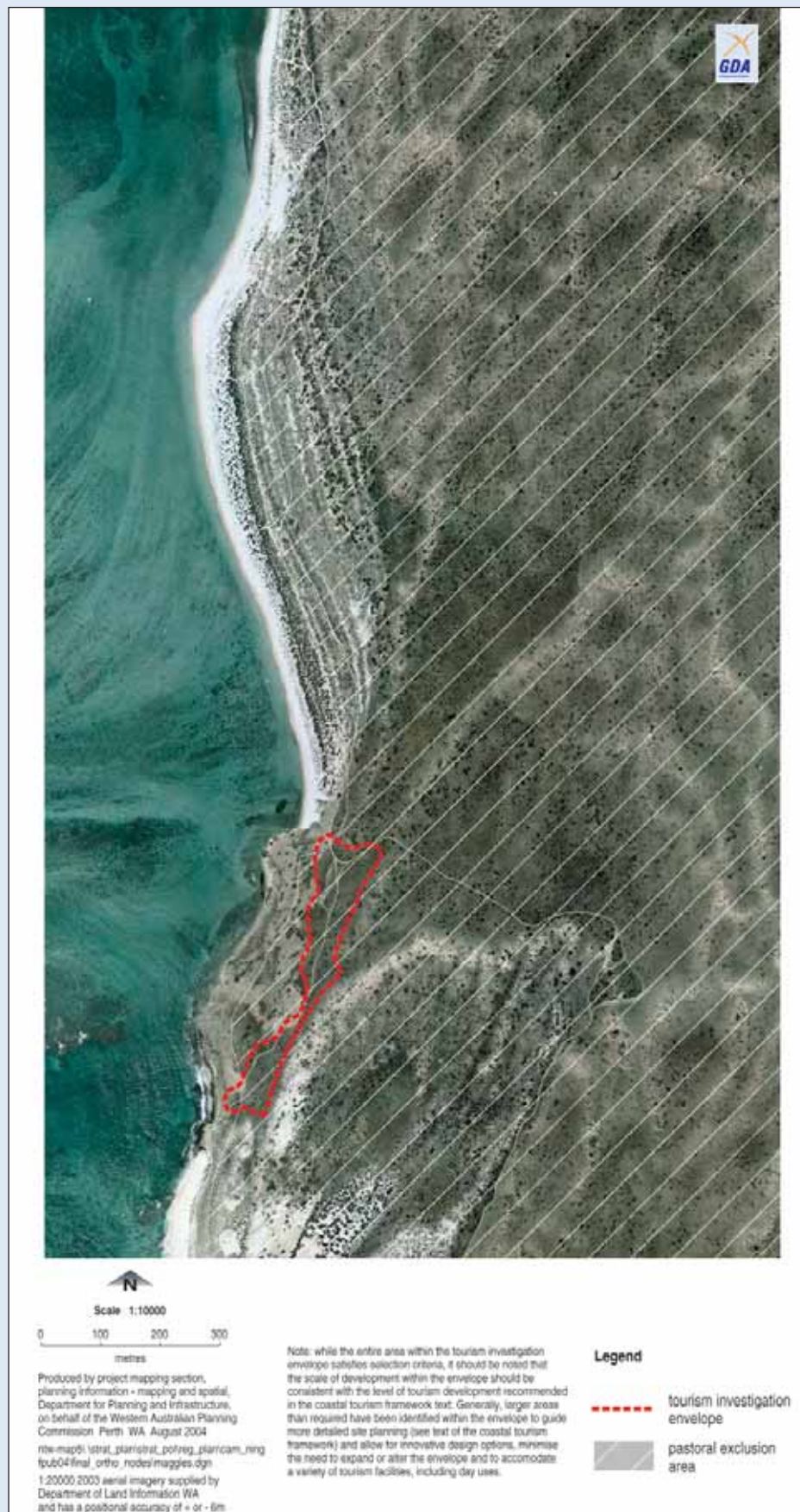
The Stevens Camp basin is suited to a limited number of campsites and as a focus for day use access to the beach. The beach area is fragile, subject to erosion and vegetation loss, and only suited to walk-in day use. Beach camping is inappropriate. The small terminus area to the south is potentially suited as a remote boat/kayak camp or a walk-in day use feature site.

### Additional comment

A high point to the south of Stevens Camp (Wedding Point) has been suggested by Warroora staff for installation of a whale lookout platform.



Figure 24: Maggies - recommended coastal camping node



## Maggies

### Description

The tourism investigation envelope is small and limited by coastal dunes and a secondary inland ridge system. The envelope is narrow but includes areas of stable land with low coastal vegetation and exceptional view potential.

### Environmental characteristics

Maggies node is located on a dune and cusped spit coast in a semi-remote setting. The beach and dunes are highly sensitive environments with the local vegetation described as saltbush or bluebush with woodland or scattered trees. The marine environment also is highly sensitive and part of the Ningaloo Marine Park. Habitats of shoreline reefs, subtidal reefs, and intertidal and subtidal coral reefs are found here. The node may also offer views of whale migration.



The area is currently used for pastoral activities, and is affected by the pastoral lease exclusion process.

Currently, the area is popular with fishers who tend to camp adjacent to the boat launch and beach access point, but numbers are minimised by sloping topography, and management staff. Other attractions include a wide beach, cliff landscape and diverse dune systems.

### Assessment

**Size:** limited.

**Environmental stability:** acceptable.

**Attractions and features:** numerous.

**Distinctiveness:** exceptional.

**Future options/expansion potential:** limited.

### Recommendation: Coastal camping node

Maggies is suited to development of limited camping and/or a small number of carefully sited covered accommodation units such as ecocamps. The dune precinct to the north is fragile and unsuited to development of any infrastructure or as a focus for any recreation uses other than low-intensity day activities.

### Additional comment

Areas of development potential outside the defined tourism investigation envelope are located in interdunal swales to the east and north-east of the envelope. These areas may be suitable for visitor accommodation and services, but are located some distance from the ocean features and are enclosed visually.

**Figure 25: Fourteen Mile Camp - recommended coastal camping node**





## Fourteen Mile Camp

### Description

The tourism investigation envelope is located on the stable coastal plain just to the south of Fourteen Mile Beach. The beach area, currently utilised for camping and boating activities, does not meet the development suitability criteria established in this document.

### Environmental characteristics

This site is located on a dune and cusped spit coast in a semi-remote setting. The beach and dunes are highly sensitive environments. The local vegetation is described as saltbush or bluebush with woodland or scattered trees. The marine environment also is highly sensitive and is part of the existing Ningaloo Marine Park. There is a significant intertidal coral reef, smaller subtidal coral reefs, and a small shoreline reef to the north. The node may offer views of whale migration.

Currently, the area is used for pastoral activities, and is affected by the pastoral lease exclusion process.

Dispersed camping activities occur along the coastline from Stevens Camp in the south to Fourteen Mile Camp to the north. Both one and two bay dispersed sites and more concentrated camping areas are used, often preferred by return visitors and long-term users of the area. The greatest concentration of camping and boating use is at Fourteen Mile Camp on the beach and immediate foredune. Much of the camping occurs within the Ningaloo Marine Park. Roads and camping sites have disturbed natural dunes and vegetation but there are no known studies to establish or assess the significance of the



changes to the local ecology. Camping sites are defined and managed by Warroora Station staff and caretakers during peak periods.

Beach camping at Fourteen Mile Camp is an activity to which many long-term visitors are culturally and emotionally attached. Any change would be contentious and unwelcomed by current users.

Camping nodes on the stable plain south of Fourteen Mile Camp are defined and managed by Warroora Station staff. Views are expansive, the adjacent coastline is rocky and beach access requires a short walk.

### Assessment

**Size:** limited.

**Environmental stability:** stable.

**Attractions and features:** numerous.

**Distinctiveness:** exceptional.

**Future options/expansion potential:** limited.

### Recommendation: Coastal camping node

**Camping and other infrastructure are suited to the stable plain to the south of Fourteen Mile Beach. Camping on the beach and foredune (in Ningaloo Marine Park) is very popular, but the site conditions do not meet development suitability criteria.**

### Additional comment

Fourteen Mile Camp is a very popular destination for many long term visitors. Changing use patterns and establishment of any restrictions will require further study and consultation with government agencies, user groups and other interested individuals and a phased approach should be considered.



Figure 26: Jane Bay Camp - recommended coastal camping node



## Jane Bay Camp

### Description

The tourism investigation envelope is a large, heavily grazed basin inland of the coastal dune range. The landform is gently rolling with sparse vegetation cover. The area has some sense of enclosure, but generally is expansive with little interest or appeal. There is no visual linkage to the ocean or reef and no vegetation of special character or interest. Camping and caravanning currently occurs in this area. Approximately 20 defined camping sites are proposed by Ningaloo Station staff.

### Environmental characteristics

The node is located on a dune and cusped spit coast in a remote setting. Its beach and dunes are highly sensitive environments. The local vegetation is described as pindan with low trees on the dune system and saltbush or bluebush with woodland or scattered trees inland. The marine environment also is highly sensitive and is part of the existing Ningaloo Marine Park. There are varied marine habitats, including small patches of shoreline reef adjacent to the beach, subtidal reefs, a small



patch of macroalgae on limestone reefs, and intertidal coral reefs. Manta ray and dugong habitats are found to the north and south of the bay and the node may offer views of whale migration.

Currently, the area is used for pastoral activities, and is affected by the pastoral lease exclusion process.

The adjacent coastline is characterised by dunes, fragile vegetation and an exposed sandy beach suited to short stay day use activities such as fishing, walking and nature observation.

### Assessment

**Size:** expansive.

**Environmental stability:** stable.

**Attractions and features:** few.

**Distinctiveness:** low.

**Future options/expansion potential:** exceptional.

### Recommendation: Coastal camping node

The ocean frontage at Jane Bay is most suited to day use visitation while camping is appropriate at Jane Bay Camp, the inland basin identified in the tourism investigation envelope. Camping in this area is likely to have limited appeal if other accommodation opportunities are made available at Ningaloo Beach.



Figure 27: Lefroy Bay - recommended coastal camping node



## Lefroy Bay

### Description

Two tourism investigation envelopes are located along Lefroy Bay between Point Billie and Winderabandi Point where the coastal plain landform joins a relatively low and narrow foredune ridge. This was required due to the size of Lefroy Bay and in recognition of the scale of camping that occurs on this node.

### Environmental characteristics

Lefroy Bay is located on a dune and cusped spit coast in a semi-remote setting. The beach, dunes and ranges are highly sensitive environments. Local vegetation is quite diverse with pindan with low trees on the sandy point, sparse shrub steppe along the foreshore and dunes and grass steppe on the range. Its marine environment also is quite diverse with shoreline reefs along the bay, subtidal reefs, macroalgae (limestone reef) and subtidal and intertidal coral reefs. The node may offer views of whale migration.

Currently, the area is used for pastoral activities, and is affected by the pastoral lease exclusion process.



The linear coastal area is currently popular with visitors who prefer dispersed and small group camping sites. Fishing and boating are favoured activities. Disturbance to natural vegetation and landform features is locally evident, but natural stability, site definition and rehabilitation works recently have reduced negative impacts.

One camping area has been fenced and gated with limited access to reserved site campers. Definition of camping sites and commencement of rehabilitation works have been implemented by Ningaloo Station staff with assistance from regular campers.

### Assessment

**Size:** adequate.

**Environmental stability:** acceptable.

**Attractions and features:** numerous.

**Distinctiveness:** exceptional.

**Future options/expansion potential:** moderate.

### Recommendation: Coastal camping node

Lefroy Bay is suited to development of dispersed and clustered camping nodes, particularly behind the coastal foredune. The coastal plain is suited to a greater intensity of development, but the foredune is remarkably stable and also is appropriate for limited numbers of dispersed camping nodes where a greater level of site hardening may be required. A node masterplan should determine the most appropriate camping sites and guide site rehabilitation where needed.



Figure 28: Doddy's Camp - recommended coastal camping node



## Doddy's Camp

### Description

The tourism investigation envelope is located in a small valley behind the coastal foredune in close proximity to a coastal beach and headland. Pockets of coastal trees and shrubs offer visual interest and some definition of camping bays. Soils are sandy with limited suitability.

The land currently is in Australian Government ownership within the Bundera Coastal Protection Area of the Learmonth Air Weapons Range.

### Environmental characteristics

Doddy's Camp is located on a dune and cusped spit coast in a semi-remote setting. The foreshore and dune system and the area from the beach to the road are highly sensitive environments. Local vegetation is described as sparse shrub steppe. There is a diverse range of marine habitats in the waters adjacent to the site. These habitats include sand, macroalgae (limestone reef), subtidal and intertidal coral reefs and shoreline reefs along most of the beach. This area is part of the Ningaloo Marine Park and may offer views of whale migration.

Currently, the area is used for camping with no facilities and limited management by Department of Defence. Favoured activities include fishing, snorkelling and beach exploration. There is very limited capacity for expansion.



Ningaloo Chase, a safari-style ecocamp, originally located on the headland within the tourism investigation envelope, has been relocated to a site near Sandy Point to the north. No tourism investigation envelope has been identified at Sandy Point due to the very fragile coastal dune landform and vegetation association.

Changing the use patterns in the Bundera Coastal Protection Area together with the establishment of any access restrictions will require further study and consultation between Department of Defence and state government agencies, existing user groups and other interested individuals.

### Assessment

**Size:** limited.

**Environmental stability:** sensitive.

**Attractions and features:** numerous.

**Distinctiveness:** moderate.

**Future options/expansion potential:** limited.

### Recommendation: Coastal camping node

**Doddy's Camp is suited as a small camping node, but will require significant hardening and increased management to ensure sustainability in the future should access continue.**

**An environmental management plan for the Bundera Coastal Protection Area is being prepared and should address access and management of Doddy's Camp. If the camp is to remain in use a node masterplan should be prepared as a priority.**

## Cape Range National Park

Most campsites within Cape Range National Park have a defined number of bays and appropriate facilities including toilets, roads, paths, control devices and signing. Current campsites include Boat Harbour, One K Camp, Yardie Creek, Osprey/Bungarra, Pilgramunna, Kurrajong, South Mandu Camping Area (Reef Retreat Ecocamp), North Mandu, Tulki Beach, Lakeside, T-Bone, Mesa and Neds. The Cape Range National Park coastal camping nodes have not been shown on the Coastal tourism framework (figure 5) as camping nodes are controlled through the management plan for the national park. The *Cape Range National Park management plan 1987-1997* is presently under review, and, if finalised prior to the release of the Ningaloo coast regional strategy Carnarvon to Exmouth the Coastal tourism framework will be updated to reflect the park's new management plan.

One ecolodge node has been recommended within Cape Range National Park.



and a small area of stable terrain. Some coastal rehabilitation has occurred. The site is a popular day use site for fishing, surfing and beach activities.

### Environmental characteristics

The node is located on a cliff coast in a semi-remote setting. The area along the foreshore and dune system has high environmental sensitivity. The vegetation is described as pindan with low trees, with sparse shrub steppe further east. The adjacent marine environment is highly sensitive and is under consideration for inclusion into Ningaloo Marine Park.

### Assessment

**Size:** no tourism investigation envelope designation.

**Environmental stability:** sensitive.

**Attractions and features:** numerous.

**Distinctiveness:** moderate.

**Future options/expansion potential:** moderate.

## Recommended Day use sites

### Seventeen Mile

#### Description

No tourism investigation envelope has been identified in the Seventeen Mile area. Seventeen Mile is located between Quobba Homestead and Red Bluff on a portion of coast characterised by dramatic dune-forms, blowouts, inter-dunal swales, pocket beaches and rocky coastal cliffs. Attributes at Seventeen Mile include a protected bay, safe beach, rocky headland, low coastal vegetation

### Recommendation: Day use site

This site is well suited to day use activities.

### Additional comment

Future options may include limited camping and possibly an ecolodge style development.



## Point Billie

### Description

No tourism investigation envelope has been identified in the Point Billie area. The beach area currently utilised for camping and boating activities from Point Billie south, does not meet the development criteria established in this document.

### Environmental characteristics

Point Billie is located on a dune and cusped spit coast in a semi-remote setting. Its beach, dunes and ranges are highly sensitive environments. There are varied vegetation associations in the area with pindan with low trees on the dune system, sparse shrub steppe and saltbush or bluebush with woodland or scattered trees inland and grass steppe on the range. The marine environment also is highly sensitive and is part of the existing Ningaloo Marine Park. The marine habitats found here include small shoreline reefs to the north-east, subtidal reefs, and intertidal coral reefs. Manta ray habitats are found to the south in Norwegian Bay. The node may offer views of whale migration.

Currently, the area is reserved for pastoral activities, and is affected by pastoral lease exclusion process. There is an Aboriginal heritage site located to the north-east, along the coast.



The beach strand and a wide coastal foredune range are used by visitors for camping and short-stay activities. The track network is expansive. Disturbance to natural vegetation and landform is severe locally and evident throughout the area. Traditionally, few constraints have been placed on visitor activities. Definition of camping sites and closure of some tracks has recently been implemented by Ningaloo Station staff and volunteers. More site definition and rehabilitation is planned.

### Assessment

**Size:** no tourism investigation envelope designation.

**Environmental stability:** sensitive.

**Attractions and features:** numerous.

**Distinctiveness:** moderate.

**Future options/expansion potential:** limited

### Recommendation: Day use site

Camping on the Point Billie coast is unsustainable without unacceptably high levels of site hardening and infrastructure. A node masterplan, based on a comprehensive assessment of social needs and environmental conditions is required urgently for the entire area to determine the most appropriate and sustainable land uses.

### Additional comment

Point Billie is a very popular destination for many long-term visitors. Changing use patterns and establishment of restrictions will require further study and consultation with government agencies, Ningaloo Station staff, user groups and other interested individuals.

## 1.3.8 Implementation of Coastal tourism framework

This section briefly outlines the way the Coastal tourism framework will be implemented. It is provided to guide future tourism use of the Ningaloo coast in recognition of environmental constraints, the need to resolve land management issues such as the separate pastoral coastal exclusions process and the desire to stage tourism so that the quality of visitor experience and variety of experiences is maintained and improved.

It should be noted that no new tourism development shall be considered outside of Carnarvon, Exmouth and Coral Bay until land vesting and management in relation to the pastoral coastal exclusion process has been agreed. The Ningaloo coast regional strategy Carnarvon to Exmouth process is not related to the pastoral exclusion process.

As part of the implementation of the strategy further consideration of the proposed staging of development along the Ningaloo coast is required. It is expected that a range of tourism opportunities will be provided at the nodes identified, ranging from camping through to ecolodge style accommodation. Both government bodies and private operators will have a role in facilitating these tourism opportunities, which will be developed as part of the implementation of the strategy.

### **Staging of tourism opportunities**

Staging of tourism opportunities along the Ningaloo coast is seen as an important part of the implementation of the strategy. Staging of opportunities will occur in two ways, by the staging of the establishment of new nodes along the coast, and staging of development within nodes.

As identified in the Overview of the Coastal tourism framework, many of the coastal nodes identified already have an existing level of use, often below the capacity identified in the framework. The staging of development would see the identified nodes progressively develop and expand over the 30 year timeframe of the strategy.

Priority shall be given to the resolution of the Blowholes. The future redevelopment of this area is recognised as an important element in the effective future planning for the southern section of the Ningaloo coast.

The staging of tourism use and development shall take into account the following criteria:

- protection of the fragile environment of the Ningaloo Reef and coastal landforms;
- the need for proactive planning and provision of sustainable tourism development on the Ningaloo coast;
- the guiding principles of the strategy;
- objectives of the Statement of planning policy;
- development of environmental monitoring and audit systems to gauge environmental impacts (input to the cumulative impacts assessment framework);
- consideration of all new proposals within a cumulative impact assessment framework containing identified levels of acceptable change thresholds;
- limits of available infrastructure;
- water availability;
- existing environmental pressure, including that caused by current tourism use;
- provision of a range of tourism accommodation to cater for a variety in visitor experience, including limited tourism in a remote setting;
- recognition of the lack of tourism accommodation on certain sections of the Ningaloo coast;



- policies of the Planning and environmental guidelines for sustainable tourism on the Ningaloo coast;
- estimates of future tourism visitation;
- recognition of established coastal tourism nodes;
- commercial viability and opportunities for a diversity of sustainable tourism developments to be realised on the Ningaloo coast; and
- opportunities for sustainable tourism development will be offered through a public competitive tendering process.

## Implementation of coastal camping recommendations

Implementation of the coastal camping recommendations will occur gradually with the implementation of this strategy. While all camping along the coast will be formalised into managed camping across a range of experiences, this will occur in partnership with pastoral leaseholders, relevant government agencies, local government and visitors camping along the coast. This will assist in the reduction of environmental degradation (vegetation clearance, ad hoc creation of four-wheel drive tracks, waste management, etc) caused by unmanaged camping.

Camping may include the delineation of single campsites to multiple camp sites, camping grounds, small groupings, small commercial operations such as ecocamp proposals in association with coastal features or activities.

Rationalisation of some existing campsites may occur in order to prevent long-term environmental damage. This may result in defined and managed campsites whilst aiming to retain the natural and remote visitor experience.



## Process for assessment of proposals on Ningaloo coast

Development of tourism investigation envelopes for recreation and tourism is subject to a systematic process of proposal, assessment, review and incremental refinement from broad to detailed planning. Each stage is of equal importance to ensure that the right facilities and services are provided for the right visitor group in a way that is environmentally sustainable. This process flows on from *Future directions* and the *draft Carnarvon-Ningaloo coast: Planning for sustainable tourism and land use* and its public consultation. Below is the process to

facilitate consideration of proposals on the Ningaloo coast:

1. Ningaloo coast regional strategy Carnarvon to Exmouth (Western Australian Planning Commission).
2. Tourism investigation envelopes. These are an indication of broad-scale areas most suited to development of visitor/tourist facilities and services as identified within this strategy. They are the result of a process of consultation, site review and on-site confirmation. This is the responsibility of the Ningaloo Sustainable Development Office and Department for Planning and Infrastructure.
3. Node masterplans. These are intermediate-scale designs that reflect a development vision for a tourism investigation envelope and include relationship diagrams and broad-scale design plans. They could be a response to expressions of interest instigated by government or public sector proposals. The level of detail provided should be sufficient to provide an in principle decision relating to a proposal and include consideration of matters to be addressed in node masterplans and site



development plans, as listed below. All opportunities for sustainable tourism use and development will be offered through an equitable public competitive tendering process. This is the responsibility of the Ningaloo Sustainable Development Office, Department for Planning and Infrastructure and where relevant the proponent.

4. If, in the event that the node masterplan assessment shows that the tourism investigation envelope does not meet environmental or other relevant requirements, an alternative, better suited site may be proposed and considered as a replacement tourism investigation envelope, not as an additional site.
5. Site development plans. These are detailed-scale plans and specifications that provide precise locations/details for all structures, access and circulation, special-use sites and suggest rehabilitation or enhancement works with detailing and documentation. The detail provided should be sufficient for a formal development application to be considered and be guided by the node masterplanning process detailed in 3, above, and include consideration of matters to be addressed in node masterplans and site development plans, as listed below. All opportunities for sustainable tourism use and development will be offered through an equitable public competitive tendering process. This is the responsibility of the proponent.

## **Tenure and land management**

The length of tenure to be allowed on leasehold land vested in the Conservation Commission of Western Australia is currently under investigation as to whether this should be longer than the currently allowed 21 plus 21 years in appropriate circumstances.

## **Matters to be addressed in node masterplans and site development plans**

The following criteria must be addressed by any proponent of a sustainable tourism use or development of a site detailed in the Coastal tourism framework, when preparing a node masterplan or site development plan, for approval.

- Declared rare or priority flora and fauna species. Important populations and breeding or feeding areas should be identified, featured and protected from disturbance.
- Sites of cultural or heritage significance, including Aboriginal heritage sites. Special sites should be featured and protected from disturbance.
- Vegetation clearance. Development should ensure minimum disturbance to naturally established vegetation, especially on dunes.
- Marine features. Marine sanctuary zones, fish habitat protection areas and other sensitive marine environment areas should be featured and protected.
- Biological, visual, cultural, historical, research/education sites or recreational points of interest. Proposals should enhance and/or protect sites of special interest.
- Water. Proposals must assess water supply.
- Visual integrity. Development should borrow from and be complementary to naturally established landscape characteristics. Visual amenity should be considered as part of this assessment.
- Scale and form of development. Proposals should ensure that natural elements remain dominant and do not become subordinate to introduced elements.
- Soil types. Development should be located on stable sites, which are suitable/capable of sustaining change.



- Setbacks, inundation and/or storm surges. Development areas should reflect setback requirements of *Statement of planning policy 2.6* in order to protect significant features, and proposed development attractions.
- Building materials and textures. Built elements should borrow from and be compatible with their landscape setting.
- Waste management. All development proposals should ensure that land and water are protected from pollution.
- Visitor experience levels. Development proposals should ensure that visitor's expectations are realised through the use of buffers or breaks between potentially conflicting uses and allow for public access within the coastal zone.
- Risks and hazards to visitors. Visitor health and safety must be considered fully.
- Wind and sun. Developments should ensure that the most efficient passive cooling and heating techniques are used.
- Construction materials. Developments should ensure availability and sustainability of supply including road-building materials.
- Pests and pestilence. Development proposals should consider mosquito and biting midge breeding sites.
- Sustainable technology developments should ensure continual improvement in sustainable tourism technology.
- Monitoring and auditing. Monitor and audit the local environment for changes, sustainable tourism and impact, and improvements/continued monitoring of existing degraded areas where identified.



