

12 February 2001

The Chairman
Environmental Protection Authority
8th Floor, Westralia Square
141 St George's Terrace
PERTH WA 6000

Attn: Dr Cameron Sim

Dear Sir,

RE: CORAL COAST RESORT PER

Please find enclosed the Conservation Council's submission on the Coral Coast Resort PER.

The recent "Status of Coral Reefs 2000" report has revealed the parlous state of the worlds coral reef systems. The principle threats are atmospheric and oceanic climate change, over-fishing and coastal and catchment development. The symptoms of decline have involved coral bleaching, disease epidemics, algal invasions, mechanical damage and the loss of bio-diversity. The decisions we make now about the future use and management of Ningaloo Reef must not be based on the State Government's agenda to promote tourism but on our international responsibilities to conserve a rapidly diminishing global heritage.

The long-term future of Ningaloo Reef in the face of changes in ocean climate are unknown and beyond the scope of regional conservation strategies. What we do know is that the fringing reefs on the eastern coast of Australia have been damaged or decimated by coastal development and the associated human use pressures. We must not make the same mistake at Ningaloo. **We believe the scale and style of the Maud's Landing development is environmentally and socially unacceptable and the adoption of this pattern of reef exploitation will spell the beginning of the end for the fringing reef system.**

Apart from the major alteration to landscape and coastal processes imposed by the engineering of a marina complex, the critical impacts of this project will result from the additional concentration of boats and people into a sensitive area that is already under excessive pressure. Nothing in the management system proposed will effectively mitigate those cumulative impacts.

In attempting to the deal with the planning and agency resource issues the regulatory responsibilities of CALM and Fisheries WA have been compromised. CALM and Fisheries have been offered facilities and resources by Coral Coast under a "Natural Resource Management Agreement" that may well enhance their corporate interests. These potential inducements

undermine public confidence in these agencies adequately fulfilling their obligations to provide independent advice to government on the impacts of the development or in later fulfilling their regulatory functions in relation to the developers. We are also concerned that the level of resources available to agencies to manage the likely impacts will be inadequate.

In our opinion the State Government, represented by WATC, should be considered a co-proponent of the development.

Ningaloo Marine Park Management Plan

The management plan for Ningaloo Marine Park (State Waters) expired in 1999. The proposal to prepare a Specific Area Marine Management Plan (SAMMP) therefore pre-empts any public input into revising the overall management regimen. Surely the overall management framework for the Ningaloo Reef System should be determined before any decisions are made to increase the intensity of use in the Coral Bay area.

Insufficient baseline study

Contrary to the guidelines for the development of this PER, baseline studies have not been completed. The information provided by the proponent on the populations of endangered, vulnerable and migratory species is clearly inadequate to assess the impact of increasing human disturbance. Fortunately the Commonwealth Minister for the Environment has opted for a separate PER on these issues of National Significance under the EPBC Act. This decision, although limited in scope, has provided some hope of a relatively independent assessment. We will now be directing its attention to the Commonwealth process.

We are concerned about the impact on coastal processes in the area and suggest that the DEP seek independent advice from a coastal geomorphologist.

Development inappropriate to the area

We believe that the concept of a marina-resort is totally inappropriate within what should ultimately be a World Heritage Area. We do not support the creation of a new development node on the west coast. Nor do we believe it is appropriate to promote this development as a way of dealing with the problems of Coral Bay. The problems of Coral Bay need attention regardless of this development.

The justification used by the developers and the Government that the area is a gazetted town site and therefore has to be developed is a nonsense. The townsite was gazetted in the late 19th century when there was no consideration of possible environmental impacts. Our appreciation of the adverse impact of development on the environment and environmental planning has moved on since then. The townsite gazettal should be revoked.

Special values of the area to be impacted

We would particularly like to draw to the attention of the department the extraordinary suite of environmental values, which overlap at the southern end of Bateman Bay. This is surely one of the most extraordinary places on earth.

Within metres of the beach, for most of the year, manta rays aggregate to feed and almost certainly mate. Five species of turtle frequent the immediate waters and three of them use this beach for breeding. Dugong graze seagrass beds within a few hundred metres in every direction. Point Maud, 2km away is an important roost for migratory birds. Just off the point a shark gutter, an habitat for large predatory sharks. Just around the corner black-tip reef sharks aggregate to

mate and pup. The south of Bateman Bay is acknowledged as an important shelter for whales and calves as they migrate. Even the mighty whale shark, usually found outside the reef, is occasionally sighted close to the shore here. The large area of near shore coral formations of Bills Bay, coupled with the sand and seagrass areas of southern Bateman Bay, and the unusual 'bend' in the Ningaloo Reef at Cardabia passage seem to create an area of great importance to marine life. Indeed, anecdotal evidence suggests that sightings of whale sharks and whales are more numerous here (off Cardabia passage) than elsewhere on the reef.

This area is the 'jewel in the crown' of Ningaloo Reef. As far as we are aware nowhere else on the Ningaloo Reef do all these values overlap. This proposal is ill conceived, and if the PER is any measure, will be just as poorly executed.