The Planning and environmental guidelines for sustainable tourism on the Ningaloo coast shall be used in the assessment of these criteria.

## Recommendations

**That further detailed assessment of coastal and dispersed camping nodes be undertaken to audit and monitor existing use. Resulting recommendations that seek to protect or improve the condition of the natural environment of a coastal or dispersed camping node should be implemented as a matter of priority.**

**Encourage further research and funding programs (such as the Ningaloo Ocean and Earth Research Centre) to monitor and recommend protective measures on the Ningaloo coast, particularly cumulative impacts, to inform sustainable tourism options.**

**Consider limited, preferably staged, sustainable tourism proposals within land delineated as tourism investigation envelopes under the guidance of *statements of planning policy 2.6 and 6.3* in addition to the Planning and environmental guidelines for sustainable tourism on the Ningaloo coast through assessment of node masterplans and site development plans, subject to the requirements of, and staged as per the criteria set out in the Ningaloo coast regional strategy Carnarvon to Exmouth.**

## 1.4 Planning and environmental guidelines for sustainable tourism on the Ningaloo coast

### 1.4.1 Introduction

The Ningaloo coast is a fragile natural area, subject to cyclones and tsunamis, and is the home of rare marine and terrestrial species and landscapes and seascapes that could be damaged irretrievably by insensitive or ad hoc development. This fragile natural area, its flora and fauna, ruggedness, sense of remoteness and potential world heritage values also are the basis of a growing, economically important, nature-based tourism industry. The area is designated as a zone of opportunity in the *Nature based tourism strategy for Western Australia*. The sustainability of the tourism industry and the natural area on which it depends will involve careful planning, management and sympathetic development.

Pressure for substantial developments has intensified over recent years due to the growth in tourism. The coast already is subject to a variety of developments, including roads, formal and informal camping sites, toilets, car parks, boat-launching areas, moorings, interpretation centres, observation structures, accommodation, signs, shelters, paths and picnic areas.

The aim of these guidelines is to:

1. provide state agencies, local government, community and proponents with clear guidance regarding sustainable tourism development;
2. delineate limits of acceptable change, which will ensure that visitors continue to enjoy a remote and natural experience on the Ningaloo coast; and
3. preserve, enhance and protect the environment.

These guidelines primarily are intended to ensure **all** future semi-permanent and permanent tourism accommodation developments or expansion of existing developments on the Ningaloo coast, from the Exmouth Gulf to Carnarvon townsite, outside of the regional centres of Exmouth and Carnarvon, are **low-impact, sustainable tourism developments**. Examples include campsites, camping nodes, ecocamps and ecolodges.

These guidelines must be read in conjunction with relevant statements of planning policy such as the *State coastal planning statement of planning policy 2.6* and the Ningaloo coast statement of planning policy 6.3.

### 1.4.2 Location

All development will be approved **only** where strategic planning has identified sites that are suitable and appropriate for the for small-scale and/or low-impact tourism development proposed.

The Ningaloo coast regional strategy Carnarvon to Exmouth and accompanying Ningaloo coast statement of planning policy 6.3 outline acceptable node locations and development intensities for the entire Ningaloo coast, with a range of tourist services and facilities being provided for (refer to figure 5). The strategy supersedes previous studies mentioned above.

Tourist activity (which includes camping, caravanning and station accommodation) is spread along much of the Ningaloo coast. Outside of the Cape Range National Park, much of it has occurred in an ad hoc and



unmanaged way, with detrimental impacts on the environment resulting from uncontrolled access, waste disposal, rubbish dumping, campfires and wood gathering, and weed invasion. These campsites need to be rationalised and those identified for retention managed adequately through an integrated management process involving pastoral leaseholders, coastal users and the Department of Conservation and Land Management.

## Policies

- P.1 Proposed tourism developments should be located consistent with the *State coastal planning statement of planning policy 2.6*, Ningaloo coast regional strategy Carnarvon to Exmouth, Ningaloo coast statement of planning policy 6.3, *Ningaloo Marine Park management plan* and *Cape Range National Park management plan*.
- P.2 Subject to environmental assessment, only tourism accommodation development proposals which are staged within the identified tourism investigation envelopes will be considered. Monitoring of environmental impacts shall be required as part of any approval and where necessary may require the cessation and remediation of an approved development.
- P.3 Camping on the Ningaloo coast should be restricted to designated and managed campsites, both in remote and semi-remote settings.



## Guideline

- G.1 Proposed tourism developments should be located to ensure:
- an appropriate distance from areas of cultural significance or heritage value including Aboriginal heritage is maintained;
  - stable environmental conditions (geological, hydrological and marine) exist for access, building construction and visitor and management use patterns;
  - soil types are suitable for and capable of development;
  - buildings and infrastructure are located to avoid risk of damage from coastal processes, consistent with *State coastal planning statement of planning policy 2.6*;
  - insect breeding sites, such as those of mosquitoes and biting midges, are avoided;
  - risks and hazards to visitors are minimised;
  - locations of declared rare or priority flora and fauna species are avoided or protected, and disturbance to important breeding or feeding areas is minimised;
  - where possible, the potential for further expansion or upgrading can be accommodated without significant impact on the environment;
  - potential impacts upon Marine Park Sanctuary Zones, fish habitat protection areas and other sensitive marine environments are minimised;
  - where possible, access to suitable artesian water sources is available; and
  - minimal impact or alteration to the natural topography of the site.



### 1.4.3

## Development type and scale

The Ningaloo coast is a fragile coastal environment and its attraction is its environmental, ecological, landscape and remoteness values. The development of sustainable tourism accommodation shall be carefully considered so as not to detract from the Ningaloo coast's amenity values. The type of development envisaged for the Ningaloo coast generally is low-impact accommodation, such as an ecolodge style development which is defined as:

Ecotourism accommodation, such as an ecolodge, includes the requirement of special care in design, construction and operation so as not to destroy the very resources or qualities that visitors come to experience. With all ecotourism proposals, education about the environment as well as utilisation of local culture, services, products and communities are important as is the actual operation of the facility, and information on these aspects must be included within any proposal. An ecolodge should subtly fit in with the landscape, utilise sustainable power, be low energy incorporating solar passive design, minimal water use, ecologically sensitive waste disposal and recyclable processing of all waste with no resultant pollution.

There is a demand for the provision of small-scale and/or low-impact tourism facilities. From a planning perspective, the Ningaloo coast regional strategy Carnarvon to Exmouth has determined that all major (larger-scale/higher-impact) tourism developments will be required to locate within the Carnarvon and Exmouth regional centres. The regional centres:

- are physically more capable and suitable for development; and

- have the available infrastructure, ie roads, air transport, communications, boat harbour, community facilities, water, sewerage and power.

Given the development on the east coast of North West Cape, incorporating the Exmouth boat harbour and associated marina, tourism and residential development, and the Carnarvon fascine residential development and the potential Whitlock Island tourism development, it is appropriate that further development be focused in those areas. It also is appropriate that the coast be retained largely in its natural state.

## Policies

- P.4 Subject to environmental and planning approvals larger-scale/higher-impact tourism facility proposals will be confined to Exmouth and Carnarvon.
- P.5 Development in Coral Bay will be based on the settlement plan in the Ningaloo coast regional strategy Carnarvon to Exmouth, with appropriate services being provided to the settlement and, must be in accordance with these guidelines.
- P.6 Proposed tourism developments outside Carnarvon, Exmouth and Coral Bay should be small-scale, low-impact and environmentally sensitive facilities consistent with the designation in the Ningaloo coast regional strategy Carnarvon to Exmouth, including ecolodge style developments in addition to camping nodes.

### 1.4.4

## Protection of amenity and landscape values

The remoteness values of the region are outstanding. Despite historic pastoral grazing, the landform and vegetation reinforce the unspoilt, natural and remoteness values of the area and its incredible natural beauty. The landform to the north is dominated by Cape Range. The range is flanked by highly eroded limestone terraces, drainage lines and gorges adjacent to red alluvial fans and flats, followed by a relatively narrow strip of aeolian white dunes adjacent to the beach. Vegetation is relatively uniform and low lying, ranging between 0.5 m and 1.5 m, apart from isolated stands of taller trees.

The nature of the landform and vegetation contributes to a visual landscape that is highly sensitive to changes. Already, minor tracks, small telecommunication towers on the Cape Range, and gravel pits are highly visible when viewed from Yardie Creek Road.

While the Milyering Visitor Centre, which is only single storey, is designed, constructed and sited sympathetically, it is visible from a considerable distance. Even essential standard road signs indicating speed, direction and hazards have landscape impact. Notwithstanding this, most of the tourism and minor tourism nodes provide some opportunity to minimise the visual impact of development through locations setback from ridgeline areas or in dune swales.



## Policies

- P.7 To retain the amenity values of the Ningaloo coast, only small-scale low impact tourism related facilities consistent with the locations', form and scale identified in these guidelines, will be supported.
- P.8 Proposed tourism developments should demonstrate an understanding of and be sympathetic with the landform, visual context and resources, views and general landscape values of a particular site and how it is likely to affect the perception of the area's remoteness values.

## Guidelines

- G.2 Building structures along the coast preferably should not exceed one storey or five metres from natural ground level. Buildings up to two storeys or nine metres from natural ground level may be considered in Coral Bay, provided the proponent demonstrates that the visual impact does not significantly impact on the visual amenity of the site from both land and water, and that the topography is not impacted upon.
- G.3 Proponents should prepare visual impact assessment, which should address:
  - a. the existing landform, vegetation, prominent features and viewsheds (to and from the proposed site);
  - b. contour information at a minimum of 1 m intervals; and
  - c. how the development proposal will affect amenity values using physical or computer generated three-dimensional models, including scale, colour, form, line, and texture.

- G.4 The proposed tourism development should be designed, constructed and operated to ensure:
- a. water wise vegetation, preferably West Australian natives where possible, are planted for screening, windbreaks, rehabilitation and landscape treatments;
  - b. weeds are monitored and eradicated where appropriate;
  - c. minimal change is made to landform cut and fill and topography to accommodate buildings and infrastructure;
  - d. disturbance or loss of natural vegetation is minimised or avoided;
  - e. architectural style, landscape design and construction materials reflect local elements (eg landform);
  - f. impacts on visually prominent areas such as headlands, cliffs and ridges are avoided;
  - g. that materials used are appropriate for the location, are assessed through visual impact assessment and have low reflective qualities that closely complement the visual amenity of the area;
  - h. noise pollution is minimised;
  - i. lighting which may affect nocturnal or breeding animals is minimised;
  - j. services, including powerlines are located below ground, where practical, provided the environmental impact is acceptable; and
  - k. isolated structures, such as car parks, toilet blocks, towers and storage areas, blend into the natural setting with appropriate selection of materials and with locally endemic vegetation.

## 1.4.5 Coastal setback

The Ningaloo coast has diverse landforms and natural systems and the coastal zone differs from place to place. Due to this diversity and in accordance with *State coastal planning statement of planning policy 2.6*, setbacks for development within the coastal zone should be defined following consideration of the natural coastal processes in specific areas, including storm surge and sea-level rise. For example, some areas have extensive mobile dunes while others have rocky foreshores. Some areas have drainage systems which affect mangroves and others have coastal plains which are subject to tidal or surface run-off inundation. Some areas are important habitats for natural fauna while others have high recreational value.

The coastal zone is dynamic and changes over time. The coast is subject to erosion or accretion due to natural processes and/or as a result of human and animal activity. For example, dunes can be mobile as a result of natural processes or can become mobile as a result of vegetation removal. Therefore, on one hand, developments could be affected by foreshore and dune mobility while on the other, they could affect vegetation and cause dune mobility.

## Policies

- P.9 Permanent tourist accommodation developments should be set back from the coast based on an assessment of natural coastal process constraints, as per *State coastal planning statement of planning policy 2.6*.
- P.10 Development should provide for appropriately managed public access to the coast in keeping with the recommendations of the Ningaloo coast regional strategy Carnarvon to Exmouth.



## Guidelines

G.5 An appropriate setback between any permanent tourist accommodation development and the coast, shall be determined consistent with *State coastal planning statement of planning policy 2.6*, and in addition shall:

- a. incorporate the primary and secondary dunes where they exist;
- b. address the stability accretion/erosion of the dune and beach system (beach sand cycle);
- c. address inundation eg on alluvial floodplains and drainage lines, including from extreme natural events (eg cyclone, storm surge or tsunami) and long-term changes in sea level;
- d. protect dunes, beaches and near shore waters which provide breeding, nesting or feeding areas for significant fauna; and
- e. set back development from visually prominent sites such as headlands, cliffs, beaches and other locations which are a focus of attention or in major viewsheds from other important locations.



G.6 The land within the coastal setback should be maintained and managed to conserve terrestrial, intertidal and near shore natural physical and biological, landscape and cultural features through the preparation and implementation of a foreshore management plan, which should define management responsibilities to ensure:

- a. signage, bollards, rubbish bins and small structures, water tanks or toilet blocks within the foreshore

reserve have a very low visual impact and are of a form (colour, materials and size) consistent with the amenity and character of the area;

- b. coastal access roads and car parks are sensitively designed and located to address environmental constraints, minimising cut and fill and vegetation removal, follow natural contours, and direct traffic away from environmentally sensitive areas;
- c. pedestrian access is the principal form of access through the coastal foreshore reserves where one exists or coastal setback and clearly defined paths direct people away from environmentally sensitive areas;
- d. four-wheel drive, off-road vehicles and motorbikes are not be permitted on the beach, within the coastal foreshore reserve (unless beach access has been identified), or the coastal setback except for approved boat-launching facilities or in accordance with a tourist operator licence from either the Marine Parks and Reserves Authority or Conservation Commission of Western Australia; and
- e. stabilisation, rehabilitation, revegetation and landscape treatment of the foreshore area is undertaken using locally plant species.



## 1.4.6 Marine infrastructure

Direct marine impacts arise due mainly to water-based activities (eg boating) and generally have a localised impact, such as damage caused by anchor chains. Indirect marine impacts (eg increased turbidity, habitat disturbance and bilge discharge) usually are more difficult to control where large numbers of recreational boat enthusiasts have access to coral reefs. There also is an increased risk of contamination due to fuel spills and inappropriate sillage and rubbish disposal.

Marinas and canals have the potential to cause significant environmental impact, at the time of construction and on an ongoing basis. This infrastructure is not considered to be consistent with the environmental values of the area and the intent of small-scale low-key environmentally sensitive tourism developments.

Management is required to prevent uncontrolled access by vehicles and the accumulation of boats on the beach in the vicinity of informal beach boat-launching sites.

### Policies

- P.11 Marina and canal developments will be considered only in the designated townsites of Exmouth and Carnarvon.
- P.12 Small jetties and boat-launching facilities may be allowed provided they are consistent with the *Ningaloo Marine Park management plan*, Ningaloo coast regional strategy Carnarvon to Exmouth, have a strategic facilities plan and have been referred to the Environmental Protection Authority.
- P.13 Coastal engineering structures such as groynes and seawalls will not be permitted adjacent to the Ningaloo Reef, outside the already approved structures in Carnarvon, Exmouth and Coral Bay, other than for a public purpose.

## 1.4.7 Water availability

Water availability has been recognised as one of the most significant constraints to the development of the region. The climate of the Ningaloo coast ranges from hot, arid conditions at the tip of Cape Range in the north to warm semi-arid conditions around Carnarvon in the south. During January and February each year, the maximum daily temperature regularly reaches 45° C.

Rainfall in the region averages 300 mm annually with peak falls in summer and winter. The sources of rain include tropical cyclones, the incursion of warm moist air from the Kimberley Region and mid-latitude depressions.

Groundwater occurs either as superficial or confined groundwater. Supplies of fresh, unconfined groundwater generally are restricted to the vicinity of the major rivers or in elevated areas such as Cape Range. In the case of Cape Range, fresh or brackish groundwater usually overlies very saline groundwater. Confined or artesian groundwater is under pressure and rises when intercepted by a bore or may naturally flow to the surface via springs.

Artesian groundwater occurs throughout most of the region and may be as much as 900 m below the surface in coastal areas such as Coral Bay where alternative sources of groundwater generally are not available. Artesian groundwater is brackish to very saline, varies in temperature from 10° C to 100° C and is corrosive. It requires substantial treatment usually involving desalination, cooling, softening and removal of iron to attain potable water quality.

Water availability also constitutes a significant environmental constraint. Pumping of fresh or brackish water which overlies saline water can cause saltwater intrusion to the surface. Recharge of the shallow aquifer may occur only after intense or long rainfall and in some years, this may not occur at all. Subterranean



fauna, particularly stygofauna, also may be affected by changes in groundwater levels, quality and salinity due to groundwater extraction. Wastewater from the desalinisation and/or treatment of saline groundwater, corrosive artesian groundwater or sea water may be highly saline, alkaline, acidic or contain heavy metals and minerals, and therefore cause impacts to the environment if discharged. Evaporation or infiltration ponds and ocean outfall pipes, if visible, are likely to affect remote values and may also have a negative environmental impact.

Clearly, the issue of water availability needs to be considered in the context of the water required by a specific development proposal, the available water resources, proposed effluent treatment and recycling and specific site circumstances.

## Policies

- P.14 The disposal of wastewater produced by desalinisation or the treatment of artesian water to the marine environment may only be considered where the site selection for infrastructure minimises impact on the environment and visual amenity, and there is no suitable alternative or complementary water source. Disposal to the terrestrial environment may be considered, provided groundwater and surface water quality and quantity are maintained such that existing and potential uses, including ecosystem functioning, are protected.
- P.15 The location, scale of development and future expansion should be consistent with availability and sustainability of safe and reliable water sources.



- P.16 Extraction of shallow, unconfined groundwater must be sustainable, without affecting dependent ecosystems or physical processes.
- P.17 Development proponents should endeavour to obtain water from a variety of sustainable sources, with collection of rainwater being a priority.
- P.18 Development proponents should locate visible water supply and storage facilities so as to minimise environmental and visual impact upon landscape.

## Guideline

- G.7 Water conservation strategies (eg including composting toilets, grey water and stormwater re-use and low-flow shower roses) should be incorporated in development proposals.

## 1.4.8 Cyclones, flooding and drainage

The Ningaloo coast is subject to cyclones, which cause strong winds, storm surge, and tsunamis, which can lead to inundation of the coastal zone. More frequently, flooding of the coastal plain occurs as a result of the combination of rain, high tides and low-lying land. If sea levels rise, as predicted (figure 3), the coastal zone may be subject to additional and increasing inundation. Therefore, development sites will require careful selection to avoid adverse impacts from cyclones and flooding and should be consistent with *State coastal planning statement of planning policy 2.6*. Decision-

making authorities must assess and respond to development proposals carefully to avoid liability for loss or damage.

## Policies

- P.19 Landforms and topography should not be altered substantially to deal with potential flooding.
- P.20 Tourism development within the nominated storm surge lines will be limited to:
- those structures necessary for public facilities which are coastally dependent or those which are temporary within the 3 m AHD contour line (which represents a 1 in 100 year flooding event from both terrestrial and marine sources); and
  - no permanent or semi permanent structures within the 4 m AHD contour line (which represents a cyclone category 5 worst case track) unless the proponent accepts that the structure is expendable or the proposal is designed to acceptable site levels to reduce the impact of potential storm surge.
- P.21 Permanent tourist accommodation developments shall be constructed to Australian Standard AS/NZS 1170.2:2002 (or its replacement) to withstand the wind effects of cyclones, and semi-permanent structures should be easily removable in the event of a cyclone warning being issued.

## Guideline

- G.8 Development proposals shall:
- consider innovative pavement solutions as an alternative to bitumen and concrete to decrease the amount of stormwater run-off;

- use historical terrestrial and marine flooding data or best estimates based on adjacent lands, and a precautionary principle safety factor to determine areas subject to 1 in 100 year inundation events; and
- incorporate water-sensitive design principles and features into overall design of buildings, hard surfaces, landscaped areas and stormwater drainage.

## 1.4.9 Sewage treatment

Sewage treatment presents a considerable environmental constraint to development. Conventional septic systems involve the leaching of nutrients and other pollutants which may affect subterranean fauna, marine water and groundwater quality and coral ecosystems. Unlike freshwater wetlands, the marine environment is sensitive to nitrogen rather than phosphorus. In addition, coral reef systems are very low in nutrients and small increases can result in a significant ecosystem response (Grigg and Dollar, 1993). Alternative treatment units (eg Ecomax or Biocycle) for secondary and postsecondary treatment still produce effluent containing nutrients, metals and sludge, which require disposal. Evaporative or digestion ponds may produce odour, be highly visible and represent a risk to the environment if containment mechanisms (eg plastic or clay lining) fail. Tertiary treatment of sewage is likely to be uneconomic, given the anticipated scale of development and current technology (Baker, pers com).

## Policies

- P.22 Appropriate management and monitoring should be established to ensure criteria are met and there are contingency plans for cases of

infrastructure failure or where minimum criteria are not met.

- P.23 Sewage treatment infrastructure should produce minimal odour and be appropriately separated from permanent tourist accommodation developments.

- G.12 Sewage treatment and disposal systems should incorporate fauna-exclusion strategies or make provision for fauna management.

## Guidelines

- G.9 Best practice enclosed treatment plants will be considered for approval where:
- an integrated and sustainable approach is adopted to minimise water use and maximise recycling;
  - treated sewage will contain a maximum of 2.5 g/m<sup>3</sup> total nitrogen, 1 g/m<sup>3</sup> total phosphorus, 5 g/m<sup>3</sup> biological oxygen demand, 5 g/m<sup>3</sup> suspended solids and 100 thermo tolerant coliforms; and
  - treated sewage will be disposed via trickle irrigation to natural vegetation (not within 100 m of beaches or wetlands) or evaporation ponds rather than disposal to the marine environment or groundwater aquifer via injection.
- G.10 Screened solids and sludge should be transported to an appropriate licensed landfill.
- G.11 Organic fertilisers may be used when derived from the development proposal itself (eg toilet compost) rather than inorganic fertiliser, subject to Health Department requirements.



## 1.4.10 Waste disposal

Landfill sites in remote areas normally are unlined, uncovered and infrequently maintained (Mantle, pers com). This may result in odour, pollutants leaching into groundwater and rubbish dispersal from

strong onshore winds. The location of a landfill site adjacent to tourism development reduces remote values and tourism amenity and should have a site management plan prepared.

### Policy

- P.24 Organic and green waste should be collected, composted and appropriately stored for use as mulch if appropriate, soil improver or fertiliser. Organic waste not used for this purpose and all inorganic waste should be transported to a licensed landfill facility.

### Guideline

- G.13 Development proposals should prepare and implement a waste management program which minimises waste production and maximises use and recycling.



## 1.4.11 Access

Most of the Ningaloo coast is frequently accessed by locals and visitors travelling in four-wheel drive vehicles and caravans seeking a coastal holiday experience, adventure and/or solitude. The establishment of indiscriminate tracks to the coast leading to recreation sites for fishing, diving or camping, as well as many campsites themselves are causing loss of vegetation and subsequent dune destabilisation. This is compounded by historically inappropriate rubbish disposal, increased fire risk from campfires and degradation to native vegetation from coastal use. In recent years visitor numbers have increased markedly, such that urgent management is required to prevent long-term or irreversible damage to the environment.

The main tourist access network should remain the North West Coastal Highway, Minilya - Exmouth and Burketts roads. The main north-south coastal access roads (Blowholes - Gnaraloo Road and Coral Bay-Yardie Creek Road) should be located in accordance with setback requirements away from the coast, with spur roads providing access to appropriate destinations. This strategy has been highly successful in Cape Range National Park by minimising indiscreet and uncontrolled beach access, usually by four-wheel drive vehicles. The spur roads also would need to be formed and maintained to remove the necessity for vehicle operators to create new tracks when existing ones become boggy, rough or impassable.

Providing access to a particular tourism site may have significant environmental implications beyond its direct construction impacts. It would be irresponsible to subject the coastal zone to increased use prior to development of supporting infrastructure and management arrangements.

Yardie Creek is one of the main features of the Cape Range National Park, for its wildlife conservation, aesthetic, cultural and nature-

based tourism values. The issue of a crossing for Yardie Creek has been discussed for some time. The provision of a permanent crossing of Yardie Creek would detract significantly from the environmental values, amenity of the area and the current visitor experience. On balance, the existing natural sandbar crossing near the mouth of the creek is more aesthetically and environmentally acceptable. It is consistent with the maintenance of the area's environmental values and Commonwealth Department of Defence operational requirements south of Yardie Creek.

## Policies

- P.25 Access to and from tourist developments on the Ningaloo coast should be via formed spur roads.
- P.26 The planning and construction of access roads, supporting management (eg car parks, signage, track closures, spur roads and rubbish collection) and proposed tourism nodes should be integrated and co-ordinated by the Ningaloo Sustainable Development Committee.
- P.27 The crossing at Yardie Creek should remain in its natural state with no built structure supported.
- P.28 Development proposals should encourage walking, hiking and organised tour experiences, rather than individual vehicle transport.

## Guidelines

- G.14 Roads, tracks and paths should be aligned and constructed to minimise disruption of native fauna movement patterns.
- G.15 In fragile environments, boardwalks and fenced walkways should be provided.

## 1.4.12 Energy supply and building energy efficiency

Proposed tourism developments may require energy for water heating, air-conditioning, refrigeration, lighting, general electrical appliances, vehicles and water pumps. The Office of Energy has provided information which suggests that viable alternative energy sources are available (eg passive solar, solar, wind, gas, geo-thermal). Noise produced by conventional power generators may affect the quality of visitor experience.

### Policies

P.29 Proposed low-impact tourism developments should employ alternative/renewable energy sources where possible.

P.30 Fuel or gas-powered generators should be used only as a backup to alternative energy sources or in emergency situations.

P.31 All new development should maximise energy efficiency through climate sensitive, passive solar and energy efficient design.



### Guideline

G.16 Proponents should ensure that development proposals:

- a. have the capacity to generate their own power;
- b. use northern solar orientation for passive heating and cooling;

- c. minimise solid enclosure and thermal mass;
- d. maximise roof ventilation;
- e. use elongated or segmented floor plans to minimise internal heat gain and maximise exposure for ventilation;
- f. separate rooms and functions with covered breezeways to maximise wall shading and induce ventilation;
- g. isolate heat-generating functions such as kitchens and laundries from living areas;
- h. control exposure to wind through building orientation and configuration, number and position of wall and roof openings and relationship to gradient and vegetation;
- i. provide shaded outdoor living areas such as porches and decks;
- j. use suitable micro-climates for warm winter sites and cool summer sites;
- k. orientate to take advantage of cooling breezes;
- l. incorporate features to minimise energy use; and
- m. avoid the use of energy-intensive, environmentally damaging, waste-producing and/or hazardous materials.

## 1.4.13

### Construction and management

The following factors should be incorporated in the planning and implementation phases of the proposed development, through an environmental management system (International Organisation of Standardisation, 1997) to minimise impacts and achieve a more sustainable development.

#### Guidelines

- G.17 Construction practices should ensure minimal site disruption.
- G.18 Proponents should develop on-site guidelines or controls for contractors, specifying appropriate construction practices.
- G.19 Proponents should provide briefing or training sessions for all contractors and their employees, specifying the desired practices and the consequences of non-compliance.
- G.20 Contractors should provide a performance bond or deposit which can be used to repair any environmental damage inconsistent with an environmental management plan.
- G.21 Environmental objectives and criteria should be documented.
- G.22 Monitoring and evaluation systems should be prepared and implemented.
- G.23 The proponent should undertake regular environmental audits.
- G.24 Staff training and environmental education programs should be established.
- G.25 Interaction between tourists and physical and/or cultural environments should be documented and managed (eg visitor information and education facilities).
- G.26 Minimal use and disposal of chemical cleaning products should be encouraged. Where disposal is unavoidable, low-impact products should be sought.
- G.27 Construction and decoration materials should not produce or release harmful chemicals during or after manufacture.
- G.28 Proponents should prepare and adopt a product-purchasing policy which minimises life cycle costs and maximises use, re-use and recycling.
- G.29 Proponents should provide information to visitors that encourage appropriate behaviour towards wildlife, cultural resources, historic and natural features.

## 1.4.14

### Approvals process

The tenure, vesting and zoning of land, variations in planning schemes and management plans and the type of development proposal will determine the development approval required. Despite variations, it is important that tourism developments are considered in a coordinated, orderly and consistent way thereby ensuring the objectives and intended outcomes of these guidelines and the Ningaloo coast regional strategy Carnarvon to Exmouth are achieved. Currently under investigation is the length of tenure to be allowed on leasehold land vested in the Conservation Commission of Western Australia, and whether this should, in the appropriate circumstances, be longer than the currently allowed 21 plus 21 years.

#### Policy

- P.32 Development approvals will be as required by the governance framework for the Ningaloo coast.

- P.33 All development proposals, which could have a significant impact on the environment, will be referred to the Environmental Protection Authority (EPA).
- P.34 Development of tourism sites will require approval under the *Western Australian Planning Commission Act 1985*, *Town Planning and Development Act 1928* and be consistent with the *State planning strategy*, the Ningaloo coast regional strategy Carnarvon to Exmouth, the Ningaloo coast statement of planning policy 6.3, other relevant statements of planning policy, relevant schemes and consider Aboriginal heritage sites and/or surveys.
- P.35 All development proposals within the conservation estate should be consistent with the *State planning strategy*, the Ningaloo coast regional strategy Carnarvon to Exmouth, the Ningaloo coast statement of planning policy 6.3, other relevant statements of planning policy, relevant schemes and consider Aboriginal heritage sites and/or surveys and the approved management plan for that area.
- Guideline**
- G.30 Prior to lodging an application for development, proponents should liaise with the Department of Conservation and Land Management, Department of Environment, Department for Planning and Infrastructure, local government and Department of Indigenous Affairs.
- G.31 Proponents will be required to provide a high level of information to the EPA upfront, at the time of referral. This information should include:
- a. a detailed description of the development proposal including site and landscape appraisal, ultimate development scenario, project design, access arrangements, construction, management and operation;
  - b. a detailed description of the existing, physical, biological, landscape and cultural environment, which include detailed field investigations of flora, fauna (terrestrial, marine and subterranean), declared rare and priority species, biodiversity, geology and geomorphology, hydrology, ecological processes and systems, land- and sea-scape, drainage, flooding and Aboriginal cultural heritage significance;
  - c. an assessment of coastal processes if the site abuts the coast;
  - d. an assessment of construction, visual, indirect, ongoing, off-site and cumulative impacts of the development proposal, and its supporting infrastructure;
  - e. an assessment of alternatives and justification of the development proposal selected;
  - f. information which demonstrates, with a high degree of scientific confidence, that anticipated environmental impacts can be managed;
  - g. a commitment to and description of an environmental management system which integrates the construction and operation of the development proposal with environmental management criteria and objectives, defined management responsibilities for implementation and demonstrates progressive improvement; and
  - h. a monitoring program, contingency and emergency response plans in case environmental criteria or objectives are not met.





# Section two

## Structure plans







## 2.1 Carnarvon structure plan

### 2.1.1 Introduction

Carnarvon is a regional centre for the Gascoyne, and has a particular focus as the southern tourist gateway to the Ningaloo coast. It is also the northern gateway to the Shark Bay world heritage area, the Aboriginal and European regional and cultural centre for the Gascoyne region and host to most government agencies in the region.

This structure plan identifies key land use planning objectives, actions and guidelines for the following land uses:

- Flood management
- Storm surge
- Residential
- Future urban land
- Special residential/rural residential
- Overseas telecommunication centre
- Commercial
- Boat harbour
- Industrial land
- Strategic industrial site
- Recreation and cultural activities
- Plantations
- Rural.

The structure plan also specifically addresses and recommends actions regarding urban design, townscape and tourism development potential of Carnarvon. The structure plan recognises that the largest single constraint for

Carnarvon is flood risk, which requires special consideration and is a major constraint to the future expansion of the townsite.

The planning objectives, actions and guidelines contained in this structure plan aim to guide the future growth and development of Carnarvon in-line with the key functions identified above. Within actions and guidelines the relevant agency or stakeholder to progress the matter is provided in brackets. Where abbreviations are used please refer to the Abbreviations list at the end of the document for the full name of the agency.

Unlike Exmouth and Coral Bay, Carnarvon has not been the subject of a previous structure plan. The Shire of Carnarvon however has, in association with the production of its draft Town planning scheme 12 (draft TPS 12), produced a local planning strategy. This strategy has evolved through a co-operative approach between the shire and the Department for Planning and Infrastructure over several years. The shire informed the structure plan through the development of its local planning strategy. The consultation process through the release of *Future directions: sustainable tourism and land use scenarios for the Carnarvon-Ningaloo coast* and *draft Carnarvon-Ningaloo coast regional strategy* have fine tuned the structure plan.

This structure plan reflects the emerging and desired land use pattern, form and shape of Carnarvon as it moves to a more sustainable future. This text should be read in conjunction with figure 29: Carnarvon structure plan.







## 2.1.2 Carnarvon

### Planning objective

**To provide for the orderly development of the Carnarvon townsite.**

**To cater for higher-order and higher-impact development, infrastructure and tourism facilities within the Ningaloo coast.**

Carnarvon is well positioned to cater for higher-order and higher-impact development, infrastructure and tourism facilities. Along with Exmouth, it is the bookend for development of the Ningaloo coast and should be promoted for its development opportunities.

## 2.1.3 Flood management

### Planning objective

**To ensure that all future development be directed into areas with flood-protection features or be designed to accommodate flood levels in line with a 1 in 100 year flood event.**

Flood risk is a major constraint to the town of Carnarvon.

Carnarvon has experienced four major flood events in the past 50 years, and of these Cyclone Steve, in March 2000, caused the most damage. The damage, mostly to roads, was estimated at \$20 million and also resulted in significant flooding of the plantation area apart from Brown's Range.

The Water and Rivers Commission produced a flood study of the Gascoyne River in 2000 which was partly endorsed by the Shire of Carnarvon. The study undertook 100 year flood depth mapping, identified floodways

near the Carnarvon townsite and made recommendations for future floodplain management within and adjoining the townsite. The key recommendations, in context of future land use and development, were to:

- provide and maintain a flood retention area within Nichol Bay Flats (adjacent to Brown's Range);
- provide new levees/embankments to divert floodwaters away from existing urban and horticultural areas and rehabilitation of existing levees;
- introduce a minimum floor level for future buildings above the annual exceedance probability 1 in 100 year flood level;
- introduce no-dwelling areas adjacent to any levee in the unlikely case of levee failure or overtopping;
- encourage flood-proofing of commercial and industrial premises;
- encourage relocation of buildings/premises in areas of high flood risk;
- designate identified floodways and introduce controls to preclude building and restrict other forms of land use and development (eg fences, landfill, embankments etc) within them; and
- encourage land uses compatible with flood risk and susceptibility to soil erosion in plantation areas.

The areas subject to flood risk are identified in figure 29.

### Actions and guidelines

- That the recommendations of the Water and Rivers Commission be utilised in all future planning, subdivision and development assessment in order to minimise the impact of future flood events (LG, DoE, DPI)

## 2.1.4 Storm surge

### Planning objective

**Ensure that all future development has appropriate finished floor levels to accommodate storm surge.**

As with flooding, storm surge has significant implications for the Carnarvon townsite.

Babbage and Whitlock islands, South Carnarvon, South Carnarvon to Oyster Creek and inland to the south and east of Carnarvon airport are subject to the risk of cyclone-related storm surge. This severely limits any future expansion of the townsite, unless engineering and associated works are undertaken.

Cyclone Ingrid, in 1970, was the most significant storm surge event recorded in Carnarvon. The storm surge level was recorded at 2.2 m, on top of a prevailing tide of 0.6 m. This resulted in a significant proportion of south Carnarvon being flooded.

The *Gascoyne coast regional strategy* recommended a minimum elevation of 4.2 m Australian height datum (AHD) be allowed for development near the coast to accommodate future flood events and storm surge impacts. However, this level may need to be revised based on a measured storm surge of five metres on the Onslow Coast during Cyclone Vance in 1999 and possible rises in ocean levels because of climate change.

### Actions and guidelines

- Further research and investigation of funding opportunities to be undertaken to determine an appropriate finished floor level to accommodate storm surge (LG, DPI)

## 2.1.5 Residential

### Planning objectives

**To encourage appropriate residential infill in existing residential areas to accommodate further growth within flood levee banks.**

**To encourage medium-density development in close proximity to the town centre to accommodate aged and dependent persons' accommodation.**

**To encourage subdivision and development within the townsite that incorporates the philosophy of *Liveable neighbourhoods*.**

There are several residential precincts within Carnarvon.

### Fascine

The area known as the Fascine is bounded by Olivia Terrace, Forrest, Douglas and West streets and consists of predominantly older dwellings, varying in age from 40 to 100 years. This area is proposed to be sewerred in the short term and thus may have limited opportunities for redevelopment in keeping with the retention of heritage-listed buildings in the area.

### South Carnarvon

South Carnarvon is bounded by Hubble, Carey, West, McKenna and Douglas streets and Carnarvon Road. A floodway skirts the southern boundary of the precinct draining floodwaters into Massey Bay, making parts of this area prone to flood events. The area also is located within the Carnarvon airport flight path. The proposed sewerred of this area may facilitate a density increase to R20 although constraints of the existing airport flight path require careful consideration.

## Babbage and Whitlock islands

Babbage and Whitlock islands largely are undeveloped areas and offer the opportunity for residential and tourism uses in the future. The area has significant cultural heritage which includes the historical One Mile Jetty and Lighthouse Keeper's Cottage Museum. A fish processing plant operates in this locality. It is recognised that this use may conflict with proposed tourism and residential uses planned for the surrounding area, and therefore the potential relocation of this use to the boat harbour is encouraged. It is however recognised that the economic viability of such a move may render it unlikely and therefore future planning for the locality should acknowledge the continued operation of the plant.

Although it is exposed to storm surge and cyclone events, the shire generally considers this land as not flood prone. The shire supports part of this area being developed as a residential canal estate and has earmarked protection of the foreshore and mangrove areas through a parks and recreation reservation in draft TPS 12.

## Brockman

A more contemporarily laid out residential area, Brockman is defined by the Fascine waterway, Babbage Island Road, Robinson, Rushton, James, Robinson streets, Olivia Terrace and the tramway. A wastewater treatment plant buffer (from the adjacent wastewater treatment plant north of Babbage Island Road) extends over a significant portion of this area. It is planned to develop a new wastewater treatment plant either north or south of the town and ultimately decommission the existing plant.

## Morgantown

Morgantown is bounded by the Gascoyne River, East Carnarvon, Robinson Street and Babbage Island Road. It is well established as a residential neighbourhood with a mix of low-density and medium-density development. It is protected from the Gascoyne River by a flood-protection levee. It is located to the east of the existing sewage treatment works and evaporation ponds. The potential for recreational use of the bank of the Gascoyne River should be explored in this location and other land abutting the river. Potential for residential infill exists in the locality.



## East Carnarvon

East Carnarvon borders the Gascoyne River, Boundary Road, Robinson Street and Morgantown. It is at the northern end of Carnarvon airport with some impact from the flight path and also houses the Carnarvon power station. The area is

a mix of horticulture, light industry, equestrian uses and low-density single residential housing. The precinct has been designated for low-density single residential housing, however, is constrained by the lack of a public sewerage scheme. Sewer provision in this area would assist in the supply of affordable residential land in Carnarvon. The precinct also includes the Festival Ground (Carnarvon's principal sporting facility), underdeveloped public open space (Wise Park), the East Carnarvon Primary School, tourist accommodation, the Carnarvon power station, a supermarket and other commercial uses.

A flood-protection levee is provided along the south bank of the Gascoyne River.



## **Actions and guidelines**

- Encourage medium-density development that maximises the existing grouped/multiple dwelling residential densities on land, which is in close proximity (within 800 m) of the town centre due to the precinct's suitability and capability for further infill development (LG, WAPC).
- Consider opportunities for medium density development in areas to be seweraged as part of the Water Corporation's Infill Sewer Program (LG, WC, WAPC).
- Protect foreshore and mangrove areas of Babbage and Whitlock islands through parks and recreation reservation within draft TPS 12 (LG).
- Where economically feasible encourage the long term relocation of the fish processing plant to another suitable site within the Carnarvon townsite (GDC, Nor-west Seafoods, LG).
- Relocate the existing wastewater treatment plant adjacent to Brockman to make the residential area more attractive for infill redevelopment (WC, LG).
- Consider passive recreation opportunities such as shared cycle and pedestrian paths along the southern bank of the Gascoyne River (LG).
- East Carnarvon is recognised as a priority sewerage area for Carnarvon's infill sewerage program and should be progressively serviced and staged in the short term (LG, GDC, WC).

## **2.1.6 Future urban land**

### **Planning objective**

**That the long term use of Carnarvon airport be considered in future planning.**

The Carnarvon airport land is well suited to future urban land use, however it is expected to remain operational in its current location for at least the next 30 years. It is well protected against flood potential and gradually has been surrounded by the development of the town. For this reason, the operation of the airport requires protection to ensure it is not affected by development in the vicinity. The Shire of Carnarvon intends to implement a special control area as part of draft TPS 12.

### **Actions and Guidelines**

- Consider future development in close proximity to Carnarvon airport and flight path to take into account the needs and constraints associated with development in close proximity to an airport (LG, WAPC).
- Undertake a land use study of the airport in the long term to determine the most appropriate land use of the land should the airport be relocated to another site (LG).

## 2.1.7 Special residential/rural- residential

### Planning objective

**To provide a limited amount of special residential/rural-residential land in appropriate locations that will not constrain future residential or other land use expansion within the townsite.**

The Kingsford area contains a special residential estate on the north side of Boor Street, special rural housing along its western and eastern margins (within the existing floodways) and plantations (predominantly north of Robinson Street). Also, future needs of Mungullah Village require investigation.

The Shire of Carnarvon has recommended investigation of the northern section of the Overseas telecommunications centre (OTC) area for suitability for rural/special residential uses.

Brown's Range is relatively undeveloped and potentially may be suitable for special residential development. The range is characterised by natural vegetation cover which provides an attractive landscaped entry to the town from the south. Potential exists on the northern foot slopes facing the North West Coastal Highway, based on an R2.5 coding, subdivision of up to 95 lots. Further investigation is warranted prior to consideration of this use.

The Shire of Carnarvon has identified part of Massey Bay, which is presently zoned special residential, as suitable to address demand for equestrian uses and proposes to rezone this land to rural-residential to cater for the use.

### Actions and guidelines

- Prepare a rural/special residential study to ascertain existing supplies of undeveloped land and to recommend future planning needs and demand for rural/special residential subdivision (LG, WAPC).
- Assess the future development requirements of Mungullah Village (LG, DHW, Gnully Group, WAPC).
- Assess the capability and suitability of the northern section of the OTC area and Brown's Range for rural residential/special residential uses (LG, WAPC, landowners).

## 2.1.8 Overseas telecommunication centre (OTC)

### Planning objective

**To promote part of the area as a tourism site and the long-term viability of the remaining area for rural and low-density residential uses.**

This area is bounded by North West Coastal Highway, Brickhouse Station and Brown's Range. The western portion of the precinct is dominated by the site of the former OTC satellite station and associated staff housing. Its parabolic dish antenna is a distinctive landmark which reflects the site's cultural heritage significance. The use of this site for tourism purposes is encouraged.

The shire proposes conservation and tourism development for the site, once land tenure is finalised. The surrounding land is proposed to be developed into low-density housing (minimum lot size 2000 m<sup>2</sup>).

## Actions and guidelines

- Implement progressively a conservation plan and tourism concept plan for the OTC satellite station (LG).
- Review viability of existing plantation horticulture and the viability of alternate land uses (LG, WAPC, GDC, AgWA).

## 2.1.9 Commercial

### Planning objectives

**To promote Carnarvon as a regional centre for the provision of commercial services for the Gascoyne Region.**

**To provide adequate land, appropriately located and serviced, for the commercial needs of Carnarvon and the region.**

The Carnarvon town centre is defined clearly by Olivia Terrace, Robinson and James streets, Carnarvon Road and Douglas, Francis and Forrest streets. It consists of flat, developed land, comprising a mix of civic, cultural/entertainment, retail/commercial, educational and recreational uses.

The current level of retail and commercial floor space is not known, due to the lack of such surveys. This highlights a need for a commercial inventory and a local commercial strategy for the centre to determine future demand and requirements for commercial land. A new department store is under construction in Olivia Terrace.

Design guidelines to encourage energy-efficient building development, provide shaded pedestrian areas and promote an architectural style for Carnarvon are recommended to improve the town centre.

The Shire of Carnarvon also has identified the need for a review of parking and access to the town centre to ensure it is linked appropriately with surrounding areas and accessible to visitors.

Opportunities for medium-density residential development within the town centre should be explored along with the potential provision for facilities to attract retirees to relocate to Carnarvon to take advantage of its climate.

The future of the local commercial area within the Brockman residential area also should be considered in a local commercial strategy to ensure that it not only satisfies the needs of the local community but also does not replicate or compete with the town centre commercial area.

The Shire has also highlighted that limited vacant commercial land exists in Carnarvon although immediate needs may be addressed through infill and intensification of existing commercial land use.

## Actions and guidelines

- Prepare a local commercial strategy that details current levels of commercial and retail use in Carnarvon to guide the future commercial planning needs of the regional centre (LG, DPI).
- Develop local commercial design guidelines to encourage energy-efficient building design, provide shade for pedestrians and promote a Carnarvon style of commercial architecture (LG, DPI).
- Review the existing town centre road network and parking provisions and recommend appropriate changes if necessary (LG, MRWA).

## 2.1.10 Boat harbour

### Planning objective

**To provide for the needs of the region's fishing fleets and address storm surge.**

The Carnarvon boat harbour comprises the existing small boat harbour, Carnarvon Yacht Club and the partially constructed yacht club marina, and mangrove communities. The harbour caters mainly to the needs of the Carnarvon fishing fleet and contains a number of fish-processing facilities. Some of this area is affected by storm surge, however the effect is mitigated partially by the accreting mangrove communities.

A new, land-backed wharf is proposed to increase boating capacity and improve unloading/loading of marine services, and a storm surge wall is planned for the western edge of South Carnarvon.



### Actions and guidelines

- Construct the extension of the existing boat harbour to cater for the future boating needs of Carnarvon (DPI, LG).
- Commence construction of a storm surge wall between South Carnarvon and the boat harbour area (DPI, LG).
- Investigate the infrastructure needs, such as water, sewerage and power within the boat harbour area (LG, DPI).

## 2.1.11 Industrial land

### Planning objectives

**To provide adequate land, appropriately located and serviced, for a range of industrial uses.**

**To minimise the impact on the natural environment of future industrial development.**

Carnarvon has a potential industrial land supply of approximately 166 ha, including existing industrial land capable of further subdivision. The shire has suggested that there is a limited amount of available vacant serviced industrial land and has requested the State Government's support to release additional areas. Two main areas have been identified by the shire as appropriate for industrial use. The first is immediately east of the airport and south of Cleveland Street and has long been identified for industrial development. The second area is bounded by Harbour Road, North West Coastal Highway, HMAS Sydney Memorial Drive, and Boundary Road. Further detailed assessment of these areas is warranted.

### Actions and guidelines

- Investigate the need for the provision of suitable industrial land to meet the future needs of Carnarvon (LG).



## 2.1.12 Strategic industrial site

### Planning objective

**Promote a site for the future strategic industry of Carnarvon, including the power station.**

This area is contained within the general industry land of *Shire of Carnarvon town planning scheme 10 (TPS 10)* and is bounded by Hudson Street, the North West Coastal Highway and Brown's Range, HMAS Sydney Memorial Drive, and the proposed floodway adjacent to the airport. Mungullah Village is located to the north of the precinct. Remnant vegetation along the eastern margin/floodway provides an attractive landscaped entry into Carnarvon from the south.

The existing industrial estate, in the north of the precinct, largely is undeveloped. Part of the estate, Lot 1 Harbour Road, previously was used for a truck-stop/breakdown area. Harbour Road provides the only access, either from North West Coastal Highway or from Boundary Road, to the estate.

The development of this land could facilitate the relocation of the existing power station and wastewater treatment plant.

The further detailed assessment of strategic industrial areas is warranted.

### Actions and guidelines

- Designate the precinct as a possible site for future strategic industry, relocation of the Carnarvon power station and wastewater treatment plant (LG, WAPC).
- Investigate any potential impact upon Mungullah Village in the event of proposing strategic industrial land in the locality (LG, DPI, Mungullah Community Aboriginal Corporation).

- Prepare an outline development plan to cater for the development of a strategic industrial estate (LG, WAPC, DoIR).

## 2.1.13 Recreation and cultural activities

### Planning objectives

**To provide sufficient recreational land to meet the needs of the present and future population of Carnarvon.**

**To facilitate the provision of recreation and cultural requirements to satisfy the needs of the Carnarvon indigenous and non-indigenous communities.**

The Massey Bay area is bounded by the boat harbour, HMAS Sydney Memorial Drive, Oyster Creek Road and the northern boundary of Crown Reserve 610 (Carnarvon Town Lot 343), which also is the southern boundary of the Massey Bay locality. It consists of heathland with saline mudflats along the coast and contains the Carnarvon racecourse and golf course with the balance of land in the precinct undeveloped, unallocated Crown land. Part of this land is zoned special residential, however the shire has identified a demand for equestrian uses and proposes to rezone this land to rural-residential to cater for the use.

Of particular note is the progress and significance of the Piyarli Yardi Aboriginal Heritage and Culture Centre, currently under construction in Carnarvon. This project is significant in the provision of cultural facilities for the regional Aboriginal population.

Draft TPS 12 proposes to reserve foreshore land and mangrove communities in the Babbage and Whitlock islands vicinity as parks and recreation.

The southern banks of the Gascoyne River offer an opportunity for passive recreation. Consideration of a shared cycle/pedestrian link within the reserve that accesses the town centre and Babbage and Whitlock islands may provide for local and tourist recreational opportunities in the future. Cycle/pedestrian path planning should also be considered through other residential areas of Carnarvon.

Mangrove communities within the boat harbour vicinity may be considered for reservation to protect the areas and offer limited recreational opportunities.

## Actions and guidelines

- Expedite the planning for development of cycle/pedestrian paths adjacent to the Gascoyne River, and throughout residential areas of Carnarvon linked to the town centre and Babbage and Whitlock islands (LG).
- Consider the long-term cultural and recreational needs of the Aboriginal community (DIA, LG).