We call on the DEP to recommend against this development. We further seek an EPA undertaking to recommend for –

- Establishment of an Environmental Protection Policy (EPP) over the area (Ningaloo/Cape Range Peninsula /Exmouth Gulf). This should be supported by the development of a Statement of Planning Policy (SPP).
- Development of an integrated management plan centered on protection of the natural and cultural heritage values of the area.
- Completion and implementation of management plans (State and Commonwealth) for Ningaloo Marine Park before any decision is made with respect to any new developments.
- Improvement of the management of Coral Bay including reduction of impacts and population pressure, the latter in the light of region-based human carrying capacity assessment.
- Fuller consideration of alternatives which keep residential and accommodation developments away from the west coast of the Cape Range Province (as described in the Environmental Protection Authority's - Position Statement No1)

As a consequence of the above we don't see a lot of benefit in debating all the material presented by the consultant. Nevertheless we have noted numerous omissions, inadequacies, unjustified assumptions and creative perspectives in the PER. Some of these are summarised in the attached table.

We wish to express our concern over recent reports in the media about apparently 'hidden' ownership issues relating to CCMD Pty Ltd.

Please find attached our specific comments on:

- 1) The PER's failure to meet EPA Objectives and Guidelines
- 2) Specific concerns with relation to –
 - a. Turtles
 - b. Manta rays
 - c. Dugong
 - d. Whale sharks
 - e. Cetaceans
- 3) Specific concerns in relation to
 - a. Public Consultation
 - b. Regional Economic Impacts
- 4) Supporting documentation including important messages from Prof. David Bellamy, Dr Geoff Taylor and Tim Winton
- 5) Copies of recent media reports on CCMD company ownership.

Thank you for the opportunity to comment upon this proposal

Yours sincerely,

Rachel Siewert
Co-ordinator

EPA OBJECTIVES/GUIDELINES	COMMENT
<p>EPA GUIDELINES – SPECIFIC (Vol 2 – Sect 2 – Part A)</p> <p>Environmental Issues 1 – Objectives</p> <p>i) Maintain the ecological function, abundance, species diversity and geographic distribution of marine flora and fauna, locally and regionally.</p> <p>ii) Maintain the integrity, function and environmental values of Ningaloo Reef and the foreshore area</p> <p>iii) Demonstrate that the environmental values of Ningaloo Marine Park will not be compromised by this proposal</p>	<p>This proposal will fail all three objectives -</p> <p>i) The PER admits that there will be unavoidable impacts on a number of these. Specifically, mantas, turtles and seagrasses. (see relevant sections)</p> <p>ii) The PER only ‘undertakes’ to manage impacts which threaten this maintenance, eg. Increases in fishing pressure, litter, nutrient outputs, boating impacts on wildlife, etc. It neither demonstrates a sincere will, nor cites examples of effective management from other similar developments. It puts forward glib management strategies which rarely amount to more than monitoring and education. Financial commitments to support agency management in the area are suspicious, contradictory and unbelievable.</p> <p>iii) The PER fails to provide a convincing demonstration – in fact it guarantees that it will irrevocably alter significant aspects of the Park.</p>
<p>ENVIRONMENTAL FACTORS – Scope of Work</p> <p>1.2 Identify the abundance, species diversity and geographic distribution of marine flora</p>	<ul style="list-style-type: none"> This has not been done. The few paragraphs describing seagrass and macroalgal communities cannot possibly satisfy the DEP that this has been completed in any meaningful way. <p>The PER states (Vol 1 4.2.3) ‘Figure 10 modified from data compiled by CALM from aerial photography and confirmed by survey, illustrates the marine habitats located in the vicinity of Mauds Landing.’</p> <p>Figure 10 is actually a map of the Ningaloo Marine Park boundaries. Figure 7 may be the aerial image referred to – but it shows only marine substrates and identifies no marine flora habitat at all. The PER itself identifies the well known fact that there are significant and important seagrass and macroalgal communities in the area.</p>

EPA OBJECTIVES/GUIDELINES	COMMENT
	<p>The PER seems to be trying to underplay the value and role of seagrass in the area:–</p> <p>‘The sparse occurrences of <i>H. ovalis</i> near Mauds Landing in association with the dugong’s seasonal and itinerant nature, suggest that the seagrass communities occurring in the study area while being possibly locally significant are of limited regional significance.’ (Vol 1 p 63) This statement also sits at odds with EPA objective 1.1 (above)</p> <p>Please note that the PER also states -</p> <p>‘No seagrasses will be directly impacted, however areas within 1m of the intertidal zone may be subject to boating and foraging impacts associated with increased tourism. During construction and the initial five years of operation, water quality, particularly the rate of light penetration through the water column, may be reduced. ’</p> <p>The PER defines a ‘Direct Impact Zone’ during construction, which covers an area of 9²km.</p> <p>There is little or no evaluation of the impacts of suspended solids upon local marine flora, which are clearly utilised by Dugong. At certain times of year these Dugong are very lean, suggesting that fodder may be in short supply, and indicating that no nett loss of seagrass (or macroalgals – see Dugong section) would be acceptable.</p>
<p>ENVIRONMENTAL FACTORS – Scope of Work</p> <p>1.3 Marine Fauna</p> <ul style="list-style-type: none"> • Carry out baseline studies to identify existing (marine) fauna in the relevant area. 	<ul style="list-style-type: none"> • This has not been done. <p>The desktop analysis of existing baseline data which has been conducted has</p>

EPA OBJECTIVES/GUIDELINES	COMMENT
<ul style="list-style-type: none"> Detail proposed measures to manage and/or mitigate impacts. 	<p>failed to reveal ANYTHING that would provide useful, or meaningful baselines for evaluating the impacts of this development.</p> <p>Without adequate baseline studies of the abundance and distribution of marine fauna in this area (particularly of mantas, dugong, cetaceans and turtles) this development must not be allowed to proceed.</p> <p>Detail of proposed measures is sparse, and fanciful. In most cases it amounts to nothing more than 'counting the dead'. Monitoring of impacts and education of the public will not successfully achieve the EDP'S OBJECTIVES in this critically sensitive area.</p> <p>We have no faith in the proponents undertakings to develop and implement management plans to mitigate against the many acknowledged impacts the development would have on marine fauna.</p> <p>The PER provides contradictory information on timelines for funding this management, provides little or no evidence that the management plans would be effective in achieving the EPA's objectives, and the proponents willingness to embark upon this project without adequate baseline studies being conducted FIRST, should set alarm bells ringing for the DEP.</p>
<p>2.1 Marine Water Quality</p> <ul style="list-style-type: none"> Assess the impact of the proposal on water clarity (turbidity); and consequent effects on ecological processes of Ningaloo reef, in both the near shore marine environment and within the land based marina. 	<ul style="list-style-type: none"> This has not been done in relation to the construction phase beyond the acknowledgment that it will impact water quality for 9²km for a period of up to 5 years. <p>'Indirect impacts on sensitive communities on the pavement, back reef and inner lagoon may occur as a result of increased turbidity resulting either from construction, or as a result of the increased boat traffic resulting from increased tourism or focus on boating activity away from the more sensitive Bills Bay.' (Vol 1 p 118)</p> <p>Development of the Coral Coast Resort has the potential to increase turbidity (during construction and to a limited extent during</p>

EPA OBJECTIVES/GUIDELINES	COMMENT
	<p>operation), and nutrient inputs could become higher. Excessive nutrient enrichment of waters results in increases in phytoplankton concentrations in the water and epiphyte (ie. algae) loads on seagrass leaves thereby reducing the amount of light reaching the leaves and causing the seagrasses to die of light starvation.</p> <p>Strategies for management of seagrasses may include infrastructure provision to regulatory agencies, education, surveillance, research and monitoring. (Vol 1 p 199)</p>
<p>EPA SPECIFIC GUIDELINES – PART A</p> <p>The proponent should ensure that the Environmental Review document demonstrates compliance with the goals, objectives and guiding principles of Ecologically Sustainable Development as set out in the National Strategy for Ecologically Sustainable Development and the principles set out in the National Strategy for the Conservation of Australia's Biological Diversity.</p>	<p>Far from demonstrating compliance with these national strategies, the PER at no stage even outlines the principles. On occasion, with regard to corals, seagrasses, etc. it makes the broad claim that the proposed management will be - 'Consistent with Government <i>New Horizons – the way ahead in Marine Conservation and Management</i> (Govt. of WA 1998) and in compliance with the broad goals, objectives and principles of Ecologically Sustainable Development as set out in the <i>National Strategy for Ecologically Sustainable Development</i> (Com. of Aust. 1992), ... etc.'</p> <p>This is a far cry from 'demonstrating' compliance.</p> <p>The guiding principles of The National Strategy for Ecologically Sustainable Development include -</p> <ul style="list-style-type: none"> • The global dimension of environmental impacts of actions and policies should be recognised and considered <p>We believe that Ningaloo Reef is of great international significance and that this action would have dire consequences for the environment and also for WA's and Australia's international standing should it proceed.</p> <ul style="list-style-type: none"> • Where there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

EPA OBJECTIVES/GUIDELINES	COMMENT
	<p>This development poses an extremely serious threat to the environment of Ningaloo Reef, and the PER demonstrates an extremely lack of scientific certainty.</p>
<p>ENVIRONMENTAL PROTECTION OF CAPE RANGE PROVINCE – POSITION STATEMENT No 1 (December 1999)</p> <p>4. EPA OBJECTIVES for the Environmental Protection of the Cape Range Province</p> <p>(ii) To ensure that all environmental systems are managed in accordance with the principles of ecologically sustainable development and the National Strategy for the Conservation of Australia’s Biological Diversity</p> <p>5. EPA PRINCIPLES for the Environmental Protection of the Cape Range Province</p> <p>1) The Cape Range Province should be managed according to sound ecologically sustainable development and biodiversity protection principles as outlined in Appendix 2.</p> <p>6) In all instances, developments should be the highest quality “best practice” with continuous improvement through an environmental management system. This should include ongoing research to foster knowledge of an area to enable better planing and management.</p>	<p>The Cape Range Position Statement Area includes the site of the proposed development.</p> <p>We do not believe that this proposal is in accordance with this objective (see EPA SPECIFIC GUIDELINES – PART A – above)</p> <p>Appendix 2 Cites the Precautionary Principle, Intergenerational Equity Principle and the Conservation of biological diversity and ecological integrity Principle. We believe that all 3 of these principles will be compromised if this project proceeds.</p> <p>We reiterate the paucity of baseline studies as a key indication that this is not a ‘best practice’ development. We are also extremely concerned at the conflicting information in the PER about undertakings to fund management. We point out that the PER (Vol 1 6.9.2) states – ‘The SAMMP for the MSMA will be implemented, in the first instance, for a period of five years following the structural completion of the Coral Coast Resort. It is anticipated that this will occur not less than twelve years following implementation of the proposal. At this time, a workshop and review will be held to determine the need for and continuation of all or any aspects of the SAMMP and ongoing funding opportunities.’</p> <p>Therefore it appears that there may be no overarching management plan for the area until 7 years from the beginning of construction, and then no</p>