## 2.1.14 Urban design and townscape

### Planning objectives

**To continue the streetscape landscaping project for Carnarvon to make the town more walkable, by the provision of shade trees, and beautify the town.**

**To promote the Morgantown to East Carnarvon streetscape landscaping to make this area more walkable, by the provision of shade trees, and beautify the town.**

In keeping with the goals of *Liveable neighbourhoods* the streetscape of Carnarvon should be made more walkable by provision of shade trees in public areas and along paths for pedestrians and to provide an attractive streetscape.

The Shire of Carnarvon has adopted urban design guidelines for future development within the town to be carried out in a co-ordinated, well-designed manner. The continued use of these guidelines will ensure a consistent approach to new development within the urban landscape.

Considerable interest has been shown in the utilisation and beautification of HMAS Sydney Memorial Drive as the primary entrance statement into Carnarvon. Further consultation and consideration as to the treatment of this road should occur to enable a well-designed entrance avenue and entry statement for the town.

As part of the effective implementation of the existing streetscape program in Carnarvon further research is required into the opportunities for grey water use in landscaping projects.

## Actions and guidelines

- Review the streetscape plan for Carnarvon to continue to provide guidance for future landscaping of the streetscape environment and for new development in terms of landscaping (LG).
- Develop HMAS Sydney Memorial Drive as the primary entrance to town and provide an entrance statement (LG, MRWA).
- Research opportunities for grey water use in urban landscaping (LG).

### 2.1.15 Tourism development

#### Planning objectives

**To encourage the development of tourism accommodation and uses on Babbage and Whitlock islands.**

**To encourage the development of larger-scale tourism development in Carnarvon to utilise the availability of appropriately zoned land and available infrastructure.**

Carnarvon, along with Exmouth, is promoted for development of tourism for the Ningaloo coast. For this reason, developers should be directed and encouraged to consider tourism opportunities within the townsite. Redevelopment of existing tourist accommodation also may provide for the variety of tourism opportunities sought in this region where tourism increasingly is becoming one of the primary economic growth features. Carnarvon should be marketed as a convenient base to access the many tourism attractions of the region.

The locality of Babbage and Whitlock islands has been promoted for some time as future tourism use land by the Shire of Carnarvon although to date, the only tourism accommodation in the locality is the Pelican Point Resort. LandCorp is currently undertaking preliminary feasibility studies into the provision of infrastructure to the site.

## Actions and guidelines

- Encourage tourism industry to locate tourism accommodation and opportunities in Carnarvon (LG, TWA).
- Prepare a local traffic study to consider potential transport access and needs associated with future tourism and residential development on Babbage and Whitlock islands (LG).
- Explore Babbage and Whitlock islands as significant tourism areas, including consideration of land tenure issues (LG, GDC).
- Explore funding opportunities to provide infrastructure relating to tourism development on Whitlock Island (LG).

### 2.1.16 Plantations

#### Planning objective

**To ensure the retention and protection of plantation areas as a land use from competing land uses.**

The majority of plantations are located either on the north or south banks of the Gascoyne River on land subject to severe flooding. The shire has recommended the retention of a minimum lot size of six hectares to protect the use. The future viability of plantation land should be protected through policy and

scheme provisions to ensure the retention of this land in its current use. Future planning for the Aboriginal aged care facility, located in this area, should take into consideration the primacy of this area for horticultural uses.

The Kingsford area, defined by Boundary Road, Gascoyne River, Bibbawarra Road, Boor and Robinson streets and North West Coastal Highway, contains a variety of uses, with plantation and low-density housing the main land uses. Some of this land is subject to flooding associated with the Gascoyne River, with floodways proposed to be delineated in draft TPS 12. Further investigation into the long-term use of this area is recommended.

This area comprises a special residential zoned estate on the north side of Boor Street, special rural housing along its western and eastern margins (within the existing floodways) and plantations (predominantly north of Robinson Street).



## Actions and guidelines

- Continue investigation into the opportunities for expansion of plantation areas (LG, DPI, WC).
- Assess the future potential land use of the Kingsford area (LG).
- Consider the long-term tenure of the Aboriginal aged care facility (LG, affected stakeholders).

## 2.1.17 Rural

### Planning objective

**To assess the opportunities and constraints of rural land for plantation, rural or special residential uses based on water availability, servicing and development constraints.**

The majority of the Brown's Range area has been classified as rural. This is due to the long term planning for the area not being finalised. For this reason the area has been identified as requiring further assessment prior to the

finalisation of long term planning. Matters requiring investigation include water availability, servicing constraints, and visual amenity as one of the two entrances to Carnarvon and the Ningaloo coast as well as distance from the Carnarvon town centre.

### Actions and guidelines

- Further detailed assessment based on opportunities and constraints is undertaken prior to the consideration of long term planning for Brown's Range (LG, NSDO, WAPC).



Figure 30: Exmouth structure plan



## 2.2 Exmouth structure plan

### 2.2.1 Introduction

Exmouth is a regional centre for the Gascoyne, with a particular focus as the northern tourist gateway to the Ningaloo coast.

The Exmouth structure plan identifies key land use planning objectives, actions and guidelines. These aim to guide the future growth and development of Exmouth for the following land uses:

- Residential (including Exmouth marina precinct)
- Future urban land (west of Exmouth marina)
- Special residential and rural-residential
- Australian Government land
- Commercial
- Industrial
- Recreation and open space (including cultural facilities)
- Tourism development

The structure plan also specifically addresses and recommends actions regarding urban design, townscape and tourism development potential of Exmouth. Within actions and guidelines the relevant agency or stakeholder to progress the matter is provided in brackets. Where abbreviations are used please refer to the Abbreviations list at the end of the document for the full name of the agency.

The Exmouth structure plan is a review of the structure plan detailed in the *Exmouth-*

*Learmonth (North West Cape) structure plan* which was released in 1998. Also it was informed by consultation associated with *Future directions: sustainable tourism and land use scenarios for the Carnarvon-Ningaloo coast*. For detail on background information and data for the structure plan, please refer to the *Exmouth-Learmonth (North West Cape) structure plan*. As with its predecessor, this structure plan presents a policy framework based on objectives, strategies, and guidelines and categories of land use. This structure plan should be read in conjunction with figure 30: Exmouth structure plan.

The structure plan for Exmouth is to be considered as preliminary work arising from the Ningaloo coast regional strategy Carnarvon to Exmouth process. The Shire of Exmouth is presently reviewing its *Town planning scheme 3 (TPS 3)* which will most likely lead to the development of a local planning strategy and potentially a new town planning scheme. The result of this will be another more extensive review of the Exmouth structure plan which should reflect the emerging and desired land use pattern, form and shape of Exmouth as it moves to a more sustainable future.



### 2.2.2 Exmouth

#### Planning objectives

**To provide for the orderly development of the Exmouth townsite.**

**Exmouth will cater for higher-order and higher-impact development, infrastructure and tourist facilities within the Ningaloo coast.**

Exmouth is the principal settlement of the North West Cape and one of only two significant centres of the Ningaloo coast. As a fundamental objective, the structure plan is seeking to consolidate urban activities within the Exmouth townsite, in order to capitalise on existing infrastructure and to enhance the range of services and opportunities within the urban area. Development outside the townsite should complement the existing settlement and should not rely on either the duplication or unnecessary expansion of existing services and facilities.

Exmouth is built directly upon the fragile karst system and therefore special consideration is required when contemplating development which may potentially affect this system. This includes waste disposal, road runoff, resource extraction and other matters which can impact upon the internationally significant subterranean fauna. A number of documents have been prepared to assist in the protection of the karst system. These include the EPA guidance document number 54 released in December 2003 titled *Consideration of subterranean fauna in groundwater and caves during environmental impact assessment in Western Australia*, position statement number one *Environmental protection of Cape Range province* released in December 1999, *Karst management consideration for the Cape Range karst province, Western Australia* released in March 1998 and *Guidelines for cave and karst protection* released in 1997. These and other relevant documents must be considered in the future planning of Exmouth.

The major constraint to urban development beyond 10 to 20 years is the limited supply of potable groundwater. In the short term, options such as water resource use efficiency and desalination are being examined by the Water and Rivers Commission (WRC) to more efficiently utilise existing resources. The availability of water however, is fundamental to the type and extent of future residential development for the North West Cape. If the population of Exmouth exceeds current forecasts it will be necessary to increase the level of research on the whole groundwater resource.

It should be noted that a native title claim has been lodged and registered under the *Native Title Act 1993* over specified lands within the Exmouth townsite. Therefore as part of the ongoing consideration of any development within the Exmouth townsite, consultation with relevant Aboriginal agencies is required to ensure compliance with Section 18 of the *Aboriginal Heritage Act 1972*.

## Actions and guidelines

- Examine options for water use efficiency and desalination as soon as possible (WRC, WC).
- Undertake and upgrade the level of research associated with the groundwater resource and any potential contamination to ensure environmental, social and economic objectives are met as soon as possible (WRC, WC, GDC).
- All future planning for Exmouth to consider the implications on the sensitive karst system and be guided by current and future research and guidelines on karst system management (LG, EPA).
- Ongoing consultation with relevant Aboriginal agencies as required by the *Aboriginal Heritage Act 1972* (all stakeholders).

### 2.2.3 Residential (including Exmouth marina precinct)

#### Planning objective

**To provide for sufficient and appropriately serviced land to accommodate future housing needs within physical and environmental constraints.**



The structure plan supports the continuation of urban development in a southerly direction within the existing townsite after all lots in the Skipjack Circle have been released. Expansion is proposed to be restricted to within the existing townsite boundary to avoid unnecessary expansion or duplication of existing infrastructure and services. The extension of residential development to the south largely is determined by existing constraints and the restricted capability of land to the north.

The Exmouth marina precinct will see the provision of 28 hectares of residential land, which at an R20 density will provide approximately 128 residential lots in the short term. Other components of the marina will be mixed use and potentially provide for an additional 80 residential lots with further residential land proposed in later stages.

Future growth of Exmouth should be integrated with the Exmouth marina precinct to provide continuity to the town's structure. Appropriate linkages should be developed between the existing town center and the marina precinct.

The structure plan proposes that future residential areas should be guided by the principles of *Liveable neighbourhoods* so as to provide a wide variety of housing and a sense of a community focused on walkable neighbourhoods. Its aim is to achieve better environments that are more sustainable, more liveable and more suited to the shape of the future community. It is proposed that future residential development be interspersed with either public open space or native vegetation greenways.

The structure plan identifies a sufficient supply of residential land within the Exmouth townsite to accommodate the anticipated population growth for the North West Cape. The high costs of providing services and the limited supply of potable water mean that care should be taken when planning for future growth in the town. In accepting the need to accommodate growth, the structure plan specifically does not provide for residential

development outside the existing boundary of the Exmouth townsite to avoid unnecessary extension of existing infrastructure such as water, power and sewerage and possible duplication of services already available within the town. The high costs of providing services and the environmental impacts of supplying potable water means that care should be taken when planning for future growth in the town whilst retaining the primacy of Exmouth as a regional centre.

The structure plan allocates residential land for a minimum permanent population of approximately 5200 persons (excluding rural-residential areas). This exceeds the estimated maximum permanent population of 3800 to the year 2027. In addition, long-term urban expansion can occur on land immediately south of the existing urban centre within the townsite boundary, east of Murat Road. Some urban consolidation within the established parts of the town also will provide opportunities for increased housing supply and choice.

## 2.2.4 Future urban land (west of Exmouth marina)

### Planning objective

**To ensure appropriate linkages between the Exmouth marina precinct and the future urban land on the west side of Murat Road.**

The future urban land on the west side of Murat Road, south of the existing town development is the largest piece of undeveloped land in Exmouth with an area of more than 160 hectares. Presently it is zoned residential development under *Shire of Exmouth TPS 3*. Further land capability assessment is required prior to consideration of subdivision. One of the main concerns is



flooding associated with run-off from Cape Range and in particular, potential impacts of storm/cyclone events. Anecdotal evidence suggests that the northern section of this land is most likely to be inundated in a storm event. Further investigation is required to determine the appropriate buffer distances between the industrial uses in the Welch Street industrial area and potential residential uses to the north and south.

As this land is adjacent to the Exmouth marina, connectivity between the two parcels of land is essential to the future planning of Exmouth as the majority of its future growth will be in this locality as the north is constrained by the Australian Government land. In order to ensure connectivity, it is recommended that any future proposals on land west of the Exmouth marina ensure a continuation of road access across Murat Road in a linear manner. This will provide efficient pedestrian and vehicular access to the mixed use component of the marina development for the likely residential development on the west of Murat Road.

Consideration should be given to the provision of affordable residential land to enable this land, in the long term, to provide variety and address the likelihood of residential land within the Exmouth marina precinct attracting high prices.

## Actions and guidelines

- Focus all new residential development on the Exmouth townsite to avoid unnecessary expansion and duplication of infrastructure such as water, power and sewerage (DPI, LG).
- Land capability assessment of the future urban land west of Murat Road, adjacent to the Exmouth marina, is required prior to consideration of subdivision to ensure that flooding associated with run-off from Cape Range and impacts of storm/cyclone events are addressed (LG, DPI).
- Examine opportunities for higher-density development on vacant lots or infill development within the existing residential areas of Exmouth (LG, DPI).
- Develop the Exmouth marina precinct residential component in accordance with any conditions contained in agreements between the state government and a prospective developer (LandCorp, LG, DPI, GDC, DoIR, WAPC).
- Ensure any proposed development or subdivision of land west of the Exmouth marina incorporates connectivity with the marina site to establish a relationship between the neighbouring sites (LG, DPI).
- Consider required buffer distances from the existing and proposed extension to the Welch Street industrial area in determining the areas for future residential development (LG, DPI).
- Restrict residential development to within the existing Exmouth townsite boundary (LG, DPI).
- Encourage future subdivision design to reflect the function of Exmouth as a coastal Western Australian community within the context of *Liveable neighbourhoods* (LG, DPI).
- Ensure future urban development acknowledges physical characteristics as identified in the land capability/suitability assessment with appropriate development techniques to be applied (LG, DPI).
- Base any development within the townsite on appropriate water-sensitive design criteria suited to a karst environment, to minimise water requirements and manage drainage issues and impacts on karst and the associated stygofauna (LG, DoE, proponent, WRC, DPI, GDC).
- Ensure subdivisions continue to provide a geotechnical assessment to support any proposed new development (LG, DoE, DPI, proponent).

## 2.2.5 Special residential and rural-residential

### Planning objectives

**To provide appropriately located special residential/rural-residential uses, within the Exmouth townsite, connected to services whenever possible.**

The arid and fragile nature of the North West Cape means that it has a limited capacity to support larger and remote lots. The structure plan therefore proposes only limited opportunities for the expansion of this type of development.

It is recommended there be limited expansion of the existing pocket of rural-residential lots on Heron Way on the land to the south of the townsite. The land is considered appropriate for rural-residential as:

- high-quality housing development has occurred in this area since the land was sold in freehold;
- it is currently serviced sealed roads and with reticulated water and power; and
- it is in close proximity to the existing development within the townsite.

An outline development plan (ODP) should be prepared for the land south of the marina. The uses proposed should be integrated with and complementary to the proposed marina uses. The ODP should allow for staged development of the area from an interim use of special residential to its proposed long-term residential use. The ODP should address a range of issues including providing for a gradation of lots sizes from one hectare in the south to 2000 m<sup>2</sup> for the land adjoining the marina subject to land capability, building envelope definition, service infrastructure and possible options for staged subdivision to its long-term residential use upon the availability of service infrastructure.

### Actions and guidelines

- Provide for a minimum lot size of one hectare in the designated rural-residential area on Heron Way, with a requirement that all lots to be connected to reticulated water and power (LG, WC, DPI, WRC, WP).

## 2.2.6 Australian Government land

### Planning objective

**To locate on Australian Government land to the north of the townsite, activities that do not conflict with the intent of the Exmouth structure plan, the primacy of the Exmouth townsite and Department of Defence activities.**

This area contains the most capable and suitable land for urban development close to the Exmouth townsite. The Australian Government is committed to the continued operation of the H.E. Holt Naval Communications Station and has no intention of transferring this land to the state. There are opportunities for the lease of some parcels of the land for activities that would not affect the station's operations. This structure plan however supports the re-use of existing buildings on Australian Government land, but does not support the expansion of activities which would be located more appropriately within the Exmouth townsite.

In addition, the relocation of the wastewater treatment plant to the southern portion of the Australian Government land is supported and is being pursued by the Water Corporation.

## Actions and guidelines

- Support best use of existing buildings and infrastructure without competing with the primacy of Exmouth townsite (Defence).
- Discourage expansion for non-defence activities at the naval communications station (Defence, LG, GDC, DPI).
- Promote and pursue as a high priority the relocation of the wastewater treatment plant to the naval communications station land north of Willersdorf Road, subject to Department of Defence and the necessary environmental approvals (WC, Defence, LG, DoE, DPI).
- Encourage Department of Defence to normalise the non-defence land uses by cooperating with the local authority to facilitate such areas becoming rateable land and fully liable to all state and local government legislative requirements. (LG, Defence, DPI).

1.97 m<sup>2</sup>/person (surveyed figure estimate, Shire of Exmouth), indicate a retail floor space of 7500 m<sup>2</sup> to 8000 m<sup>2</sup> will be required by the year 2027.

The town centre currently has 5170 m<sup>2</sup> floor space and within the land zoned town centre (including the parkland on Maidstone Crescent), has capacity at least to double this amount.

Although the figures indicate adequate land for town centre expansion, there is demand for use of land within the industrial area for commercial uses. This indicates that although the land in the town centre is zoned appropriately, it is not necessarily available for development. This is due to commercial zoned land being used for civic and recreational purposes, such as the shire offices, parks and public swimming pool. The Shire of Exmouth should be encouraged to assess its long-term needs against the demand for additional commercial land within the town centre.

## 2.2.7 Commercial

### Planning objective

**To provide adequate land, appropriately located and serviced, for the commercial needs of Exmouth.**

### Town Centre

The town centre, bounded by Murat Road, Maidstone Crescent, Learmonth and Kennedy streets, currently is the main focus for the sub-region in terms of shopping and commercial activity.

Retail floor space requirements based on an estimated population of 3800 for 2027 and the current ratio of floor space provision of

### Exmouth marina precinct

The Exmouth marina development will provide opportunities for shopping and commercial activity. However, the town centre should be retained as the major centre for this activity. It is likely that some commercial and shopping activity, particularly for tourists, ie tourism operators, tourist retail outlets, restaurants and cafes, will seek to locate at the marina. Therefore, with the aim of retaining the commercial focus on Exmouth town centre, it is important that it continues to be promoted in terms of retail and commercial activity. To assist in this, no large-scale commercial land uses, such as a supermarket or large format retail developments, should be considered for the marina.

## Future commercial land

In the long term, beyond the 30 year time frame of this strategy, consideration should be given to whether a western extension of the mixed use commercial area across Murat Road could facilitate a new linear strip town centre should Exmouth outgrow its existing town centre. This should be done through a local commercial strategy that recognises the future residential land requirements/demand for south Exmouth. The reason for this is that the available undeveloped land in south Exmouth will rival existing residential land to the north and so may require a similar amount of retail and commercial services.

In terms of land supply, there appears to be adequate land to cater for growth at least for the next 30 years. In addition, should the demand for commercial land exceed availability, the Shire of Exmouth could consider relocating the existing swimming pool from council land in the town centre to the recreation precinct east of the town centre to enable expansion.



## Actions and guidelines

- Locate all major commercial development, ie retail, office and civic, within the Exmouth town centre (LG, DPI).
- Do not permit any large scale commercial development within the Exmouth marina precinct (LG, DPI).
- Identify and facilitate development of land available for commercial uses within the townsite (LG, DPI).
- Prepare a local commercial strategy to assess future commercial needs and the relationship between the town centre and mixed use component of the Exmouth marina to identify the need for the commercial land (LG, DPI).

## 2.2.8 Industrial

### Planning objectives

**To provide adequate land, appropriately located and serviced, for a range of industrial uses.**

**To minimise the impact on the natural environment by future industrial development.**

### Welch Street industrial area

The industrial land within Exmouth is appropriate for low-impact industrial uses and currently has buffers identified to adjacent future residential development land. Although this buffer of recreation and open space land exists, caution is warranted when considering potential uses.

The new gas-fired power station is currently proposed to be located in the south-western portion of the existing industrial land in Exmouth. Consideration of the final size of this buffer will require further assessment especially in regard to the residentially zoned land north and south of the site.

It is recommended that a portion of the existing industrial area in the Exmouth townsite be retained and expanded to the land immediately south and adjacent to Welch Street for industrial activities which:

- depend on convenient access;
- do not require a large site;
- do not require a significant buffer distance separation from sensitive uses



as recommended by the Environmental Protection Authority (EPA); and

- are part of the business fabric of the townsite.

Provision has been made for an industrial area outside the townsite for those industries requiring a large site, and for which the EPA guidelines recommend a large buffer distance from sensitive uses.

### **Mixed use light industrial and commercial**

The area bounded by Murat Road, Nimitz, Reid and Welch streets will be designated mixed use (light industrial and commercial) and will form the interface between the Welch Street industrial area, town center and the marina village development. The proposed mixed use area is more compatible with the uses developing on the land surrounding this area which predominantly are residential in nature.

Given that this area will gain more prominence as the entrance into Exmouth townsite, it is considered it should be redeveloped and appropriate landscape buffers provided to create a pleasing entry statement, and should be integrated with the Exmouth marina precinct development.

### **Investigation area**

Lot 51 Minilya - Exmouth Road was identified as an industrial area to accommodate anticipated future industrial growth for Exmouth in the *Exmouth-Learmonth (North West Cape) structure plan*. Due to changing circumstances, the need for the strategic industrial site has been questioned.

The site is approximately eight kilometres south of Exmouth town centre. When the land was originally zoned it was for the purpose of providing an industrial site to specifically accommodate potential general industrial uses such as a gas fired power station, heavy transport depot, concrete batching plant,

offshore storage facilities for the hydrocarbon industry, fish processing and handling, warehousing and limestone related industries. A restrictive covenant was placed on the title to ensure the land was used for these limited industrial purposes only.

Recently, the owner of the strategic industrial land proposed an amendment to allow use of the land as a Composite area, accommodating industrial and residential uses on defined building envelopes within each lot. The Western Australian Planning Commission resolved not to support the amendment for a number of reasons, principally that the proposed rezoning did not address a number of significant strategic issues for Exmouth. Generally the commission supports the retention of already identified land for strategic industrial purposes and does not support the co-location of industrial and residential uses.

Lot 51 was zoned to accommodate the long-term potential for limited local strategic industrial uses to be removed from within the Exmouth townsite. The rezoning of the site should be subject to the outcomes of an industrial land needs study for industrial uses requiring buffering in the Exmouth area and an assessment of opportunities within Exmouth to accommodate such uses by expanding existing areas. If these studies find that the land is not required for industrial purposes a further review as to the suitability of this land for other uses should be completed. Due to the objective of focusing all residential development within Carnarvon and Exmouth townsites residential development on this land is not supported, however appropriately serviced larger rural residential or low-impact tourism uses may be considered.

Any future development should be based on water-sensitive design criteria suited to a karst environment to minimise water requirements, and to manage drainage issues and impacts on karst and associated stygofauna.



## Actions and guidelines

- Rezone land adjacent and south of Welch Street Industrial area to Industry to facilitate additional lots along the Welch Street frontage (LG, WAPC).
- Prepare an assessment of the demand for land to provide adequately for general industry and industries requiring buffering in the Exmouth area, including an assessment of existing opportunities within and adjoining the Welch Street industrial area to cater for these industrial uses (LG, DPI).
- Subject to the outcomes of the review of the industrial lands needs study, identify any suitable alternative uses for Lot 51 Minilya - Exmouth Road (LG, DPI, landowner).
- Ensure the proposed development of industrial land incorporates appropriate water-sensitive design criteria suited to a karst environment to minimise water requirements, manage drainage issues and impacts on karst and associated stygofauna (LG, DoE, proponent, WRC).
- Address limitations to development as outlined in the land capability/suitability assessment as part of any proposed industrial development (LG, DPI).

## 2.2.9

### Recreation and open space (including cultural facilities)

#### Planning objective

**To provide adequate appropriately located land for the recreational, community and cultural needs of Exmouth.**

**To protect the habitat of the Cameron's Cave Pseudoscorpion in the vicinity of Preston Street.**

The provision of recreation areas and cultural facilities increasingly becomes important as a town grows. Recreation facilities and open space currently are well provided for in Exmouth.

A sporting, recreation and public open space precinct has been developed on the east side of Murat Road and in the Exmouth town centre. This area should continue to accommodate sporting and recreation uses given its central location. In addition, the development of cultural facilities such as theatres, cinemas or appropriate education facilities should be encouraged.

#### Cameron's Cave

This highly valued environmental site is located at the northern end of Heron Way and is adjacent to proposed rural-residential land. It is the habitat of the Cameron's Cave Pseudoscorpion (*Hyella humphreysi*). This arachnid is declared fauna that is rare or likely to become extinct and is listed in schedule 1 of the *Wildlife conservation (specially protected fauna) notice 2003* under the *Wildlife Conservation Act 1950* and requires protection through legislation.