EPA OBJECTIVES/GUIDELINES	COMMENT
<p>9) In assessing environmental acceptability of development proposals and meeting the environmental objectives for projects within the policy area, the EPA will employ the Precautionary Principle (Deville and Harding, 1997). This provides a means of considering environmental impacts where a high value element of the environment would be affected by development, and there is a lack of knowledge, or insufficient knowledge, or uncertainty about potential impacts and management of impacts and cumulative effects.</p> <p>10) From the environmental perspective, there should be no major development permitted on the west side of the Cape Range. (Area located within Planning Units 2&3 in the Exmouth-Learmonth Structure Plan North West Cape)</p>	<p>guarantee of any beyond 5 years after that. This does not constitute 'continuous improvement through an environmental management system'.</p> <p>In addition we are concerned that once sections of the proposal are developed and possibly sold off to other parties that the enforcing of management commitments will be extremely difficult and in fact unlikely.</p> <p>We argue that there is this a 'high value element of the environment' at risk in this case and that there is 'a lack of knowledge, or insufficient knowledge, or uncertainty about potential impacts and management of impacts and cumulative effects' for this proposal.</p> <p>We encourage the EPA to apply the same rationales (which generated this determination) to the area south of Yardie Creek - to include the balance of the west coast, to the southern boundary of the Ningaloo Marine Park. The extreme environmental sensitivities of a fringing reef of international significance do not end at a line on a map.</p>

PER STATES	COMMENT	REFERENCES
PUBLIC CONSULTATION & REGIONAL ECONOMIC IMPACTS		
<p>The PER states that only 46 people provided comments in the public consultation phase (Vol 1 p40). Issues table (Vol 2 Appendix 3) cites only 21 persons concerns.</p>	<p>Public consultation by the developer has been poor.</p> <p>The conservation movement conducted two public meetings</p> <p>Coral Bay – 23.01.01 (50 attendees) Exmouth – 29.01.01 (110 attendees)</p> <p>The purpose of the meetings was to convey the environmental concerns of the Conservation Council and other marine conservation groups and to draw out local knowledge and concerns relating to environmental, social and economic issues.</p>	

PER STATES	COMMENT	REFERENCES
<p>The strengthening of Coral Bay as a major tourist attraction was identified as possibly detracting from Exmouth, and to a lesser extent Carnarvon, as the major regional centres. This concern was specifically addressed in the Gascoyne Coast Regional Strategy (MfP 1996) requiring that for a development to be acceptable to government, there should be only a limited potential to compete with Exmouth and Carnarvon: (Vol 1 p 242)</p>	<p>Given the time of year, this must be seen as an unprecedented turn out of the local communities.</p> <p>Main themes emerging were –</p> <p>Coral Bay</p> <ul style="list-style-type: none"> ▪ Grave concern at the likely impacts of the proposal. ▪ Extreme frustration that long promised government support for solving environmental the problems of Coral Bay were being held back. <p>Exmouth</p> <ul style="list-style-type: none"> ▪ Grave concern at the likely impacts of the proposal. ▪ A perception that Exmouth was destined to become a ghost town if the proposal went ahead. <p>According to Gascoyne Coast Regional Strategy "for a development to be acceptable to government, there should be only a limited potential to compete with Exmouth and Carnarvon"</p>	<p>We support members of the Exmouth Shire and Exmouth Chamber of Commerce's view that the CCMD will have an irreversible and detrimental effect on the economy of the already struggling North West town of Exmouth.</p> <p>We agree with and support the related comments made by Mr Richard Todd in his submission to the DEP.</p>

PER STATES	COMMENT	REFERENCES
MANTA RAYS		
<p>The Ningaloo Reef Tract also supports a diverse and abundant ray population. These include the giant manta ray, (<i>Manta birostris</i>). Other rays occur throughout the Ningaloo Reef Tract from deep offshore waters to shallow near shore waters. (Vol 1 p 219)</p>	<p>Manta rays are totally protected under the Fisheries Resources Management Act 1994.</p>	
<p>Manta rays occur widely on the eastern margin of Bateman Bay, particularly north of Oyster Bridge. Aggregations of up to 100 animals are reported (Regan Kau, <i>pers. comm.</i>). Tourism operators (Doug Hunt, <i>pers. comm.</i>) have also observed feeding and mating activities. Mantas are known to occur off Maud's Landing. (Vol 1 p 109)</p> <p>Manta rays present an exceptional eco-tourism opportunity with interactions taking place immediately offshore of the proposed development site. (Vol 1 p236)</p> <p>Manta rays are also common elsewhere in Bateman Bay. (Vol 1 p 236)</p>	<p>This statement is misleading. The use of the words 'known to occur' fails to reflect the common knowledge that mantas regularly frequent the area immediately in front of the proposed resort.</p> <p>In fact the PER later boasts of the potential eco-tour opportunities 'immediately offshore'</p> <p>The suggestion is repeatedly made that Mantas are common elsewhere in Bateman Bay. It appears to be used as a rationale for the lack of an appropriate management strategy for this important asset in southern Bateman Bay.</p>	<p><i>Pers Comm.</i> Peter Shaw (Eco-tour operator) Map of sightings areas in Bateman Bay attached <i>Pers Comm.</i> Richard Todd (Cinematographer)</p>
<p>During aerial surveys undertaken in 1989 and 1994, manta rays were common in the northern half (Point Cloates to North West Cape) of the Ningaloo Marine Park (Preen <i>et al.</i> 1997). Manta rays are most often encountered immediately outside the Ningaloo Reef and appear to be more common in autumn. (Vol 1 p66)</p>	<p>Insufficient research has been carried out to determine the distribution of, and areas of importance to, mantas in Bateman Bay. These brief aerial surveys contribute little to knowledge of mantas in the area. We are concerned that this appears to be trying to underplay the importance of manta rays in the area.</p>	<p>Preen, A.R., Marsh, H., Lawler, I.R., Prince, R.I.T. & Shepherd, R. 1997, Distribution and abundance of dugongs, turtles, dolphins and other large vertebrate fauna in Shark Bay, Ningaloo Reef and Exmouth Gulf, Western Australia, <i>Wildlife Research</i> 24(2):185-208, 1997.</p>

PER STATES	COMMENT	REFERENCES
	<p>Mantas aggregate in group as small as 3 and as large as 100 in southern Bateman Bay and are present for most of the year.</p>	<p><i>Pers. Comm. Peter Shaw – local eco-tour operator</i></p>
<p>Increased boat activity originating from the Coral Coast Resort has the potential to disturb manta rays who are known to avoid high levels of activity. (Vol 1 p 236)</p>	<p>We agree however the developer's only concrete suggestion for mitigation (that DOT has the authority to restrict boating to channels) does little to allay our fears for the species in this area.</p>	
<p>The entrance to the marina channel is, however, in relatively deep water (5.0m+), with a significant number of boats anticipated to travel directly to Cardabia Passage. Careful monitoring of manta ray responses to the increased interactions, facilitated by a single point of entry, will enable the development of management strategies.</p>	<p>Once the marina is established and boat traffic to Cardabia Passage and elsewhere in Bateman Bay is underway, the only management tool available will be the 'monitoring of manta ray responses to the increased interactions'.</p> <p>Not only is this an inadequate response but given that no baseline monitoring has been undertaken how is any impact caused by the development to be determined? We believe there will be an inevitable decline in manta numbers in the area which unfortunately is unlikely to reflect negatively on the development, due to the lack of baseline monitoring.</p>	
<p>The techniques proposed for these elements of the SAMMP will, together with CALM, Fisheries WA and local tourism operators include: protocols and strategies to manage manta ray tourism experiences with a view to identifying sustainable levels of interaction, triggers to identify unacceptable impacts and management procedures should this occur. (Vol 1 p 207)</p>	<p>The need for a manta interaction code of practise is an established fact and a priority for many of the existing tour operators. We do not need CCMD to enable the development of this code. How would this be enforced?</p>	
<p>Manta ray movements along this portion of the coastline will be interrupted, however it would seem as though they are common in Bateman Bay generally and more so in the areas north of Oyster Bridge.</p>	<p>The developer's reference to the work by Preen et al as a rationale for not being too worried about the use of this area by mantas is in our opinion an inappropriate interpretation of the data.</p>	

PER STATES	COMMENT	REFERENCES
<p>DUGONG</p> <p>The Dugong is the only fully herbivorous marine mammal in Australia waters. It is now extinct or near extinct in most of its former range that extended from East Africa to South-East Asia and the Western Pacific (Comm. of Aust. 1995). Northern Australia has the last significant population (estimated as 80,000 in 1995). The species is large, long lived and has a slow reproductive cycle. The dugong is listed by the IUCN as 'vulnerable to extinction' (Vol 1 p110/209)</p> <p>Major concerns in managing the species relate to loss of seagrass. (Vol 1 p104/209)</p> <p>The seagrass <i>Halophila</i> is eaten by the dugong (<i>Dugong dugon</i>) and is therefore ecologically important. (Vol 1 p63)</p> <p>The sparse occurrences of <i>H. ovalis</i> near Maud's Landing in association with the dugong's seasonal and itinerant nature, suggest that the seagrass communities occurring in the study area while being possibly locally significant are of limited regional significance. (Vol1 p199)</p> <p>Seagrasses are primary producers important in habitat and nursery areas and support high species diversity. Seagrasses also trap and bind sediments thereby helping to maintain water clarity. (Vol 1 p103)</p> <p>Seagrasses are generally sensitive to water quality, especially to nutrients, some chemical residues and light attenuation through the water column. (Vol 1 p103)</p> <p>No seagrasses will be directly impacted. (Vol 1 p104)</p>	<p>Although the more frequent threats to the dugong seen mainly in East Africa and Asia, such as overfishing and mortalities in fishing nets would not necessarily be of concern in Coral Bay, loss of seagrass habitat would, as is the problem widely experienced in the Florida with the rapid development of coastal areas, causing increased mortality due to recreational boat propeller damage. Dugongs are large, slow moving and air breathing, therefore spend intervals near or at the surface. Increased recreational boating activity in Coral Bay, especially around the seagrass areas would bring boats in close proximity with dugong populations. In addition given the threats faced elsewhere in the world we believe it is unacceptable to further threaten them in what should be expected to be a safe and protected environment in the Ningaloo Marine Park.</p> <p>The PER has no mention of how to monitor or manage boat collisions or dugong mortalities within the area to be managed and merely groups them with Cetaceans as a whole.</p> <p>As the dugong is recognised as "vulnerable to extinction", Australian populations need extensive protection to prevent extinction due to diminished habitat</p> <p>The importance of seagrass as a habitat and in the diet of dugongs is stated within the PER. This habitat therefore requires conservation to prevent dugong habitat loss.</p> <p>The populations of seagrass near Mauds Landing are</p>	