For this reason Cameron's Cave requires protection, including a buffer, as it is the only known habitat of the Cameron's Cave Pseudoscorpion. The *Exmouth-Learmonth*

*(North West Cape) structure plan* proposed a racecourse and rural-residential uses over this land however with this new information, it is appropriate that the Cameron's Cave site be protected from potential development and site impacts.

The protection area has been defined as being that area overlying the known extent of the cave and associated sinkholes, in keeping with the North West Cape Karst Management Advisory Committee's recommendation of a 200 m buffer to any surrounding development. This buffer is reflected in the Exmouth structure plan.

It also should be noted that this site is a registered Aboriginal heritage site.

## **Actions and guidelines**

- Ensure proposed residential areas incorporate adequate provision of public open space or native landscaped areas (LG, DPI).
- Prepare a recreation and cultural needs strategy for Exmouth to allocate appropriate recreation, community and cultural facilities (LG).
- Provide appropriate access to coastal areas from the townsite through the recreation precinct (LG).
- Provide appropriate protection to Cameron's Cave to ensure protection of the habitat of the Cameron's Cave Pseudoscorpion by zoning the buffer area recreation and open space (LG, WAPC).

## **2.2.10 Urban design and townscape**

### **Planning objectives**

**To identify and agree to a defined character for Exmouth in its existing and future role as a regional tourism and service centre, bearing in mind the environmental and aesthetic fragility of the surrounding area.**

**To review design guidelines, in support of the identified and agreed character, inspire and guide all future development in the town, and encourage all development to be environmentally and climatically responsive and sustainable.**

**Where deemed necessary development activities in the town shall be in harmony with and minimise the visual and physical intrusiveness within and upon the surrounding natural environment in terms of colours, materials, volume and scale.**

The Shire of Exmouth prepared and adopted a Townscape Plan in 2001. The plan, currently being implemented, includes the adoption of design guidelines and a disability plan that is also being implemented.

## **Actions and guidelines**

- Continue implementation of the townscape plan for the Exmouth townsite (LG, DPI).
- Continue implementation of town centre plan to address car parking, pedestrian and traffic movement (LG, DPI).

## 2.2.11 Tourism development

### Planning objective

**To appropriately locate larger-scale tourism development in serviced areas and provide opportunities for a range of accommodation types.**

To take advantage of existing infrastructure and services, and proximity to Learmonth airport, the location of tourism development on the North West Cape is preferred within, or close to, the existing Exmouth urban settlement. Exmouth is a suitable base for travel throughout the region given its access to major tourist routes.

The structure plan supports the development of large-scale tourism infrastructure and accommodation within the Exmouth townsite. Sites along the west coast of the North West Cape are considered less desirable for large-scale development and should be considered only for day visits or low-impact/small-scale accommodation facilities as detailed in the Coastal tourism framework.

The Minilya - Exmouth and Murat roads are an essential part of the service infrastructure needed to support the tourism industry. A corridor between Learmonth airport and Exmouth townsite, where landscaping and built structures are managed in accordance with a visual amenity plan, should be defined. This visual amenity corridor should cover an area approximately 100 m on each side of the road.

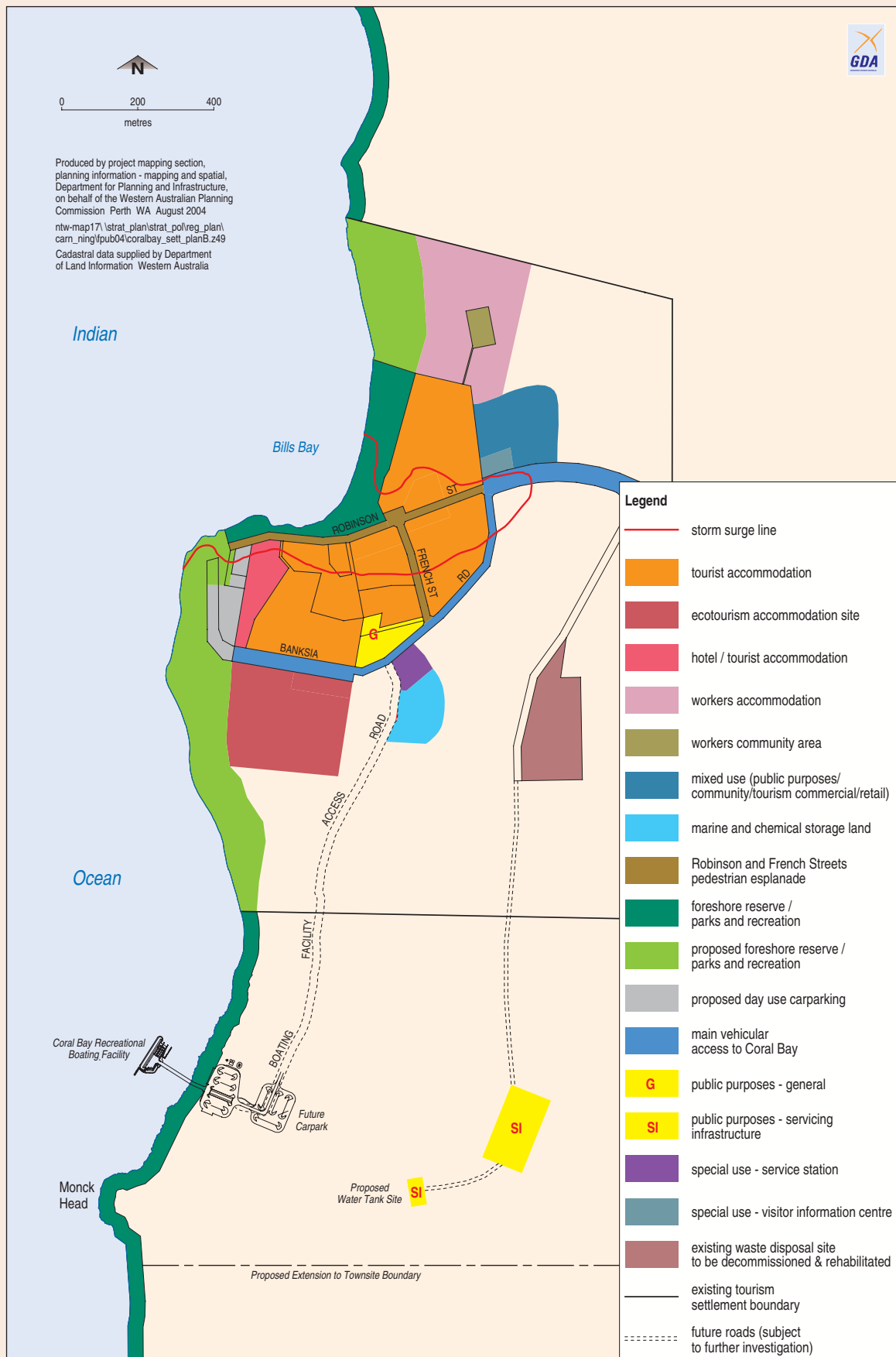
Further investigation is required to assist in the effective planning for Exmouth to ensure that the townsite sustainably can cater for the expected increase in tourist numbers over the next 30 years. This should include research into the constraints on future expansion of tourism uses due to confined infrastructure servicing, especially in relation to water availability.

### Actions and guidelines

- Encourage larger-scale tourism development such as hotels, motels and resorts to locate within the Exmouth townsite at a scale and design which accords with the townscape and landscape plans for Exmouth (LG, TWA, DPI, WAPC).
- Investigate options for removing impediments to the development of existing tourism zoned land for the purpose of tourism development (LG, WAPC, DPI, TWA).
- The proposed review of *Shire of Exmouth TPS 3* and likely preparation of a local planning strategy should include consideration of existing and future needs for tourism zoned land as well as any impediments to the development of existing tourism land (LG, TWA).
- Investigate further infrastructure needs of Exmouth to ensure that it can sustainably cater for expected increases in tourist numbers and accommodation (LG, TWA, DPI, WC, WRC, WP, OE).
- Address limitations to development as outlined in the land capability/suitability assessment as part of any proposed tourism development (LG, DPI).
- Prepare foreshore management plans in association with any tourism development in accordance with WAPC policy (LG, DPI).
- Continue to develop sites along the beachfront for recreation, eg barbecue and picnic facilities, in settings with natural vegetation and landscaped areas (LG).
- Rationalise and upgrade access and parking facilities to the town beaches (LG).
- Prepare a visual amenity policy to control landscaping and building development on the land each side of the Minilya - Exmouth and Murat roads between the Learmonth airport and Exmouth townsite (LG, DPI).



Figure 31: Coral Bay structure plan



## 2.3 Coral Bay settlement plan

### 2.3.1 Introduction

The Coral Bay settlement plan addresses planning issues in Coral Bay. It consists of three parts, background, the settlement plan and planning mechanisms to implement the Coral Bay settlement plan.

The background section describes the physical environment of Coral Bay, the history of development and previous planning for Coral Bay.

The settlement plan addresses planning and land use issues and will guide land use and infrastructure co-ordination for the next 30 years. This includes future planning to retain the unique Coral Bay experience, address the size of Coral Bay and address issues relating to day users.

A map of the proposed settlement plan is associated with this section (refer to figure 31), and the text provides a description of the intention of each land use area identified in the settlement plan map. Under each topic discussed in the settlement plan is a planning objective for the category. At the end of each topic is a list of actions and guidelines to be completed to achieve the planning objective. Within the actions and guidelines the relevant agency or stakeholder to progress the matter is provided in brackets. Where abbreviations are used please refer to the Abbreviations list at the end of the document for the full name of the agency.

The following land use issues are addressed in the settlement plan:

- Robinson Street pedestrian mall
- road layout, access and parking
- workers' accommodation
- freehold or leasehold residential land
- subdivision of land
- tourist accommodation
- ecotourism accommodation site
- mixed use (public purposes/community/tourism commercial/retail) area
- service station
- marine and chemical storage land
- foreshore reserves
- public purposes land
- visitor information centre
- decommissioning of the existing waste disposal site
- Lot 54 Robinson Street
- Coral Bay recreational boating facility
- airstrip.



The final section, planning mechanisms to implement the Coral Bay settlement plan, identifies the mechanisms for development control for Coral Bay to satisfy the planning objectives of the settlement plan.

### 2.3.2 Background

#### Physical environment

Coral Bay is the closest and most heavily developed access point to Ningaloo Reef. It is built on the southern section of Bills Bay, adjacent to the point, in an area partly prone to flooding in storm and cyclonic events. Located within an undulating landscape of swales and dunes shaped by south-westerly

wind patterns, the town is adjacent to a sandy beach, protected by a vegetated dune point. Bills Bay extends to Point Maud in the north along a sandy beach and rock platform, and is seasonally frequented by Blacktip Reef Sharks.

To the south are sandy beaches, rocky platforms and large foredunes under pressure due to four-wheel drive access. A large variety of coral and fish species are found in close proximity to the beaches of Coral Bay and turtles nest at Mauds Landing. Marine life, including whale sharks and manta rays, add to the many attractions for tourists.

Impact on coral health has been recorded adjacent to Coral Bay, with coral death attributed largely to natural causes. The region is highly regarded for its biodiversity, and natural and recreation values.

Inland of Coral Bay are working pastoral stations with varying remnant vegetation cover and large amounts of introduced grass species, buffel grass in particular. Beach access along the coast is limited by the coastal environment and pastoral station operation.

An Aboriginal heritage site has been recorded in the eastern section of Coral Bay townsite (South Mauds Landing) near the Coral Bay access road. At least six other Aboriginal heritage sites are located in close proximity to Coral Bay within Cardabia Station.

## Development at Coral Bay

Coral Bay has developed as a tourism settlement in a relatively ad hoc manner since the mid-1900s. It is under increasing environmental pressure through tourist visitation. Throughout the short history of Coral Bay, a limited number of private freehold and leasehold lots have been made available and are currently held by four landowners. Although a range of tourist accommodation has been developed, adequate dedicated workers' accommodation has not been provided.

Private landowners and lessees have provided their own power supply through the use of diesel generators. Water is extracted from the highly saline Birdrong Aquifer, via deep artesian bores and brought to the surface at 70°C. The water has to be treated by reverse osmosis desalination and cooling before it is suitable for human use. This aquifer also supplies Denham's water supply. A combination of on-site effluent disposal using septic tanks, leach drains and evaporation ponds currently deals with human effluent at Coral Bay, although the state government has installed sewage treatment facilities.

Tourist accommodation in Coral Bay gradually has increased and currently includes Bayview Holiday Village Caravan Park, Ningaloo Reef Resort, People's Park Caravan Village and most recently the Ningaloo Club Backpacker's.

In addition to tourist accommodation, approximately 25 other tourism businesses now base their operations at Coral Bay, employing at least 150 staff.

## Previous planning for Coral Bay

Planning and development control currently is exercised through the *Shire of Carnarvon Town Planning Scheme 11 (Shire of Carnarvon TPS 11)*, which has its offices in Carnarvon, approximately 234 km south of Coral Bay.

The Shire originally opposed residential land release in Coral Bay due to the absence of a town water supply in 1973.

The *Coral Bay structure plan*, released in 1992, estimated that peak holiday populations were in the vicinity of 1200 to 2500 people. It did not recommend a population capacity for Coral Bay although it recognised that the very environment that attracts visitors was at risk of deterioration through over use.

The *Coral Bay task force - report on infrastructure requirements for Coral Bay* was completed in 1996. It recommended a low scale of infrastructure for Coral Bay to service

a small tourism settlement (approximately 3000 overnight and day visitors with no detail provided on working population). It also recommended a design capacity of 3500 to 4000 people for future infrastructure needs for limited expansion and potential increase in day visitor numbers.

The Shire of Carnarvon amended its town planning scheme in May 1998 to prevent any further development in Coral Bay, other than minor alterations to existing uses/developments, until connection to a public water supply and public effluent disposal facility to meet the requirements of the council and the Health Department of Western Australia. The amendment also required that all land use and development applications were to be assessed in the context of a settlement plan.

The *Coral Bay settlement plan* was released in January 1998. It suggested the consideration of the following factors in establishing an ultimate size for Coral Bay:

- quality of services and infrastructure to be provided to new and existing developments;
- extent of, and commitment toward, environmental management, conservation and rehabilitation;
- form, quality and density of accommodation required; and
- extent and nature of any adjacent development.

In recognition of the lack of information to address these factors, the settlement plan recommended that the settlement size should be limited and provide accommodation for 2500 to 3000 visitors. It also suggested that two new tourism sites for between 500 and 1000 visitors could be contemplated in the future depending on environmental acceptability. It recognised the demand for efficient and comfortable workers'

accommodation although it did not specify what population it should accommodate. It did however list the total number of workers for the settlement at the time at 90 consisting of 77 permanent workers and 13 casual workers.

The plan stated that 1848 beds had been approved within Coral Bay under the provisions of the town planning scheme, but a current, complete and accurate record of beds/accommodation should be compiled to confirm the current actual accommodation capacity at Coral Bay and secure the future planning of the tourism settlement.

In recent years, the only new accommodation developed in Coral Bay has been the Ningaloo Club Backpacker's, which was approved on the basis that the equivalent number of beds were to be removed from a related accommodation site within the settlement.

Existing workers' accommodation has developed haphazardly with a significant number

of substandard structures contributing to undesirable living conditions for workers.

The Shire of Carnarvon has prepared draft Town Planning Scheme 12 (draft TPS 12), which has not yet been advertised for public comment.

## Guiding principles

As detailed in *Future directions: sustainable tourism and land use scenarios for the Carnarvon-Ningaloo coast* (July 2003), the Ningaloo coast regional strategy Carnarvon to Exmouth has a number of guiding principles to be considered in the planning for tourism and other uses in the study area. These guiding principles include sustainable development, community aspirations, Aboriginal heritage, economic development,





interdependence, limits of acceptable change, precautionary principle, cumulative impacts, and protection of high conservation values, remoteness values and biodiversity (detailed in part 1.1).

Community aspirations include the desired outcomes for Coral Bay. In conjunction with limits of acceptable change, it is recognised that visitor experience is an essential element of future planning for the settlement. Many visitors have little need for motorised transport once in the settlement and this is a part of that experience, along with the low scale of development, feeling a part of a small, friendly community, getting to know the visitor next door and seeing familiar faces in the street.

The precautionary principle recognises the need to prevent development if certainty does not exist in regard to its potential impact. Cumulative impacts are a major threat to the settlement with minor development able to be approved without a co-ordinated approach to the settlement's future.

## Actions and guidelines

- That a monitoring and auditing strategy be prepared for Coral Bay which includes environmental, social and economic indicators (NSDO).

### 2.3.3 Settlement plan

This settlement plan for Coral Bay will guide land use and infrastructure co-ordination for the next 30 years. This text should be read in conjunction with figure 31: Coral Bay settlement plan. The settlement plan includes minor changes to the plan detailed in the draft Carnarvon-Ningaloo coast regional strategy. The modifications to the plan are the result of

public consultation, with the most significant changes listed below:

- retain a minimum of 50 per cent of tourist accommodation at Coral Bay for camping and caravanning;
- no new development within the storm surge area;
- mixed use area to cater for government offices, community needs and any potential future expansion of tourism commercial/retail uses;
- new recommended sites for the relocation of service station and marine and chemical storage uses; and
- option for emergency and minor recreational boating repairs to either the service station site or the marine and chemical storage site.

The settlement plan is based upon currently available information however it is recommended that the following studies be completed/updated to provide confirmation and direction for the further detailed planning of Coral Bay:

- storm surge study;
- nutrient and drainage management plan;
- tourist accommodation inventory;
- local tourism planning strategy;
- local commercial strategy;
- traffic, access, permeability and transport study (including process for pedestrianisation of Robinson Street); and
- accommodation needs of workers at Coral Bay.

## Planning to retain the Coral Bay experience

### Principal planning objective

Coral Bay shall continue to be an attractive destination for tourists and visitors seeking to experience the natural features of the Ningaloo Reef and the remote holiday atmosphere of Coral Bay through improved sustainable tourism practices.

Coral Bay is an exceptional environment that is recognised as an icon for tourism, not only in Western Australia but also throughout the world. Ensuring the retention of the character and experience that attracts people to Coral Bay is an overarching element of this settlement plan. The main challenge however is to protect and enhance the environment of Coral Bay in a sustainable manner whilst retaining the character and natural features that attract tourists and visitors. This will ensure the continued enjoyment of one of Western Australia's key environmental and tourism assets for future generations to enjoy.



### Actions and guidelines

- Ensure that all future planning, including development proposals, continues to protect and enhance the natural environment of Coral Bay whilst retaining the character and natural features that attract tourists and visitors (NSDO).

## Coral Bay size

### Planning objective

To ensure that over the next 30 years, expansion of Coral Bay is limited to a total of 3600 overnight visitors (tourists), accommodation for 400 semi-permanent workers, and include facilities to cater for 500 day visitors in a co-ordinated and staged manner.

The maximum size specified for Coral Bay should be considered in the context of the Coastal tourism framework. Although this settlement plan will ultimately set a capped population for Coral Bay, the tourism settlement should not be looked at in isolation but as a part of the Ningaloo coast. This should be both in terms of provision of variety and form of tourism accommodation and overall overnight visitor beds on the Ningaloo coast.

Coral Bay provides one of a variety of visitor experiences available on the Ningaloo coast. Tourism, minor tourism and ecolodge nodes, coastal and dispersed camping areas and day use sites, all provide a range of tourism to meet an assortment of visitor experiences. Likewise, Coral Bay provides one of a variety of choices for visitors available on the Ningaloo coast, including Carnarvon, Exmouth and existing and proposed coastal tourism nodes.

The 2001 Australian Bureau of Statistics Census recorded 247 permanent residents in Coral Bay. At the time of preparation of this document, the settlement's semi-permanent population was estimated at more than 150 people, according to an informal survey completed by business operators.

Tourist numbers are increasing with a continuing trend for high winter visitation, especially during the July school holidays, as

well as the traditional Christmas and Easter holiday periods. A further trend of incremental visitation all year round has been demonstrated in recent years, and is increasing steadily with the normally quieter, non-peak periods in the spring and summer months now becoming busy due to increased numbers of international tourists, backpackers and small groups, prepared to deal with the hot summer temperatures of the region.

This is contributing to a rise in year-round servicing requirements of water consumption, power usage and effluent disposal. Extreme peak periods have seen estimates of up to 6000 visitors trying to find a bed in the small coastal development.

Protection of this region is supported by the fact that Ningaloo Reef is the only fringing coral reef in Australia. Its habitat is formed due to the sensitive relationship between the northward-flowing Ningaloo Current and the southward-flowing Leeuwin Current. It is home to rare and significant species. This rarity continues beyond the coast through the intricate karst system to the north of Coral Bay.

Consideration of these guiding principles, previous public consultation, environmental uncertainty and the desire to retain a degree of a remote natural visitor experience provide strong grounds to recommend that expansion of tourist accommodation in Coral Bay be capped appropriately. The settlement should however be serviced adequately to address existing peak visitation pressures.

The state government is currently installing sewerage infrastructure to service Coral Bay. The treatment facility immediately will cater for 2800 people and has the potential for future expansion to cater for 4000 people, consistent with previous studies and carrying capacity recommendations.

Guided by the various public consultations undertaken through the release of *Future directions: sustainable tourism and land use scenarios of the Carnarvon-Ningaloo coast* and the preparation of the Ningaloo coast regional

strategy Carnarvon to Exmouth, minimal growth is proposed for Coral Bay. Over the next 30 years, it is recommended that the settlement cater for a maximum of 3600 overnight visitors in a variety of short-stay tourist accommodation types. Accommodation for up to 400 semi-permanent workers to service the settlement is recommended which will result in the capping of Coral Bay to a maximum overnight accommodation capacity of 4000 people.

This limited growth is recommended in an attempt to cater for an expected increase in the number of international, intrastate and interstate tourists. Other aspects of the Ningaloo coast regional strategy Carnarvon to Exmouth recommend dispersed tourism nodes of varying sizes and type to address the expected continued popularity of the Ningaloo coast as a holiday destination.

## **Actions and guidelines**

- That all future planning for Coral Bay include consideration of the intention to limit growth of the settlement to 3600 overnight visitors (tourists) and 400 semi-permanent workers (NSDO).

## **Day users**

### **Planning objective**

**To cater sustainably for the growing number of day visitors to Coral Bay to a maximum of 500.**

In addition to overnight visitors, future planning for the settlement shall cater appropriately for up to 500 day visitors at any one time, through open pedestrian areas, day use car parking, and public conveniences. As growth of overnight accommodation within the settlement is to be capped, it is recognised that added pressure from day visitation will occur in the future. Day visitors to Coral Bay will utilise the same environment, commercial/retail outlets, tourism businesses and services as overnight visitors, however



will stay overnight at Carnarvon, Exmouth or at any of the other existing and proposed tourism nodes within the region. Additional parking for day visitors is proposed at the western end of Banksia Road adjacent to Bills Bay. The further provision of day use facilities such as additional public toilets, possibly as part of the proposed day use car park at the western end of Banksia Road will require additional consideration.

## Actions and guidelines

- That all future planning for Coral Bay recognises and caters for the needs of 500 day use visitors in a planned and orderly manner (NSDO, CALM, LG).

## Robinson Street pedestrian mall

### Planning objective

**To provide a shaded, safe, walkable environment for Coral Bay visitors and workers along with passive recreation opportunities on Robinson and French streets.**

Robinson Street is Coral Bay's main thoroughfare, running from the entrance to Coral Bay to the southern end of Bills Bay. It currently is the main vehicular access to accommodation, boat launching and other tourism services offered in the settlement as well as pedestrian access to Bills Bay, accommodation, retail businesses and tourism operations that line the road.

The conflict between vehicles and pedestrians on Robinson Street has been recognised in previous studies. A lack of land adjacent to the foreshore conservation reserve for passive recreation also has been identified through public consultation. If traffic were removed from Robinson Street, the entire road reserve could be redesigned for passive recreation for

visitors and workers and provide a pedestrian link from one end of the settlement to the other, a short distance of approximately 800 m. Some access may be required along French and Robinson streets to cater for servicing requirements of existing businesses although current lot layout and land ownership allows for Banksia Road access to all land south of Robinson Street. This landscaped, pedestrian-oriented space could be utilised for community activities as well as providing easy pedestrian access from one end of the settlement to the other.

Other government initiatives will lead to the removal of the majority of boating traffic from Bills Bay to the Coral Bay recreational boating facility at Monck Head. This will remove the requirement for boat launching directly into Bills Bay via Robinson Street and result in the removal of motor vehicles and boat trailers from the Coral Bay beach. Demand for an additional toilet block adjacent to the proposed day use car park also should be considered.



One of the main constraints to the pedestrianisation of Robinson Street is the decommissioning of the existing service station located on Lot 4 Robinson Street. The draft strategy for public consultation recognised this and suggested that a possible incentive would be to offer an alternative service station site to the operator of the existing service station. The existing operator has indicated preliminary support for this to occur (refer to service station section).

## Actions and guidelines

- That a strategy be prepared to implement the coordinated pedestrianisation of Robinson Street which includes potential for staging, access and other implications for adjacent land owners and lessees, interim and long term access



arrangements and any other relevant traffic management matters (NSDO, LG, local business operators).