PER STATES	COMMENT	REFERENCES
<p>During construction and the initial five years of operation, water quality, particularly the rate of light penetration through the water column, may be reduced. (Vol 1 p104)</p> <p>Development has the potential to increase turbidity and suspended solids (during construction dredging and to a limited extent during operation), and nutrient inputs could become higher. (Vol 1 pV Table A1)</p> <p>Excessive nutrient enrichment of waters results in increases in phytoplankton concentrations in the water and epiphyte (ie. Surface algae) loads on seagrass leaves thereby reducing the amount of light reaching the leaves and causing the seagrasses to die of light starvation. (Vol 1 p15/199)</p> <p>Areas of seagrass within 1m of the intertidal zone may be subject to boating and foraging impacts associated with increased tourism. (Vol 1 p85, 104)</p> <p>Observation of seagrasses within the MSMA indicate that they are generally in good condition although some localised damage may have occurred due to anchors being set in Bateman Bay. There is no evidence of heavy epiphytic growth on seagrasses at present. (Vol 1 p199)</p> <p>Dugong (<i>Dugong dugon</i>) is the only fully herbivorous marine mammal in Australia. It is now extinct or near extinct in most of its former range that extended from East Africa to SouthEast Asia and the Western Pacific (Comm. of Aust. 1995). Northern Australia has the last significant population (estimated as 80,000 in 1995). The species is</p>	<p>simply dismissed as being “Of limited regional significance” in the PER without investigation into the numbers of dugongs and other species that are associated with these seagrass beds.</p> <p>The importance of maintaining the seagrass habitats within the marine environment is acknowledged and therefore should be preserved. Area water clarity is especially important as corals are also largely dependent on sunlight to survive.</p> <p>The PER acknowledges the sensitivity of such submerged plants to water quality.</p> <p>While areas of seagrass are not in the direct vicinity of the Coral Bay marina dredging, increased water turbidity caused during site development would be detrimental to seagrass beds in the vicinity due increased water turbidity causing die-back due to reduced sunlight reaching the seabed. Increased water turbidity is a potential problem recognised in the PER due to dredging and marina construction.</p> <p>Chemical and nutrient input into Bateman Bay either during or after construction could impact on this and other seagrass habitat areas due to increased smothering by</p>	

PER STATES	COMMENT	REFERENCES
<p>large, long lived and has a slow reproductive cycle.</p> <p>Major concerns in managing the species relate to overfishing by indigenous communities, mortalities in fishing nets, and loss of seagrass habitat. The dugong is listed by the IUCN as 'vulnerable to extinction', but not as yet listed under the <i>Environment Protection and Biodiversity Conservation Act 1999</i>.</p>	<p>epiphyte growth on seagrass leaf surfaces. Without investigation into the numbers of dugongs and other species that are associated with these habitats, it is impossible to conclude how important their presence in Bateman Bay area is.</p> <p>Populations of seagrass within shallow reaches are at risk from increased human boating activity in the area and with this habitat damage comes the risk that the dugongs, will also come closely into contact with humans.</p> <p>As confirmed within the PER, current limited boat mooring practices in Bateman Bay are already impacting on the seagrass beds. A further increase in boating activity with the additional 240 mooring spaces in the proposed marina would definitely increase pressure on these seagrass beds.</p>	

PER STATES	COMMENT	REFERENCES
WHALE SHARKS		
The whale shark has been given 'indeterminate' status by the IUCN. (Vol 1 p 108)	This is incorrect –The whale shark is listed as vulnerable to extinction by the IUCN.	<i>IUCN Red List</i>
Whale sharks congregate at Ningaloo on a seasonal basis and as a consequence have been subject both to tourist and scientific interest (Taylor 1996; Davis <i>et al.</i> 1997; Taylor & Pearce 1999). The whale sharks move from offshore waters into the Ningaloo Marine Park where they congregate from March to May each year when corals undergo mass spawning. P66	Ningaloo Marine Park is one of the only places in the world where a predictable aggregation of this species occurs close to shore.	
Whale sharks are the subject of immense tourist interest (Davis <i>et al.</i> 1997; Norman 1999). The whale shark tourist industry has developed into a major tourist attraction. Regulations control boat activity and diver access in the vicinity of whale sharks, and it is recognised that modifications to the regulations are ongoing as the needs of the whale sharks are recognised. Nevertheless, in the past, there have been instances of boat contacts with whale sharks (blue antifouling paint marks on the whale sharks, propeller damage to fins), and some whale sharks, particularly previously injured animals, avoiding boats (Norman 1999).	Our primary concern in relation to whale sharks is the substantial increase in boating traffic which will cross the sharks line of travel North-South and South-North at Cadabia Passage. In Phase 1 of the development 240 boats (or more) can be handled. In later stages of the development we could see many hundreds of boats dissecting the sharks path. The suggestion that this can be 'managed' under a Marine mammal and Specially Protected Fauna Management Plan is ludicrous. Once pleasure craft reach open water (the point at which whale shark interactions are most likely to occur), control over these craft is very limited.	
Whale sharks and manta rays are protected within the waters of the Ningaloo Marine Park where they provide a focus of a growing dive-tourism industry. In consultation with the industry, CALM has developed an industry 'code of conduct' for interactions with whale sharks, including the keeping of log-books. Coleman (1997) presents summary data for the period 1993 to 1996 regarding the number of participants in whale shark interaction tours, inclusive of both Exmouth and Coral Bay operators. An almost three fold increase was recorded over the period taking	Whale shark researcher Brad Norman has recommended strengthening of the CALM Code of Conduct for Whale Shark interactions – to reduce impacts on the sharks. He has called for shorter interaction, greater boat and swimmer distances from the sharks, and greater caution in the expansion of licensing. The large and sudden increase in visitor numbers to the southern sections of the Ningaloo Reef which would	<i>Brad Norman: Submission to Ningaloo Marine Park Management Plan – Commonwealth and State waters 2000.</i> <i>Anecdotal</i>

PER STATES	COMMENT	REFERENCES
<p>numbers to a total of 2839. (Vol 1 p 108)</p>	<p>accompany this development can not be demonstrated to be sustainable. Relevant CALM research subsequent to 1996 is unavailable. In the ensuing 5 years visitor numbers have increased.</p>	
<p>'the sustainability of whale shark interactionswill be facilitated by the presence of CALM officers and a single point of entry for all licenced operators.' (Vol 1 p 109)</p>	<p>This statement is simplistic and misleading. Of the 15 licensed operators within Ningaloo Marine Park, only 2 vessels are permitted to operate in the waters near Coral Bay/ Point Maud.</p>	
<p>With the exception of whale sharks, these protected species are likely to be present in the MSMA. (Vol 1 p213)</p> <p>Table 12 (vol 1 p113) shows that whale sharks are only observed in open waters.</p>	<p>The assumption that whale sharks do not enter the southern Bateman Bay area is erroneous. While not a common occurrence, this does happen. A whale shark was photographed swimming within the ruins of the old jetty at Point Maud in Nov 1998.</p> <p>This contradicts Table 12 (Vol 1 p 113)</p> <p>Increased boating traffic and noise and sediment from dredging will deter entry to this area.</p>	<p><i>(Pers Cpmm. Yasmin Hunt – Local ecotour operator)</i></p>

PER STATES	COMMENT	REFERENCES
CETACEANS		
<p>The common dolphin and humpback whales are the only cetaceans that are regularly seen in the Ningaloo Marine Tract waters. While the dolphins are probably resident in park waters, humpback whales are transitory visitors to these waters during their annual migration northward along the Western Australian coastline each autumn (April/May). The humpback whales return to Ningaloo Marine Tract waters in spring (September/October) during their southern migration to summer feeding grounds in Antarctica. Species regularly encountered by tourism operators in the Ningaloo Marine Tract or waters adjoining include: common bottlenose dolphins (<i>Tursiops truncatus</i>), and Indo-Pacific humpback dolphins (<i>Sousa chinensis</i>), the humpback (<i>Megaptera novaeangliae</i>), minke (<i>Balaenoptera acutorostrata</i>), southern right (<i>Eubalaena australis</i>), and blue (<i>Balaenoptera musculus</i>), whales together with a range of smaller toothed whales and dolphins. Humpback calves are occasionally observed entering Bateman Bay to rest in the calm waters off Mauds Landing (Doug Hunt, <i>pers. comm.</i>). Killer whales (<i>Orca orca</i>), have also been observed within Bateman Bay. (Vol 1 p 111)</p>	<p>This passage is misleading – it sits at odds with the summary of relevant ecological values (Vol 1 p 186) which states –</p> <p>'Marine wildlife includes six species of toothed whales, while eight species of baleen whales have been recorded in deeper water offshore. Five of the eight species of baleen whales are listed as <i>rare or likely to become extinct</i> under the <i>Wildlife Conservation Act</i>.'</p> <p>It is also contradicted by (Vol 1 p113), which states</p> <p>Baleen whale feeding and basking observed offshore. Southern right cows and calves occasionally enter Bateman Bay to rest. Toothed whales and porpoises enter Bateman Bay and have been observed off Mauds</p> <p>Nowhere in the PER is the importance of this area to migrating whales and calves explored.</p> <p>Before any development which increased boating traffic in this area was approved, detailed analysis of whale movements and behaviours in Bateman Bay must be undertaken.</p>	
<p>Potential disturbance to cetacean populations in the MSMA waters are mainly from boat noise and collisions.</p>	<p>Our primary concern in relation to whales is the substantial increase in boating traffic which will cross the whales line of migration North-South and South-North at Cardabia Passage. In Phase 1 of the development 240 boats (or more) can be handled. In later stages of the development we could see many hundreds of boats dissecting the whales routes.</p> <p>The suggestion that this can be 'managed' under a Marine mammal and Specially Protected Fauna Management Plan is ludicrous. Once pleasure craft reach open water (the</p>	

PER STATES	COMMENT	REFERENCES
	point at which whale interactions are most likely to occur), control over these craft is very limited.	
The current incidence of entanglement of cetaceans in fishing gear or litter is considered to be low as historically commercial fishing has historically been limited in the area (Commonwealth of Australia 2000). (Vol 1 p 210)	This incidence will increase under the proposal as litter increases from greater visitation to the area. Other potential threats include lost shark netting and fishing gear.	
Proposed management strategies - Maintain records of the incidence of entanglement, boat collisions and stranding of cetacean and turtle species (CCMD, CALM, and Community). (M) Ensure whale interaction activities do not impact wildlife, through education programs and liaison with charter operators (CCMD, CALM) (L) (Vol 1 p210)	These strategies are not 'management' strategies. They amount to a policy of counting the dead, they are entirely inadequate and demonstrate scant regard on the part of the developer to minimise impacts on whales and calves, and other marine mammals. Interactions between whales and private pleasure craft will be virtually impossible to manage effectively.	
As visitor numbers and therefore recreational usage of the coast increases, the issues of swimmer safety, impacts on corals, recreational fishing, off road vehicle use, litter and beach use will become increasingly important. (Vol 1 p 161)	We agree, however we believe that the PER fails to adequately address the issue.	