## Road layout, access and parking

### Planning objective

**To provide for a well-planned pedestrian oriented environment for Coral Bay that directs traffic into well-designated car and trailer parking areas, considers the access requirements of existing and future uses and minimises potential pedestrian-vehicle conflict.**

Although most visitors to Coral Bay arrive by road, the size and layout of the settlement discourages the need for vehicle use once there. Many visitors do however bring boat trailers or caravans. It is important to provide a well-designed access network and appropriate car parking facilities for tourist buses, day visitors, long-term visitors, boat trailers and service vehicles away from pedestrian areas in a way that avoids conflict between vehicles and pedestrians in a secure manner.

With the removal of vehicular traffic from Robinson Street, Banksia Road will become the main vehicular access for accommodation and other uses which to date have fronted Robinson Street. Banksia Road will be constructed and sealed and terminate at the western end of the settlement in an appropriately designed car park. This car park should be designed to minimise impact on the existing topography and cater for several hundred day users. The carpark drainage shall incorporate appropriate environmental best practice in the treatment of run off due to the close proximity to the marine environment.

Development within the southern and eastern lot boundary areas abutting Banksia Road should include car parking and new entry facilities for tourist accommodation. Any future development at Coral Bay should be encouraged to include the reorientation of

reception areas towards Banksia Road. Convenient car parking, accessed via Banksia Road, will cater for the majority of existing and proposed parking needs of the settlement.

A newly constructed road heading south from Banksia Road will lead to the Coral Bay recreational boating facility at Monck Head and pass by the new service station site and marine and chemical storage land. Consideration of a secure, long-term boat trailer and long vehicle parking area is recommended for inclusion in the marine and chemical storage land.

Plans for the proposed boating facility access road follow a similar alignment to an existing well used track, however the alignment has been planned to reduce cut and fill to the landform, have an appropriate setback from the coast and be visually unobtrusive from the water and coast. The location of the new recreational boating facility and marine and chemical storage area will reduce boat-trailer traffic and general traffic congestion within Coral Bay.

Lot 46 Robinson Street presently has its sole access from Robinson Street in a location that will eventually become part of the pedestrian mall. The long term planning for Coral Bay includes the delineation of a road to be accessed from the east of Lot 46 which will allow access to the shopping centre, existing holiday accommodation and backpackers accommodation from the north and utilise the existing track network through Lot 46. This access network will result in a loop road which will reduce traffic congestion and provide access to the proposed workers' accommodation site and form the eastern boundary of the settlement. It will also further facilitate the pedestrianisation of Robinson Street.

Tourists will be directed to parking at the proposed visitor centre near the entrance to Coral Bay, long-term car and boat-trailer parking on the road to the Coral Bay recreational boating facility, or day use parking at the western end of Banksia Road. Bus parking should be catered for both at the

visitor centre and at the day use carpark at the western end of Banksia Road.

Due to the unusual situation of Coral Bay, appropriate provision for the parking of trailers and boats, in addition to normal vehicular requirements, is encouraged when assessing future development proposals. Appropriate parking will be provided within the design of the workers' accommodation area to promote a pedestrian-friendly environment, security of vehicles and ease of access to accommodation.

The workers' accommodation proposed in the north-east of the settlement will be accessed via the continuation of the loop road through Lot 46. Upon completion of detailed planning studies confirming the need for mixed use development containing all future commercial growth, government offices and community uses, a new access road will form the eastern boundary of the tourism settlement. The road should be located north of the proposed visitor centre, existing shopping centre and backpackers accommodation and provide access for the new workers' accommodation site, as detailed in the settlement plan.



efficient vehicular permeability (NSDO, LG, DPI).

- Investigate costing and funding allocation for the construction of Banksia Road to a standard suitable to allow the pedestrianisation of Robinson Street (NSDO, LG).
- Consider the provision of boat/trailer parking when assessing development proposals at Coral Bay (NSDO, LG).

## Workers' accommodation

### Planning objective

**To provide for the sustainable development and management of leasehold workers' accommodation for a population of up to 400 people, including workers, partners and dependants (under 18) that meets the various needs of the Coral Bay work force.**

To service visitors to Coral Bay, it is expected that a local working population of up to 400 people will be required. This figure is based upon the estimated existing working population of more than 150 people to serve the existing legal limit of 1848 tourist beds. This semi-permanent population will be accommodated in a purpose-built facility within the settlement, which will have its own community area and be located to separate workers' accommodation from tourist accommodation. The workers' accommodation will not be freehold as it will be managed in a leasehold manner.

Due to environmental and infrastructure constraints, Coral Bay is not considered an appropriate location for freehold residential land release. One of the main policy recommendations of the Ningaloo coast regional strategy Carnarvon to Exmouth is that all future residential growth shall be

### Actions and guidelines

- The completion of a traffic management study for Coral Bay which details existing access arrangements for all land in Coral Bay, includes recommendations and strategies for the pedestrianisation of Robinson and French streets, access and manoeuvrability of buses at the visitor centre and west Banksia Road carparks, well designed pedestrian friendly environments, adequate day use parking, trailer and long term parking areas, access arrangements for existing and future lots and land uses and

concentrated in Carnarvon and Exmouth, which are better placed to cater for residential growth in terms of existing development and infrastructure provision.

Strong demand exists for the provision of suitable workers' accommodation in Coral Bay. Preliminary public consultation and consideration of the potential future expansion of Coral Bay as a tourism settlement, suggests that workers' accommodation should cater for approximately 400 people over the next 30 years. The land recommended to house workers is located in the north-east of the settlement. This area was selected based on input from the working community at a Coral Bay community planning day and reflects a general desire to be housed away from the main hub of tourist activity to allow a level of privacy for workers whilst off duty and be within easy walking distance of tourism accommodation and businesses and so minimising the need to use motorised transport for short journeys.

The range of accommodation proposed for workers should reflect the needs of the existing and desired work force. Presently, due to the lack of quality workers' accommodation, generally young itinerant workers are attracted to the settlement, as families are not well catered for. For this reason, the proposed workers' accommodation should seek to supply modern, functional single persons' quarters as well as appropriate facilities for couples and families. The opportunity to provide accommodation that can be converted easily from single persons' quarters to family homes is encouraged at the detailed planning stage.

To become eligible for access to the workers' accommodation, prospective occupants must provide satisfactory proof of substantial employment in tourism or servicing associated with Coral Bay. This accommodation is intended only for Coral Bay workers, including partners and dependants under 18. Where a person is no longer actively engaged in substantial employment in Coral Bay or retires, their eligibility for accommodation shall be forfeited.

At no stage will freehold of workers' accommodation be considered.

Part of the area set aside for workers' accommodation will be developed as a workers' community facility. This area will be for the general enjoyment of workers and their families and may include a range of recreational facilities. This may be similar in form and style to a communal area associated with grouped dwelling development.

In conjunction with the construction of the proposed workers' accommodation is the requirement to decommission, remove and remediate existing substandard structures that have been utilised for workers' accommodation to date. The removal of these structures should be linked directly to the completion of the new accommodation.

Construction and management of the workers' accommodation may be co-ordinated by the state government. Consideration of an overall development contribution by freehold and leasehold landholders for the construction of the workers' accommodation, provision of roads and the general enhancement of the settlement should be investigated. Other sources of funding also should be explored.

## **Actions and guidelines**

- Further consultation with existing Coral Bay tourism related workforce to guide the planning of workers' accommodation (NSDO).
- Continued investigation into the options for construction, design, tenure and management of workers' accommodation at Coral Bay utilising the Planning and environmental guidelines for sustainable tourism on the Ningaloo coast, where appropriate (NSDO, DHW).
- Consideration of funding opportunities and contributions from existing Coral Bay landholders and businesses in the construction of workers' accommodation (NSDO, DHW).



- That, as part of the detailed planning of the workers' accommodation, direction and guidance be given to landholders in regard to caretaker or staff accommodation on tourist accommodation land (NSDO).

## **Freehold or leasehold residential land**

### **Planning objective**

**To prevent the development of any residential land in Coral Bay (apart from workers' accommodation) and direct residential development to Carnarvon and Exmouth.**

Due to the environmental sensitivity of the locality, expense and limited potential for servicing infrastructure and the objective of the Ningaloo coast regional strategy Carnarvon to Exmouth to facilitate the ongoing development of Carnarvon and Exmouth, no residential land will be released in Coral Bay, apart from land for workers' accommodation.

### **Actions and guidelines**

- That no provision be made for the creation of residential accommodation at Coral Bay apart from the development of workers' accommodation on the designated site (NSDO, LG).

## **Subdivision of land**

### **Planning objective**

**To ensure that no subdivision within the Coral Bay settlement occurs until appropriate public infrastructure is provided, workers' accommodation created, an inventory of existing accommodation and other relevant studies are completed.**

In order to prevent any further fragmentation of lots within Coral Bay no further subdivision will be considered in the short term. This will ensure compliance with the principal planning objective for the settlement, which is to improve sustainable tourism practices whilst continuing to be an attractive destination for tourists and visitors seeking to experience Ningaloo Reef and the remote holiday atmosphere of Coral Bay. This will assist in the orderly and comprehensive planning of the tourist settlement.

Through implementation of this settlement plan, consideration of subdivision for non-residential purposes may be considered once appropriate public infrastructure, workers' accommodation and an inventory of existing accommodation has occurred as well as other studies identified throughout this settlement plan. Future subdivision consideration shall take into account road layout, allocation of land for recreation and other public uses, provision for essential infrastructure, equitable arrangements for developer contributions and a minimum lot size.

### **Actions and guidelines**

- That no further subdivision be supported for Coral Bay until the long term planning objectives for the settlement has been finalised and confirmed through appropriate studies (NSDO, WAPC, DPI, LG).

## **Tourist accommodation**

### **Planning objective**

**To limit and stage expansion, encourage variety and facilitate continual improvement of existing accommodation services within Coral Bay in accordance with the Planning and environmental guidelines for sustainable tourism on the Ningaloo coast.**

**To retain a minimum of 50 per cent of tourist accommodation beds on tourist**



### **accommodation land within Coral Bay for the purposes of caravanning and camping.**

The majority of land within Coral Bay is utilised for tourist accommodation. This includes unpowered campsites, powered sites, on-site vans, chalets, backpacker accommodation, self-contained units and motel accommodation. This accommodation caters mainly for independent traveller/s, small groups, retirees and families through facilities catering to the low to medium price markets. Due to environmental sensitivity, only limited expansion of the existing settlement will be permitted. The majority of this will be in the redevelopment of existing tourist accommodation and the proposed release of one additional leasehold lot at the southern end of the settlement.

Many submissions on the draft Carnarvon-Ningaloo coast regional strategy raised concerns about the potential reduction of affordable tourism on the Ningaloo coast due to the management of camping along the coast and capping of overnight visitors at Coral Bay. It is acknowledged that camping and caravanning is becoming more popular and that the trend is expected to continue into the future. In July 2003 a Ministerial Taskforce report, prepared for the Minister for Planning and Infrastructure, was released for public comment. An important finding of the report was the need for the retention of a variety and affordability in tourist accommodation in traditional holiday locations to people at a range of socio-economic levels. For these reasons a minimum of 50 per cent of tourist accommodation land (excluding hotel/tourist accommodation land which does not presently cater for any caravanning/camping component) is to be retained for caravanning and camping. At present, approximately 70 per cent of accommodation offered at Coral Bay is for caravanning/camping.

In addition to the above, the type of uses that could be considered on tourist accommodation land should be limited to caravan park, car park, camping area, ecolodge accommodation, self-contained accommodation, private recreation, serviced

accommodation and chalets. All future development shall comply with the requirements of the Planning and environmental guidelines for sustainable tourism on the Ningaloo coast.

### **Actions and guidelines**

- Retain the crown lease of Lot 52 Robinson Street for caravanning and camping purposes in its entirety (DPI, NSDO, LG).
- Ensure that any future redevelopment proposal for tourist accommodation land in the Coral Bay settlement plan retains a minimum of 50 per cent of the lot (or combined lots under the same ownership) for the purpose of caravanning and camping (NSDO, DPI, LG).
- Ensure that all proposed development on hotel/tourist accommodation, tourist accommodation or ecotourism accommodation land complies with the requirements of the Planning and environmental guidelines for sustainable tourism on the Ningaloo coast (NSDO, LG).

## **Ecotourism accommodation site**

### **Planning objective**

**To provide a site in Coral Bay for a world-class ecotourism accommodation opportunity that will demonstrate world's best practice for sustainable tourism.**

This ecotourism accommodation site will provide a working example for tourist accommodation proponents in the study area and throughout the state. An ecotourism accommodation proposal shall include:

- adoption of energy-saving technology and programs;
- use of alternative energy resources;

- use of building design principles and materials to reduce energy consumption;
- control of noise emissions;
- sensitive hardening of environments to withstand increased usage without deterioration (boardwalks etc);
- treatment, control and re-use of wastewater;
- use of above-ground construction for buildings and paths;
- development of environmental guidelines for construction firms;
- measures to ensure that builders adhere to practices designed to minimise disruption to the natural environment during construction;
- use of environmentally friendly construction materials;
- use of endemic or native plants for landscaping purposes where practicable (integrated with shade trees where appropriate);
- rehabilitation of degraded environments;
- employment of environmental impact assessments prior to construction;
- development of co-operative arrangements with natural area's management bodies and support for environmental management groups;
- adoption of environmentally friendly product-purchasing policies;
- selection of environmentally friendly service suppliers and products;
- employment of regular environmental audits;
- use of biodegradable chemicals;
- employment of recycling programs;
- economic contributions via regional and indigenous employment and the local sourcing of products and services where possible;
- development and use of impact monitoring and evaluation systems;
- community consultation;
- employee education regarding environmental practices and issues;
- employment of interpretive services (including information centres) to enhance visitor understanding of the physical environment;
- education of visitors regarding green living principles;
- supervision of interaction between visitors and physical/cultural environments; and
- additional environmental considerations as required at the time of assessment.



(adapted from Harris and Leiper, 1995)

The successful proposal shall provide tourist accommodation that addresses existing infrastructure shortcomings and provides an example of world's best practice in sustainable tourism. *Hope for the future: The Western Australian state sustainability strategy* states that, "Sustainability is meeting the needs of current and future generations through integration of environmental protection, social advancement and economic prosperity." This should include energy-efficient building design, adopting energy-saving technology and programs, provision of environmental education to assist in the protection of the sensitive local environment, result in no or minimal waste products and be consistent with ecotourism principles. The proposed additional tourist accommodation lease will require a land area in the vicinity of three

hectares. Consideration of proposals for this site should only be considered after the provision of appropriate infrastructure services for Coral Bay.

The proposed ecotourism accommodation site shall be a model for simple but energy-efficient design, operation, interpretive education and should embrace the principles of sustainable tourism, ie providing a facility that will not limit or affect future enjoyment of the very resource that attracts the visitor to the Ningaloo coast, Ningaloo Reef and Coral Bay. Part of this philosophy is to encourage the employment of regional people, including indigenous people, who may contribute to a visitor's experience or education about the area through stories or local knowledge.

The proposed leasehold site is located on the southern side of Banksia Road, in an area previously not developed with hard infrastructure. The challenge to the developer is to retain the existing character of the locality while providing a world-class environmental experience for the visitor.

Flexibility in development of this site should be exercised in order to provide opportunities for some level of commercial/retail/tourism services to add variety to the Coral Bay settlement while ensuring that good ideas may be considered on their merit. One such opportunity would be the development of a co-operative ticket sales facility to cater for all tourism businesses that serve Coral Bay tourists.

## **Actions and guidelines**

- To facilitate the development of world class ecotourism accommodation at Coral Bay to provide an example for sustainable tourism for the Ningaloo coast (NSDO, TWA).

## **Mixed use (public purposes/ community/tourism commercial/retail) area**

### **Planning objective**

**To provide variety and interest in Coral Bay through the integrated development of a mixed use (government offices, community facilities and tourism commercial/retail uses) area within the Coral Bay settlement which is located outside of the storm surge area.**

At present, Coral Bay has two main commercial/retail areas adjacent to Robinson Street which are located within a storm surge area. Both offer a range of services catering to the needs of tourists, day visitors and local workers consistent with a local centre. The local centre at the north-east end of Coral Bay contains retail uses, including a supermarket, bakery/café, souvenir shop, newsagent/post office and tourism businesses. The other is adjacent to Bills Bay and includes a service station/supermarket, restaurant/café and retail premises. Prior to any increase in existing tourism commercial/retail uses in Coral Bay a local commercial strategy should be prepared to demonstrate the need for intensification.

It is proposed that the pedestrianisation of Robinson Street will facilitate a better interface between the existing commercial/retail areas and Bills Bay, however as the majority of Robinson Street is contained within the storm surge area it is inappropriate to encourage any further construction within the storm surge area. Instead, only camping and caravanning should be allowed in the storm surge area. Existing approved development within the storm surge may remain however no increase in floor area should be permitted. The only exceptions to this would be for the provision of outdoor living areas and alfresco dining orientated towards the mall/esplanade.

The proposed mixed use area is located at the north eastern end of the settlement adjacent to the proposed visitor information centre and south of the proposed workers' accommodation site. The land was chosen because it is located completely outside the storm surge area, has a relatively undulating topography and is presently undeveloped. It is naturally bounded by a dune system to the east. The eventual development of the area for mixed use purposes will facilitate the co-location of government offices, a community facility suitable for educational, social, cultural and religious uses as well as any future tourism retail/commercial needs.

## Actions and guidelines

- Prepare a local commercial strategy to demonstrate the need for additional commercial development at Coral Bay prior to the consideration of development of the mixed use area (NSDO, Coral Bay businesses, LG).
- Prevent any further development of land within the storm surge area apart from caravanning and camping (NSDO, LG).

## Service station

### Planning objective

**To remove the existing service station use from within the storm surge line with appropriate remediation and provide a more appropriate service station site within the Coral Bay settlement.**

The closure of the existing service station on Lot 4 Robinson Street is recommended for environmental reasons. Its present location is on land subject to storm surge in close proximity to Bills Bay and its continued operation prevents the pedestrianisation of Robinson Street. Its relocation to the eastern-most point of the tourism settlement was recommended in the draft settlement plan. This site is now considered inappropriate as it

is within the storm surge area, would require significant site works impacting upon natural topography and would be a prominent landmark on entry to Coral Bay. It is considered that such an entry statement would not promote the environmental values of the Coral Bay area.

The preferred site for the relocation of the service station is the south east corner of the intersection of Banksia Road and the Coral Bay recreational boating facility access road. This location is suitable due to its distance from the marine environment and storm surge area, its undulating topography, its access to the recreational boating facility, its corner siting and easy access by Coral Bay visitors without being located as a prominent entry statement to the tourist settlement

The operator of the existing service station has indicated preliminary support for the option to decommission the existing service station on the basis that they will be given the development right for a new service station. Further negotiations are required to achieve this significant outcome.

Only one service station shall be permitted in Coral Bay and therefore it is recommended that a specific site be reserved for the use. Public consultation has highlighted the need for emergency repairs to recreational boats and trailers. For this reason it is recommended that the service station be permitted to include facilities to cater for minor and emergency mechanical repairs to vehicles, trailers and recreational boats. Major repairs, including the servicing of commercial boats, should be done at either Carnarvon or Exmouth. The model scheme text definition of service station applies as detailed below:

- the retail sale of petroleum products, motor vehicle accessories and goods of an incidental/convenience retail nature; and
- the carrying out of greasing, tyre repairs and minor mechanical repairs to motor vehicles, but does not include premises used for a transport depot, panel beating, spray painting, major repairs or wrecking, however it is noted in this



instance that the term motor vehicle be extended to include recreational boats and trailers. The option of the repairs use being considered for the marine and chemical storage site should be further considered however only one such repair service should be allowed for Coral Bay.

## **Actions and guidelines**

- That immediate negotiations commence with the existing service station operator for the relocation of the existing service station to the site delineated in the Coral Bay settlement plan (NSDO, DPI).
- That an agreement be entered into with the existing service station operator that upon completion of the development of the new service station site, the operator decommission and remediate the existing service station in compliance with all required environmental approvals at the cost of the proponent (NSDO, LG, DoIR, EPA).

## **Marine and chemical storage land**

### **Planning objective**

**To provide a suitable location for sustainable storage facilities for businesses reliant on the Coral Bay tourism settlement, chemical storage and the storage of recreational boats and trailers for the workers and visitors at Coral Bay.**

Public consultation has highlighted the need for recreational boat, chemical and other storage for Coral Bay including storage for Coral Bay businesses. The illegal storage of chemicals at the informal airstrip and storage of equipment related to the settlement should be remediated and relocated to an appropriate site. A limited amount of land will be made available via leasehold for Coral Bay related storage such as recreational boats, storage for

businesses, chemicals and other activities dependent on Coral Bay. Commercial operations and large recreational boats requiring jinkers for land transportation should not be catered for at this site.

All other industrial uses not related to tourism will not be permitted in Coral Bay and should be concentrated in Carnarvon and Exmouth. Caretaker's accommodation will not be permitted within marine and chemical storage land.

The southern site location identified in the draft strategy is not considered appropriate as direct access across the dune system to the recreational boating facility will not be possible due to the significant dune system and access to the site would be restricted to the road to the existing waste disposal site. The new site is preferable due to its ease of access to both the settlement and recreational boating facility, as well as allowing the potential for the use to be operated in conjunction with the service station as one entity.

The site should cater for the storage of trailers and boats of visitors to Coral Bay in addition to the storage requirements of Coral Bay businesses and chemical storage requirements of the settlement. The option of utilising this site for minor or emergency repairs to recreational boats requires further consideration as either this land or the service station site may be appropriate for a repairs component. However, only one such repairs operation should be considered for Coral Bay.

Buildings in this area shall have a maximum height of one storey except where a need is demonstrated justifying a higher building for the purposes of the marine storage however the total building height shall not exceed nine metres and two storeys. Any proposal shall have regard to the topography of the locality and minimise disturbance to natural ground levels or the need for cut and fill. The site should incorporate visual or noise buffers, especially in relation to the ecotourism development site to the west.



## Actions and guidelines

- Further consultation to occur with Coral Bay businesses and workers in order to design an appropriate recreational boat, chemical and business storage facility for Coral Bay (NSDO).

## Foreshore reserves

### Planning objective

**To reserve remaining foreshore areas in the north and south of the Coral Bay tourist settlement and manage the reserves to ensure the protection of the coastal environment for the benefit of the general community.**

The existing foreshore reserve vested in the Conservation Commission of Western Australia shall continue to cater for passive recreation, conservation and pedestrian access to Bills Bay. Rehabilitation of degraded areas shall be encouraged along with the provision of shade structures where appropriate. The foreshore reserve will be extended to the north and south to ensure appropriate setback from the coast of any future development and the retention of the foreshore in public ownership.

With additional parking and pedestrian access being proposed for the western end of Banksia Road, the opportunity to provide further amenities, such as a toilet block in close proximity to the beach, car parking and the sewage pumping station should be considered.

## Actions and guidelines

- Progress the extension of the existing foreshore areas (NSDO).

- Preparation of foreshore management plan to guide the sustainable use and conservation of the existing and proposed Coral Bay foreshore reserve (NSDO, CALM, LG).

## Public purposes land

### Planning objective

**To provide sufficient land for the future needs of government and infrastructure for the Coral Bay settlement.**

The mixed use land discussed above will provide for public purpose uses such as government services/offices, school resources (internet schooling), medical facilities and community facilities in an integrated development which will cater for the future commercial needs of Coral Bay. The land north of Banksia Road is presently utilised for telecommunications infrastructure and should appropriately be used for other public purposes as the need or opportunity arises.

To the south of the settlement, it is proposed to construct a water tower on the highest point in the landscape to facilitate a gravity-based water supply for Coral Bay. Although the tower will be visible in the landscape, it will reduce the need for mechanical pumping of the settlement's water supply. It is appropriate to locate servicing infrastructure such as water and power in the same locality where environmentally suitable. For this reason, it is recommended that the public purposes land to the south of the settlement be designed appropriately to accommodate the needs of the potable water supply, and wind turbines and back-up generators for power supply.



## **Actions and guidelines**

- The continued cooperation and coordination of servicing agencies in the consideration of land requirements for the infrastructure requirements at Coral Bay (NSDO, servicing authorities).

## **Visitor information centre**

### **Planning Objective**

**To provide a site for a visitor information centre at the entrance to the Coral Bay tourism settlement as a convenient first stop for visitors and offer information on appropriate environmental behaviour, interaction with the environment and possibly provide services associated with accommodation and other tourism uses within the settlement.**

At present, no general visitor information centre exists in Coral Bay. Locating the proposed visitor centre at the entrance to the settlement will encourage first-time visitors to call in prior to commencing their stay in Coral Bay. The purpose-built centre should provide interpretive information aimed at educating visitors on environmentally responsible behaviour in the marine and coastal environs as well as providing information on accommodation and services, including ticket sales.

Flexibility in the lease for the visitor centre should allow for either a government agency to operate the facility (such as the Shire of Carnarvon, CALM or Department of Fisheries, or a combination of the three) or a private operator such as an existing tourism business or local indigenous group. This facility also may be considered for a telecentre.

## **Actions and guidelines**

- Detailed consultation and planning for the proposed visitor information centre (NDSO, TWA, LG, CALM, Coral Bay tourist businesses).

## **Decommissioning of the existing waste disposal site**

### **Planning objective**

**To close and remediate the existing, unsustainable waste disposal site close to Coral Bay and facilitate the creation of an appropriate facility in close proximity to the wastewater treatment facility.**

At present, the waste disposal site is located on the southern side of the access road into Coral Bay and is one of the first landmarks seen by visitors. The waste disposal site should be relocated to the site of the sewage treatment plant about six kilometres from the settlement. The existing waste disposal site shall then be remediated to a satisfactory level, including the planting of local species of vegetation to stabilise the site.

Relevant approvals, including native title requirements, will need to be addressed prior to relocation of the waste site.

## **Actions and guidelines**

- Detailed investigation, including site design and appropriate approvals for the relocation of the existing waste disposal site to land in close proximity to the wastewater treatment facility (NSDO, LG, Cardabia lessee).

## Lot 54 Robinson Street

### Planning objective

**To include Lot 54 (previously known as Lot 31) Robinson Street into the foreshore reserve and potentially provide additional parking for day use and toilet facilities.**

The western most lot in Coral Bay is presently developed as a holiday house. The *Coral Bay task force - report on infrastructure requirements for coral bay* recommended the review of the existing lease when it expires. It is recommended that the lease not be renewed and the land incorporated into the foreshore reserve. Due to its strategic location in relation to Bills Bay, the most appropriate use for this site would potentially be for day use car parking with the possible addition of a public amenities facility.

Although it is recognised that the family currently leasing this lot have a long history of association with Coral Bay, the close proximity of the land to the coast and Bill's Bay render it an important public asset to be retained for the benefit of the wider community. This recommendation was also supported by the Shire of Carnarvon's submission which reversed previous support for continued privatisation of the lot.



### Actions and guidelines

- That the lease for Lot 54 (previously known as Lot 31) Robinson Street, Coral Bay not be renewed and that consideration of future use of the site for conservation and recreation be considered in a foreshore management plan (NSDO, CALM, LG).

## Coral Bay recreational boating facility

### Planning objective

**To ensure that the proposed Coral Bay recreational boating facility is designed to efficiently address the current and future boating needs of Coral Bay.**

The Coral Bay recreational boating facility at Monck Head will cater for the settlement's boat-launching needs. This facility will be

located to the south of Coral Bay and replace the beach launching arrangement, which presently occurs in southern Bills Bay.

Although further public consultation will occur as to the detailed planning of the recreational boating facility, previous consultation suggests that the facility should cater for parking of approximately 100 car and boat trailers

and consider facilities such as fuel storage and fish cleaning in the overall concept plan. This facility is generally considered suitable for the recreational boating needs of Coral Bay only and as such commercial boating operations and large recreational boats that cannot easily utilise the facility should be directed to Carnarvon and Exmouth.

### Actions and guidelines

- That further consultation occurs with interested stakeholders into the design and facilities to be offered at the Coral Bay recreational boating facility (DPI, NSDO, LG, CALM, interested stakeholders).



## Airstrip

### Planning objective

To close the existing, inappropriate informal Coral Bay airstrip and construct a new airstrip in the most suitable location to comply with the requirements of the Royal Flying Doctor Service.

The existing landing strip to the north-east of Coral Bay is not suitable in its present location. It is not a long-term option due to its location on the edge of a saltpan which is vulnerable to flooding. The landing strip has no formal approvals and is not suitable for all-weather use by the Royal Flying Doctor Service. This settlement plan reiterates the findings of the Gascoyne Development Commission's *Coral Bay aerodrome development study* (September, 2001) and subsequent documents which support the relocation of the landing strip to a more suitable area east of the settlement. The short term upgrade of the existing strip will occur as an interim arrangement prior to the development of a new landing strip.

The preferred location for the airstrip is approximately eight kilometres inland of Coral Bay on the northern side of the access road. Further investigation in relation to Aboriginal heritage and the Gnulli native title claim is required as part of the consultation process with the traditional owners of the land as well as Cardabia Station lessees.

### Actions and guidelines

- Continue planning for the development of a new Coral Bay landing strip in the location recommended in the *Coral Bay aerodrome development study* (NSDO, DPI, Cardabia lessee).

## 2.3.4 Planning mechanisms to implement the Coral Bay settlement plan

### Moratorium on development

In order to appropriately implement the Coral Bay settlement plan, no further development at Coral Bay will be permitted until:

- A. The tourism settlement has been provided with appropriate infrastructure to service an overnight population of 2800, consistent with the first stage of the construction of the sewerage treatment facility. The required infrastructure includes connection to an appropriate sewerage treatment plant, provision of a public utility potable water supply and the provision of a public power supply to service the settlement,
- B. Appropriate workers' accommodation has been provided as detailed in the Coral Bay settlement plan, and
- C. An inventory of existing accommodation within Coral Bay has been completed and bed numbers comply with approved limits.

Upon the provision of necessary infrastructure and workers' accommodation, the staged growth of Coral Bay to the size permitted by this settlement plan shall be considered and assessed against the provisions of the Planning and environmental guidelines for sustainable tourism on the Ningaloo coast and in the context of the relationship between Coral Bay and the Ningaloo coast.

The moratorium on development of Coral Bay should be reviewed annually to assess its

effectiveness and whether any of the criteria preventing development has been addressed or overcome.

## Population threshold

Development and redevelopment within Coral Bay over the next 30 years shall be controlled and staged in an orderly manner to ensure that the population does not exceed its maximum development potential of 3600 overnight visitors, 400 workers (including partners and dependants) and 500 day visitors.

In order to contain the future growth of Coral Bay, strict assessment criteria are required for all new proposals. To assist in this process, it is recommended that a carrying capacity be tied to each land area within the settlement that will define how many people each lot will be permitted to cater for over the next 30 years.

An essential element of the effective implementation of the settlement plan is the requirement for a detailed assessment and inventory of all existing tourist accommodation beds including caravan and tent sites, on-site caravans/tents/chalets and backpacker accommodation. This data should be categorised under motel accommodation, chalet/self-contained accommodation, camping/caravanning and backpacker/budget accommodation uses.

## Accommodation density limit

According to the superseded 1998 settlement plan, Coral Bay had 1848 licensed accommodation beds. Under this settlement plan Coral Bay is permitted to

grow to a maximum of 3600 overnight visitors (to be serviced by a semi-permanent population of 400 workers). This means the settlement has the potential for an additional 1752 tourist beds. The draft settlement plan provided for a world-class ecotourism accommodation site to cater for up to 400 overnight visitors with the remaining tourist accommodation potential distributed equitably among existing freehold and leased lots based on land area resulting in an additional 1352 overnight beds.

Consideration of submissions relating to the accommodation density limit has resulted in the total bed allocation for Coral Bay remaining at 3600 overnight beds. The only modification to the distribution of bed numbers is between the hotel/tourist accommodation site and the new ecotourism development site, with the hotel/tourist accommodation site now being allocated 270 beds whilst the ecotourism site allocation has been reduced to 340 beds. This is detailed in table 2, below.

Growth shall be monitored to ensure that the overall cumulative impact of development is understood prior to further consideration of additional tourist accommodation.

**Table 2: Additional legal beds for existing freehold landholdings in Coral Bay**

Accommodation type	Lot description	Existing approved bed numbers	Maximum cumulative bed numbers
Hotel/tourist accommodation site	Lot 1 Robinson St	100 beds	270
Self contained, caravanning and camping	Lots 2, 4 and 5 Robinson St	400 beds	799
Self contained, caravanning and camping	Lots 1, 2 and 52 French St and Lot 46 Robinson St	1348 beds	2191
<b>Sub-total</b>		<b>1848 beds</b>	<b>3260</b>
New Ecotourism Development Site	New area	0 beds	340 beds
<b>TOTAL</b>		<b>1848 beds</b>	<b>3600</b>

Note 1: Development potential is not to be transferred between lots.

Note 2: The term bed equates to accommodation of one person.

Note 3: All future development must comply with the Planning and environmental guidelines for sustainable tourism on the Ningaloo coast.

Consideration of development shall be based upon the capacity of infrastructure provided at that time and performance assessment of any existing development on the subject lot (if any) against the policies set out in the Planning and environmental guidelines for sustainable tourism on the Ningaloo coast.

Additional research and investigation into the most suitable mechanisms to implement the Coral Bay settlement plan shall be built in to the processes for implementation of the plan.

## **Proposed plans**

Any development proposal shall be accompanied by plans which show existing and/or natural contours in addition to existing buildings, vegetation, tracks and dune systems and clearly delineate proposed works, and finished ground and floor levels. Detail in regard to relationships with existing and proposed tourist accommodation, including access and shared facilities, also shall form part of any proposal.

## **Storm surge lines**

No further development within the nominated storm surge lines will be considered other than structures necessary for public facilities which are coastally dependent or temporary.

Further specific research should be done in regards to storm surge.

## **Height controls**

Structures and buildings should reflect and protect the topography of the building envelope and surrounding area. Generally, it is preferred that all construction within Coral Bay should be one storey and five metres maximum building height except where planned and justified as part of a sustainably designed proposal.

The maximum building height that may be considered within the settlement is two storeys to a maximum height of nine metres above natural ground level, although it should be noted that this will apply only to quality, energy-efficient designed proposals that do not significantly impact on the visual amenity of the site from both land and water. This is in order to preserve the visual amenity of the locality, contain bulk and scale and maintain topography of landform features.

## **Plot ratio**

Due to the potential pressure on the environment of Coral Bay and the state government's commitment to limiting the size of population capacity, plot ratio controls are recommended to reduce development pressure on the settlement. With the recognition that existing lots have considerable amounts of undeveloped land, it is recommended that a low plot ratio be placed over all tourist accommodation land in Coral Bay. Requiring a plot ratio of 0.25 will enable developers to construct single-storey dwellings over 25 per cent of the lot area if all development is single storey. If two-storey development is proposed, the layout will decrease the site coverage by the proportion of upper-level floor areas.

Further consideration of the usefulness of this tool as a mechanism for the implementation of the Coral Bay settlement plan is required, and may therefore be reviewed at a future date.

## **Commercial development**

No further commercial development should occur in the storm surge area.

A local tourism and commercial strategy should be prepared to justify any proposed increase in commercial floor space and all justifiable additions to commercial floor space should only occur in the mixed use area. In any case Coral Bay's commercial floor space

should not be permitted to increase to a level greater than that required for a neighbourhood or local centre, which is 5000 m<sup>2</sup> in keeping with the state guidelines for commercial areas.

Limiting floor space for commercial uses will ensure that Coral Bay does not expand beyond its projected capped capacity of 3600 overnight visitors, 400 semi-permanent workers and 500 day visitors.

The need for an inventory assessment of existing commercial development based on the present commercial uses at Coral Bay should be a part of any future review of the settlement plan and detailed in the local tourism and commercial strategy.

## Further studies required

As part of the implementation of the Ningaloo coast regional strategy Carnarvon to Exmouth, the following studies are recommended:

- inventory of existing accommodation within the Coral Bay settlement;
- inventory of existing commercial floor space and the development of a local commercial strategy to determine the need for increased commercial floor space to accommodate a future population of 3600 overnight visitors, 400 workers and 500 day visitors;
- further consultation with Aboriginal stakeholders with particular reference to identified Aboriginal heritage sites located in the Coral Bay locality and the requirements for Aboriginal heritage surveys prior to any ground disturbing activities;



- review or updated storm surge study;
- nutrient and drainage management plan;
- local tourism planning strategy;
- traffic, access, permeability and transport study (including process for pedestrianisation of Robinson Street);
- accommodation needs of workers at Coral Bay;
- any other relevant environmental considerations required by law or for the purposes of informed environmental assessment; and
- consideration of a competition for designing the proposed sustainable ecotourism accommodation site based on the detail provided within the Coral Bay settlement plan and the Planning and environmental guidelines for sustainable tourism on the Ningaloo coast.





# Section three

## Governance and implementation





## Governance and implementation

The State government will ensure that future management of the Ningaloo coast protects the world-class natural values of the Ningaloo coast while enabling sensitive development of the region as a nature-based tourism destination of international significance. The Government has a policy commitment to seek a world heritage nomination for the area and has commenced a process to prepare its submission to the Australian Government for nomination to the World Heritage Committee of UNESCO.

This strategy states this will involve ensuring that the towns of Carnarvon and Exmouth serve as the gateways to the Ningaloo coast, and that coastal development in other areas is limited to small-scale, low-impact development.

## 3.1 Planning and development

Given the significance of the area and the need for strong development controls to prevent ad hoc or inappropriate development, the Government intends to establish a statutory authority with development control powers over Coral Bay, the coastal tourism nodes and the Ningaloo coast, however the timing and scope for such an authority will be reviewed in light of outcomes:

- arising from the world heritage nomination process;
- from the pastoral exclusion process; and
- from arrangements being established under the Western Australian Planning Commission and the Ningaloo Sustainable Development Office.

Planning and development controls will have a strong environmental focus, to ensure that individual developments have as little impact as possible, and that development is staged in a manner that is informed by an understanding of cumulative impacts and is consistent with the protecting environmental values of the area. This will include proactive coordination and facilitation of low-impact, nature-based tourism developments consistent with the plans, policies and guidelines outlined in this strategy.



### 3.1.1

## Immediate planning and development actions

The Government has established arrangements under existing legislation for the Western Australian Planning Commission (WAPC) to exercise development control over the coastal strip. The Ningaloo Sustainable Development Office (NSDO) has been funded and established to proactively coordinate and facilitate appropriate nature-based tourism developments on the Ningaloo and to service the WAPC.

The WAPC will establish a standing committee (Ningaloo Sustainable Development Committee) under the *Western Australian Planning Commission Act 1985* and delegate its decision-making to that committee. A broader coordinating advisory committee will support the standing committee to coordinate the implementation of the strategy. The Ningaloo Sustainable Development Committee will include members from local government, key agencies and community interests. As a decision-making committee the membership should include individuals with relevant experience in planning, environmental, tourism or land development fields, preferably with decision-making experience in a legislative context.

Consultation and involvement with Aboriginal interests will be a priority, with the aim being to establish an engagement that provides a fair and effective response to and opportunities for Aboriginal interests in the processes of the committee. There will be dedicated communication and reporting arrangements established with other key decision-making bodies through the use of memoranda of understanding, to ensure coordinated decision-making at a range of levels.

The Ningaloo Sustainable Development Office will support both of these committees to continue the integration and coordination from the strategy to implementation. An outline of the functions of these arrangements follows:

### Ningaloo Sustainable Development Committee (NSDC)

The Ningaloo Sustainable Development Committee provides an immediate structure to support the Government's commitment to planning and development control on the Ningaloo coast, as well as providing a framework to co-ordinate the preparation of the region scheme, and to begin implementing the Ningaloo coast regional strategy Carnarvon to Exmouth and the Ningaloo coast statement of planning policy 6.3.

Functions:

1. Co-ordinate and facilitate the implementation of the Ningaloo coast regional strategy Carnarvon to Exmouth to achieve environmental, social and economic outcomes;
2. Prepare and recommend a statutory region scheme to the Western Australian Planning Commission for the Ningaloo coast;
3. Prepare an environmental management framework for the Ningaloo coast;
4. Assess and determine planning and development applications under delegation from the Western Australian Planning Commission;
5. Prepare and coordinate environmental assessment for projects;
6. Co-ordinate the provision of infrastructure;
7. Facilitate development consistent with the Ningaloo coast regional strategy Carnarvon to Exmouth;

8. Integrate and build stakeholder partnerships for the management of the Ningaloo coast regional strategy Carnarvon to Exmouth study area or any future world heritage area; and
9. Recommend to Government priorities for the implementation of the Ningaloo coast regional strategy Carnarvon to Exmouth, including related management and resourcing requirements, to ensure sustainable outcomes.

### **Ningaloo Coast Advisory Committee (NCAC)**

Functions:

1. Advise the Ningaloo Sustainable Development Committee on the holistic and integrated coordination of the planning, development and management of sustainable outcomes to ensure protection of relevant values of the Ningaloo coast regional strategy Carnarvon to Exmouth study area or any future world heritage area;
2. Advise the Ningaloo Sustainable Development Committee on the preparation of the statutory region scheme, planning and development applications and environmental issues; and
3. Advise the Ningaloo Sustainable Development Committee on the implementation of the Ningaloo coast regional strategy Carnarvon to Exmouth, including identification of related management and resourcing implications.

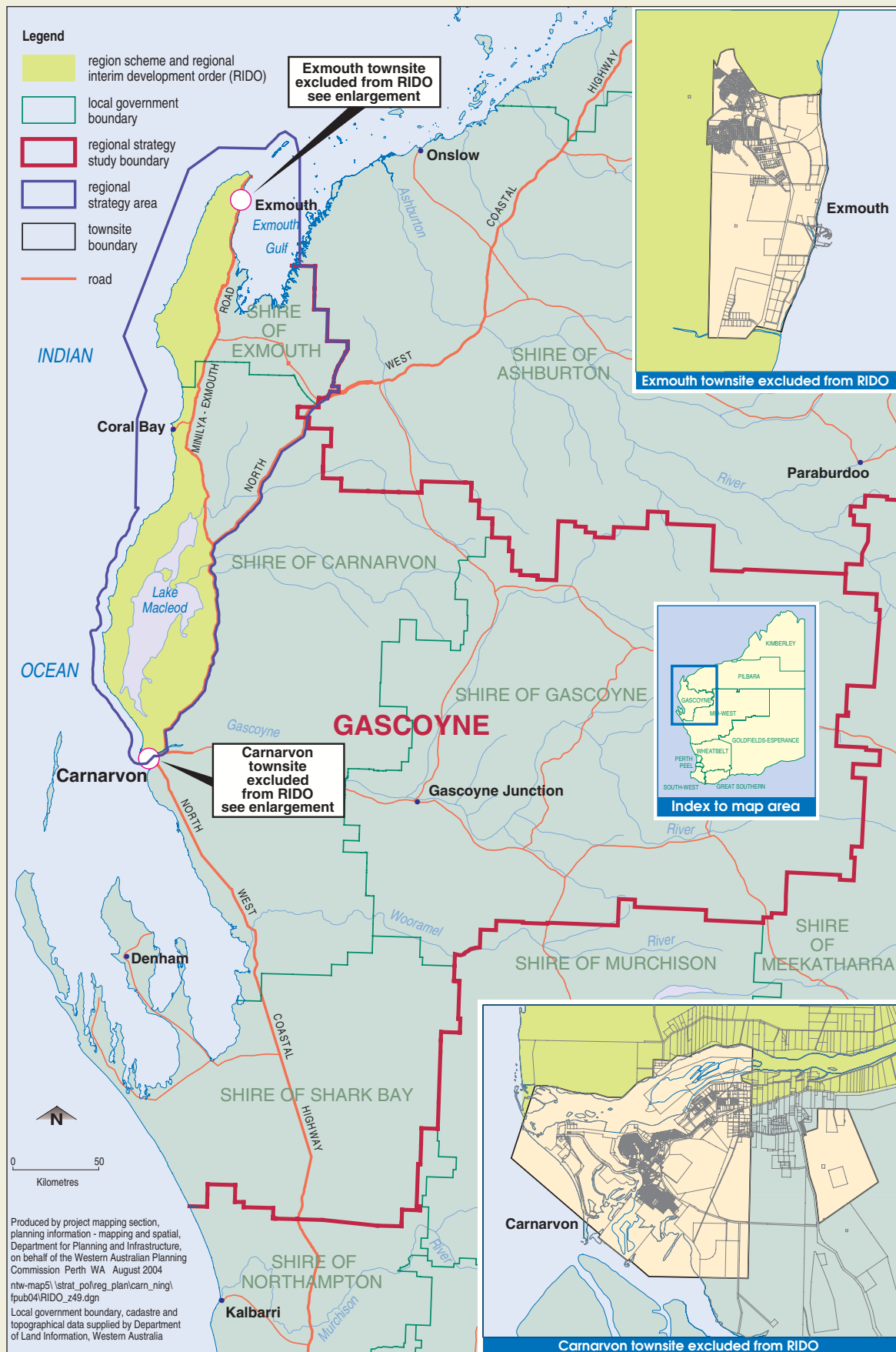
### **Ningaloo Sustainable Development Office (NSDO)**

The Ningaloo Sustainable Development Office functions will include:

1. Investigate, co-ordinate and prepare reports for the Ningaloo Sustainable Development Committee (as delegate of the Western Australian Planning Commission) on the administration of the regional interim development order for the Ningaloo coast and on related development applications;
2. Prepare and manage a statutory region scheme for the Ningaloo coast for the Western Australian Planning Commission through the Ningaloo Sustainable Development Committee;
3. Co-ordinate development and the provision of infrastructure consistent with the strategy;
4. Co-ordinate environmental assessment for projects;
5. Provide executive support and services to the Ningaloo Sustainable Development Committee; and
6. Provide executive support to the Ningaloo Coast Advisory Committee and coordinate advice from member agencies.

The Western Australian Planning Commission will prepare a statutory region scheme to support the Ningaloo coast regional strategy Carnarvon to Exmouth and has prepared a Ningaloo coast statement of planning policy 6.3. In the meantime a regional interim development order has been introduced by the WAPC to secure short term planning and development control. These mechanisms are being established in accordance with the procedures of the *Western Australian Planning Commission Act* in consultation with local government authorities.

Figure 32: Regional interim development order area



## Statutory region scheme

Broadly, region schemes provide statutory mechanisms to assist regional planning and development control, coordinate the provision of major infrastructure and set aside areas of regional open space and other community purposes. The areas for region schemes usually include land within more than one local government area. The content of a region scheme may vary for different regions depending on the planning needs to be addressed.

Region schemes must be prepared and amended by the procedures prescribed in legislation (section 18 of the *Western Australian Planning Commission Act*). They are also required to be referred to the Environmental Protection Authority (EPA) and, if assessed, may have environmental conditions incorporated into them. Currently, region schemes are in place for the Perth Metropolitan Region and the Peel Region and a region scheme for the Greater Bunbury Region is currently undergoing environmental assessment by the EPA.

The region scheme that the WAPC intends to prepare for the Ningaloo coast will provide a statutory planning basis to the Ningaloo coast regional strategy Carnarvon to Exmouth. This is in recognition of the state and environmental significance of the area and the need to ensure effective and coordinated planning and development control of the Ningaloo coast. The boundary of the region scheme for the Ningaloo coast will cover the area from Carnarvon to Exmouth (excluding the townsites) west of the North West Coastal Highway and Minilya - Exmouth Road to the coast (Figure 32).

The process for making a region scheme is expected to take at least two to three years and therefore the WAPC has made a regional interim development order to ensure immediate planning and development control to support the Ningaloo coast regional strategy Carnarvon to Exmouth.

## Regional interim development order

A regional interim development order is made by the Western Australian Planning Commission (section 21 *Western Australian Planning Commission Act*) for the regulation, restriction or prohibition of development of land where a region scheme is to apply and where development of that land might affect the preparation or implementation of that scheme. A regional interim development order in essence requires any specified development to be approved by the WAPC whilst a region scheme is being prepared.

The boundary of the regional interim development order for the Ningaloo coast is shown in Figure 32 and covers pastoral exclusion areas, Coral Bay and local government reserves at the Blowholes.

## Statement of planning policy

A statement of planning policy (SPP) is the highest order of planning policy. It is a statutory policy made under section 5AA of the *Town Planning and Development Act 1928* and is approved by the Minister and gazetted (once approved by the Governor). A statement of planning policy may make provision for any matter that may be the subject of a town planning scheme and is generally concerned with planning controls and to coordinate and guide planning and decision-making by state and local governments, the Town Planning Appeal Tribunal and other agencies.

The Ningaloo coast statement of planning policy 6.3 requires planning and development decision making to apply the objectives, principles, terms, actions and guidelines of the Ningaloo coast regional strategy Carnarvon to Exmouth which thereby strengthens their application for sustainable outcomes on the Ningaloo coast.



The boundary for the Ningaloo coast statement of planning policy 6.3 is the study area of the Ningaloo coast regional strategy Carnarvon to Exmouth.

### 1.3.2 Management

The Government has also committed to the Ningaloo coast being managed as public lands for conservation and recreation and it is the State Government's intention to vest the coastal strip currently being negotiated for exclusion from pastoral leases generally in the Conservation Commission of Western Australia. The vesting is subject to the outcomes from the pastoral exclusion negotiation process, the resolution of native title, the arrangements required for a management model to be defined in sufficient detail (including partnerships, funding models and development of management plans) and for the management of leases for tourism nodes and dispersed camping to be determined. Two options, to be resolved, for the control of leases for tourism nodes have been identified:

- Arrangements being established with the Conservation Commission of Western Australia for the creation of special leases of sufficient tenure to facilitate development of the nodes; or
- Vesting of the tourism nodes in the Department for Planning and Infrastructure.

Camping along parts of the Ningaloo coast currently occurs both in the Ningaloo Marine Park and on pastoral leases outside the Cape Range National Park. Although this has been managed in various ways by the different pastoral lessees, the activities of increasing numbers of campers is leading to some degradation of the coastal environment and posing a risk to the Ningaloo Reef.

All camping along the coast is to be formalised into managed camping across a range of experiences within remote to semi-remote settings. This will assist in the reduction of environmental degradation (vegetation clearance, ad hoc creation of four-wheel drive tracks, waste management, etc) caused by unmanaged camping.

Camping may include the delineation of single campsites to multiple camp sites, camping grounds, small groupings or small commercial operations such as an ecocamp. These would be defined in association with coastal features or activities to a defined level of management, experiential setting and ability of the site to sustain use.

Identification and suitability assessment of existing and potential dispersed camp sites are not included in this Ningaloo coast regional strategy Carnarvon to Exmouth. The detailed level of site planning is assessed more appropriately in an area management plan.

Rationalisation of some existing campsites to prevent long-term environmental damage may occur and lead to defined and managed campsites that do not detract from the natural and remote visitor experience. In the short-term, much of the camping will continue to occur on pastoral leases. Management of this camping will occur through a partnership with pastoral leaseholders, relevant state agencies, local government, Aboriginal interests and visitors camping along the coast. Management of coastal camping in the longer term will also need to take in to account the staged development of tourism opportunities identified along the coast and resolution of vesting and management arrangements.



### 1.3.3

## Key implementation actions

Decision-making processes and actions to ensure development outcomes are delivered in line with the overarching objectives to protect the Ningaloo coast and provide low key, low-impact nature-based tourism opportunities and sustainable use of the Ningaloo coast are expected to be based on:

1. **The objectives and principles of the Ningaloo coast regional strategy Carnarvon to Exmouth and the Ningaloo coast statement of planning policy 6.3.**
2. **The Ningaloo coast regional strategy Carnarvon to Exmouth**, which includes the following documents:
  - Regional land use plan
  - Coastal tourism framework
  - Planning and environmental guidelines for sustainable tourism on the Ningaloo coast
  - Carnarvon structure plan
  - Exmouth structure plan
  - Coral Bay settlement plan.
3. **A requirement that no further development be undertaken on the Ningaloo coast until the following conditions are met:**
  - i) Coral Bay
 

No further development at Coral Bay will be permitted until:
  - A. The tourism settlement has been provided with appropriate infrastructure to service an overnight population of 2800, consistent with the first stage of the construction of the sewerage treatment facility. The required infrastructure includes connection to an appropriate sewerage treatment plant, provision of a public utility potable water supply and the provision of a public

power supply to service the settlement,

- B. Appropriate workers' accommodation has been provided as detailed in the Coral Bay settlement plan; and
- C. An inventory of existing accommodation within Coral Bay has been completed and bed numbers comply with approved limits.

#### ii) Coastal tourism nodes

No new development shall be considered outside of Carnarvon and Exmouth townsites and Coral Bay in the areas nominated for exclusion from pastoral leases until land vesting and tenure in relation to the coastal exclusion process has been agreed.

Preparation and assessment of more detailed plans for each tourism site.

#### 4. **A requirement that development on the coast within designated areas be staged, taking in to account the following:**

##### i) Coral Bay

Development and redevelopment within Coral Bay shall be controlled and staged in an orderly manner to ensure that the population does not exceed its maximum development potential of 3600 overnight visitors, 400 workers (including partners and dependants) and 500 day visitors.

Growth shall be monitored to ensure that the overall cumulative impact of development is understood prior to further consideration of additional tourist accommodation.

Consideration of development shall be based upon the capacity of infrastructure provided at that time and performance assessment of any existing development against the policies set out in the Planning and environmental guidelines for sustainable tourism on the Ningaloo coast.

Additional research and investigation into the most suitable mechanisms to implement the Coral Bay settlement plan shall be built in to the processes for implementation of the plan.

#### ii) Coastal tourism nodes

As part of the implementation of the strategy further definition of the staging of development along the Ningaloo coast is required. It is expected that a range of tourism opportunities will be provided at the nodes identified, ranging from camping through to ecolodge style accommodation. Both government bodies and private operators will provide these tourism opportunities, which will be developed as part of the implementation of the strategy. This may include staging within identified coastal tourism nodes, and staging of development opportunities along the Ningaloo coast.

The basis of staging of tourism development shall include:

- protection of the fragile environment of the Ningaloo Reef and coastal landforms;
- the need for proactive planning and provision of sustainable tourism development on the Ningaloo coast;
- the guiding principles of the Ningaloo coast regional strategy Carnarvon to Exmouth;
- objectives of the Ningaloo coast statement of planning policy 6.3;
- limits of available infrastructure;
- development of environmental monitoring and audit systems to gauge environmental impacts (input to the cumulative impacts assessment framework);
- consideration of all new proposals within a cumulative impact assessment framework containing

identified levels of acceptable change thresholds;

- water availability;
- existing environmental pressure;
- pressure on the environment by existing tourism use;
- provision of a range of tourism accommodation to cater for a variety of visitor experience;
- recognition of the lack of tourism accommodation on certain sections of the Ningaloo coast;
- policies of the Planning and environmental guidelines for sustainable tourism on the Ningaloo coast;
- estimates of future tourism visitation and market trends;
- recognition of established coastal tourism nodes;
- where appropriate, commercial viability and opportunities for a diversity of sustainable tourism developments to be realised on the Ningaloo coast; and
- opportunities for sustainable tourism development will be offered through a public competitive tendering process.

### 5. Implementation strategy

An Implementation strategy will be prepared by the Ningaloo Sustainable Development Committee to program and prioritise the actions identified in this strategy and to identify other actions necessary to ensure the effective and efficient implementation of the Ningaloo coast regional strategy Carnarvon to Exmouth.

In addition to the specific recommendations, actions and guidelines identified in the Ningaloo coast regional strategy Carnarvon to Exmouth, the Implementation strategy will include the following key strategic areas:

- Staging of development
- Economic feasibility of development opportunities
- Infrastructure
- Management of accommodation and visitation capacity
- Environmental management framework (including a Resources strategy)
- Coastal access
- Research and monitoring
- Implementation mechanisms (regulation, economic instruments, resourcing, education/awareness raising)
- Cumulative impacts (environmental monitoring, auditing and threshold targets; social and economic factors)
- Decision support systems – including benchmarks and targets based on cumulative impacts
- Communication, visitor education and capacity building

In addition, a number of detailed implementation matters were raised in submissions on the draft strategy that will make a positive contribution to its implementation. The final report on submissions will identify those that have been agreed or noted to be addressed in the Implementation strategy.

## 6. Review

It is intended that this strategy be reviewed no later than 5 years after its adoption by State Government, however, should the processes of implementation identify requirements that are substantially at variance from this strategy and that merit review, then those matters should be openly consulted as though the strategy itself was under review.







# Part two

## Ningaloo coast statement of planning policy 6.3





# Ningaloo coast statement of planning policy 6.3

## 1. Citation

This is a statement of planning policy made under Section 5AA of the *Town Planning and Development Act 1928* (as amended). It applies to the planning decision-making within the area identified in section 3 Application of the policy. This policy may be cited as Ningaloo coast statement of planning policy 6.3.

## 2. Background and purpose

The Western Australian Planning Commission in July 2003, released a discussion paper titled *Future directions: sustainable tourism and land use scenarios for the Carnarvon-Ningaloo coast*. A series of public information sessions, community planning days, and direct consultation involving State agencies and local government, key stakeholders and the general public were undertaken in 2003. This extensive consultation on the options canvassed in the paper was actively pursued and the feedback from was used to formulate a draft statement of planning policy 6.3 and the related draft Carnarvon-Ningaloo coast regional strategy. Extensive public consultation and assessment of submissions received on both the draft policy and draft strategy have been used to formulate this policy.

This policy has been prepared by the Commission under Section 5AA of the *Town Planning and Development Act 1928*. Under section 5AA of the Act, local government must have due regard to this policy in the preparation or amendment of town planning

schemes, strategies and policies, and when providing comment and advice on planning applications that deal with land within the Ningaloo coast policy area. The commission also will be guided by this policy in its decision-making and recommendations to the Minister for Planning.

Related planning policies are:

- State planning framework statement of planning policy 1
- Environment and natural resources statement of planning policy 2
- State coastal planning statement of planning policy 2.6

## 3. Application of the policy

The Ningaloo coast statement of planning policy 6.3 applies to all land within the Ningaloo coast policy area (Figure 33).

## 4. Policy objectives

The four key objectives of the policy are:

1. Provide state agencies, local government, community and proponents with clear guidance regarding acceptable and sustainable development on the Ningaloo coast.
2. Maintain the Ningaloo coast as an all-seasons recreation and nature-based tourism destination and limit growth with managed staged development, to ensure that the community continues to enjoy a remote and natural experience.
3. Preserve and protect the natural environment and enhance and rehabilitate degraded areas within the environment.
4. Consolidate future residential, commercial, higher-impact tourism and



industrial development in the towns of Carnarvon and Exmouth and provide strategic directions for their future growth.

## 5. Policy measures

### 5.1 Guiding principles

The following guiding principles will be used to assess all future planning and development on the Ningaloo coast to ensure the protection and sustainable use of the environment for the future.

#### 1. Sustainable development

All planning and development must meet the needs of current and future generations through appropriate land use and planning policies and practices which integrate environmental protection, social advancement and economic prosperity in the interests of sustainable development.

#### 2. Community aspirations

Future planning and decision making must be consistent with the vision for the Ningaloo coast, including equity of access for a range of visitor experiences in different settings for all people from those seeking a remote and natural experience along the coast or the infrastructure and services provided for in the towns of Carnarvon and Exmouth.

#### 3. Aboriginal heritage

All planning and development must provide for the ongoing protection of Aboriginal heritage (if there are direct impacts), especially relating to the marine environment, and the continuation of Aboriginal use and caring for country. Where relevant, it

should also provide opportunity for the development of culturally appropriate tourism through the interpretation of Aboriginal heritage.

#### 4. Economic development

All planning and development should assist actively in the creation of regional wealth, support the development of new industries and encourage economic activity as long as these activities are in accordance with sustainable development principles. Planning and development must also support the provision and maintenance of infrastructure based on sustainability principles to service regional communities and develop and upgrade tourism infrastructure to improve the attractiveness of the region as a natural and remote place to visitors and residents alike.

#### 5. Interdependence

Development must not significantly interfere with current natural ecological processes. Ecological processes include both physical and biological systems, which are strongly interconnected. Changing one part of the environment may have an impact on other parts.

#### 6. Limits of acceptable change

Development must be within limits of acceptable change. The limits of acceptable change are defined as the degree of change a system can accommodate or buffer while still sustaining or returning to its desired characteristics. The limits may be defined by environmental, social or economic concerns. What is acceptable or appropriate is determined by consultation with governments and communities, as well as by legislation and regulations. The limits of acceptable change establish the maximum level of alteration for a resource that society is prepared to accept. Given the region's acknowledged fragile nature, more



reliance on scientific knowledge and research will be necessary in defining appropriate limits of acceptable environmental change for this region.

## 7. Precautionary principle

Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason to postpone measures to prevent environmental degradation. In applying this principle in planning and development, the following steps must be followed:

- The onus is on any proponent to show that development does not pose any likelihood of serious or irreversible harm of the environment.
- If the proponent cannot demonstrate there is no likelihood of such harm, the onus is on the development proponent to show that the harm can be managed.
- If the proponent cannot demonstrate the harm will be managed, the development should not go ahead.

## 8. Cumulative impacts

All planning and development must consider its cumulative impact. The demand for and subsequent provision of tourism or recreational development along the Ningaloo coast may result in cumulative impacts as each new development proposal is added to existing development. The ad hoc establishment of developments along the Ningaloo coast has the potential to erode the remote and environmental values of the area over time and also may affect the economic viability of the individual development projects. If there is an unacceptable cumulative impact, the development should not go ahead.

## 9. Protection of high-conservation values

Planning must be based on the protection of high-conservation areas such as the Ningaloo Marine Park, Cape Range National Park and surrounds. These areas are rare and irreplaceable natural assets with outstanding scenic, recreational and scientific value, which have been identified as a potential world heritage area. Development must not adversely interfere with these values.

## 10. Protection of remote values

Remoteness is a dynamic concept, rather than a static one. It varies from place to place, through time as society's values change, and from person to person, therefore it is useful to describe remoteness in terms of relative values, rather than providing a definition. The Planning and environmental guidelines for sustainable tourism on the Ningaloo coast address specific issues which may affect remoteness values, for example emission of noise (eg power generation, vehicles and boats), light, smoke or dust, waste disposal (eg refuse disposal site, public toilets, evaporation ponds and pipe outfalls), visual impact (eg buildings and roads) or odour (eg sewage treatment). Development must not significantly interfere with any identified remote values.

## 11. Protection of biodiversity

Biodiversity underpins the processes that make life possible. Healthy ecosystems are necessary to maintain and regulate atmospheric quality, climate, fresh water, marine productivity, soil formation, cycling of nutrients, and waste disposal. Biodiversity is intrinsic to values such as beauty and tranquility. Australians place a high value on native plants and animals, which contribute to a sense of cultural identity, spiritual enrichment, and recreation. Biodiversity is central to

the cultures of Aboriginal and Torres Strait Islander peoples. Australian plants and animals attract tourists and provide food, medicines, energy and building materials. Our biodiversity is a reservoir of resources that remains relatively untapped. Planning must consider biodiversity, and development must not significantly interfere with the biodiversity in a particular area.

## 5.2 Planning

- (1) When preparing and considering local and regional planning strategies, structure plans, planning schemes and other planning instruments relating to the Ningaloo coast policy area the commission and local governments will apply the objectives, principles, terms, actions and guidelines of this policy and the following components of the Ningaloo coast regional strategy Carnarvon to Exmouth:

- Regional land use plan
- Coastal tourism framework
- Planning and environmental guidelines for sustainable tourism on the Ningaloo coast
- Carnarvon structure plan
- Exmouth structure plan
- Coral Bay settlement plan.

## 5.3 Determining applications

- (1) In determining all applications for subdivision, strata subdivision, the granting or variation of leases, development, redevelopment, changes of use and other planning decisions the commission and local government will ensure that:

- (a) no application will be approved within Coral Bay or the significant environmental areas which is

inconsistent with this policy and the following components of the Ningaloo coast regional strategy Carnarvon to Exmouth:

- Regional land use plan;
- Coastal tourism framework;
- Planning and environmental guidelines for sustainable tourism on the Ningaloo coast; and
- Coral Bay settlement plan.

- (b) no applications for higher impact tourism, residential, commercial or industrial developments will be approved unless:
  - (i) they are within the townsites of Carnarvon and Exmouth; and
  - (ii) consistent with this policy and the relevant structure plan components of the Ningaloo coast regional strategy Carnarvon to Exmouth; and
  - (iii) consistent with the applicable local planning strategy policies and objectives and town planning scheme.
- (c) All development proposals should be referred to the Environmental Protection Authority where there is likely to be a significant impact on the environment.

- (2) Significant environmental areas are outlined on Figure 33, and include pastoral lease exclusion areas, national park, marine park, state and local government reserves, environmental protection management areas, conservation and multiple use areas and tourism or other leases.



## 6. Implementation

- (1) Implementation will occur through the commission and local governments applying the objectives, principles, terms, actions and guidelines of this policy and the following components of the Ningaloo coast regional strategy Carnarvon to Exmouth:
  - Regional land use plan
  - Coastal tourism framework
  - Planning and environmental guidelines for sustainable tourism on the Ningaloo coast
  - Carnarvon structure plan
  - Exmouth structure plan
  - Coral Bay settlement plan.
- (2) Implementation also will be supported by other decision-making authorities having due regard for the objectives of this policy and using the associated strategies, guidelines and plans identified in 6(1) of this policy in a consistent way in their own jurisdictions as applicable. In particular:
  - (a) The *Land Administration Act 1997* administers the use, development, leasing and subdivision of unallocated Crown land and pastoral leases. The Minister responsible for the *Land Administration Act 1997* should have due regard for this policy.
  - (b) The *Conservation and Land Management Act 1984* administers the management and commercial opportunities within lands and waters reserved for conservation and recreation purposes. The Minister responsible for the *Conservation and Land Management Act 1984*, the relevant delegated decision-making authorities under the Act, the Conservation Commission of Western Australia and the Marine Parks and Reserves Authority should have due regard for this policy in making decisions for lands and waters within the policy area.
  - (c) The Department of Defence is encouraged to also have regard for this policy in the management of its land holdings within the policy area.
- (3) Co-ordination of relevant government activities to achieve the objectives and guiding principles of this policy will be undertaken by the Western Australian Planning Commission, supported by the Ningaloo Sustainable Development Office.
- (4) As part of the implementation of this policy and the Ningaloo coast regional strategy Carnarvon to Exmouth, further consideration of the proposed staging of development along the Ningaloo coast is required. It is expected that a range of tourism opportunities will be provided at the nodes identified, ranging from camping through to ecolodge style accommodation. This may include staging within identified coastal tourism nodes, and staging of development opportunities along the Ningaloo coast.
  - (a) The basis of staging of tourism development shall include:
    - protection of the fragile environment of the Ningaloo Reef and coastal landforms;
    - the need for proactive planning and provision of sustainable tourism development on the Ningaloo coast;
    - the guiding principles of the strategy;
    - objectives of the statement of planning policy;
    - development of environmental monitoring and audit systems to gauge environmental impacts (input to the cumulative impacts assessment framework);
    - consideration of all new proposals within a cumulative impact assessment framework containing identified levels of acceptable change thresholds;
    - limits of available infrastructure;



- water availability;
- existing environmental pressure;
- pressure on the environment by existing tourism use;
- provision of a range of tourism accommodation to cater for a variety of visitor experience;
- recognition of the lack of tourism accommodation on certain sections of the Ningaloo coast;
- policies of the Planning and environmental guidelines for sustainable tourism on the Ningaloo coast;
- estimates of future tourism visitation;
- recognition of established coastal tourism nodes;
- where appropriate, commercial viability and opportunities for a diversity of sustainable tourism developments to be realised on the Ningaloo coast; and
- opportunities for sustainable tourism development will be offered through a public competitive tendering process.

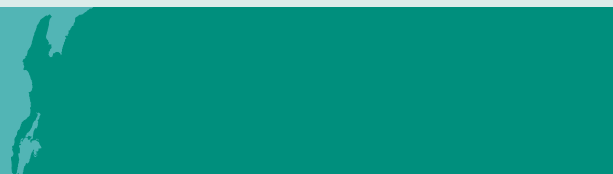
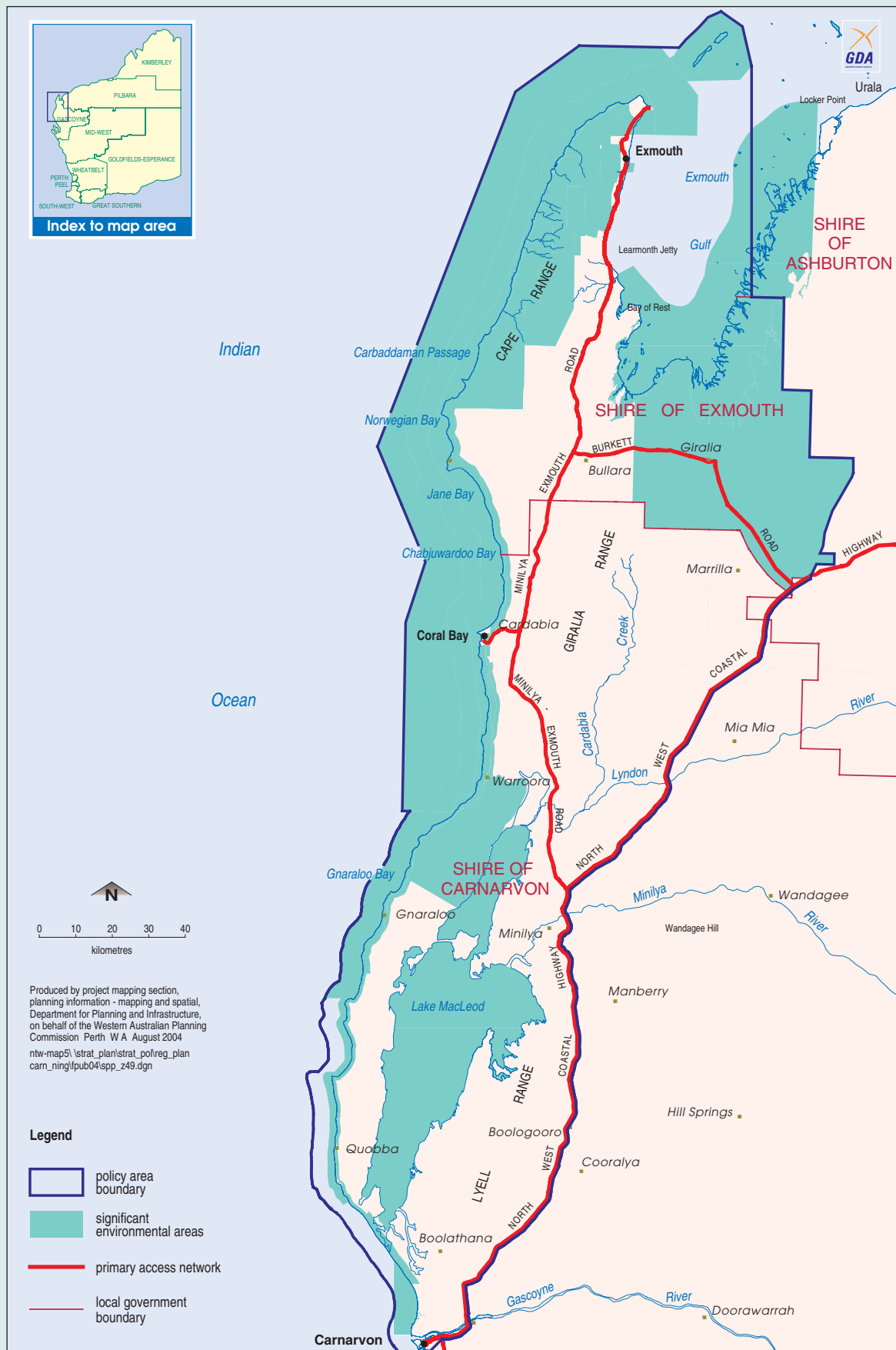
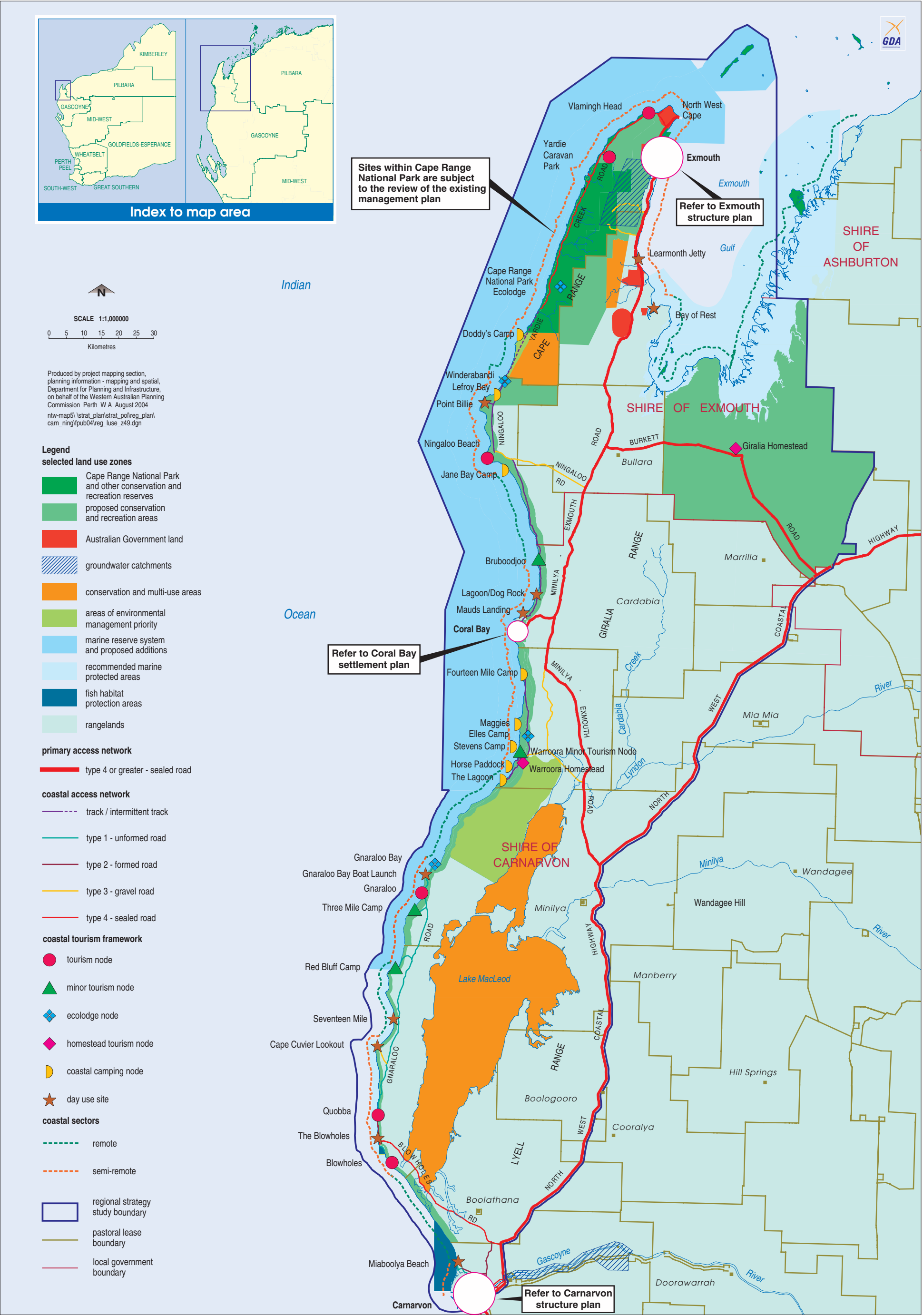


Figure 33: Ningaloo coast statement of planning policy 6.3







Regional land use plan

Figure 4





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