PER STATES	COMMENT	REFERENCES
TURTLES		
Development of the SAMMP is well advanced (Vol 1 piii)	<p>Despite such claims no details of this plan are provided.</p> <p>It promises to include "detailed description of the ecological and social values of the area surrounding the proposed development (including the existing Coral Bay area), management objectives, strategies and targets to be determined through a monitoring program to be implemented". Such information is essential to adequately judge the impacts of the development on marine turtle species and the effectiveness of strategies designed to minimise them.</p>	
A Turtle Management Plan and Turtle Nesting Surveillance Program was described in section 5.3.3 (Vol 1 p 130).	<p>Despite this rather hopeful claim the description of the management strategies to protect marine turtles contained in this report is totally inadequate. No such description is available in section 5.3.3 (Vol 1 p109) and in those sections where reference is made to these programs the "descriptions" consist only of vague promises to develop these as part of the SAMMP (Vol 1 p89 and 229).</p> <p>Despite acknowledging impact to local marine turtle populations of very high conservation significance the report fails to:</p> <ul style="list-style-type: none"> - provide adequate information and baseline data on turtle utilisation of the area; - recognise all potential impacts; - propose (and commit to) management strategies for many recognised impacts; and - produce examples from other similar developments where such strategies have been applied successfully. 	
Aerial surveys of the Ningaloo Marine Park suggest that an estimated population of approximately 4300 turtles (all species) is resident within the park (Preen et al. 1997)	No adequate data is provided for the level of turtle utilisation within the MSMA. The report states that 71 nests were recorded during the 1999 - 2000 season (Vol 1	

PER STATES	COMMENT	REFERENCES
(p67, p185 and p208).	<p>p86) and that that 60 loggerheads are known to have nested on beaches within Batemans Bay during the 1999 – 2000 summer (Vol 1 p 89) however references are not provided. Turtle utilisation in the Cape Range Area is known to vary widely between years.</p> <p>Current utilisation by turtles may be well below potential utilisation as a result of turtle harvesting conducted in the area up until the 1960's and ongoing impacts throughout their range.</p>	
<p>Marine reptiles utilising the waters adjacent to Mauds landing may include four species of turtle... (p67, p185 and p208).</p> <p>...possibly nesting by marine turtles. (p55)</p> <p>...beachfront habitat is [as] potential nesting locations for marine turtles, particularly the loggerhead turtle (p 59 and p127)</p>	<p>Despite these numerous references to potential use of the area by marine turtles is acknowledged variously in other parts of the report and by Mack (1995).</p> <p>... Green, Hawksbill and Loggerhead turtles are common occupants of the area (p67)</p> <p>... Green, Hawksbill, Loggerhead and Flatback turtles are known from the area (Commonwealth Australia 2000) (p208)</p> <p>... four species of marine turtle have been recorded within the Ningaloo Marine tract (Vol 1, p110),</p> <p>These inconsistencies clearly indicate a failure by the developers to adequately assess the current turtle utilisation in areas to be impacted by this development.</p>	<p>Peter Mack 'Turtle Man' at Coral Bay; A study of Turtle breeding summer 1994/95</p>
<p>Loggerheads may use beaches for nesting (ie. Vol 1 p89 and p127)</p>	<p>Despite numerous references to potential usage of beaches in Batemans Bay by nesting loggerhead turtles it is acknowledged elsewhere in the report that such utilisation has been recently documented (Vol 1 p v, p57, p86, p110, p127 and p186).</p> <p>Indeed it is stated within the PER that 60 loggerheads are known to have nested on beaches within Batemans Bay</p>	

PER STATES	COMMENT	REFERENCES
	<p>during the 1999 – 2000 summer (Vol 1 p 89). This makes this beach a highly significant area for Loggerhead survival</p>	
<p>The major impacts on turtles while in Australian waters are ... (Vol 1 p109)</p>	<p>Of these 5 major impacts listed only hunting is not acknowledged by the report as expected to increase as a direct result of the development. As discussed in the following section, no adequate and effective management strategies for these four impacts (and other significant impacts) have been proposed.</p>	
<p>...Mortality of adults while in prawn nets, shark nets and gill nets... (Vol 1 p109).</p>	<p>Far from making a commitment to ensure such mortality does not occur as a result of this development, it is proposed that ...swimming embayments will be shark netted... (Vol 1 p22). This would result in significant marine turtle mortality and is totally inappropriate.</p> <p>The report does not recognise these shark nets as a potential pressure specific to this development and no comment is made on the monitoring or management of this impact (6.8.10, Vol 1 p 208).</p>	
<p>...Collisions with speed boats... (Vol 1 p109)</p>	<p>It is acknowledged that increased boat traffic will result from the implementation of the Coral Coast Resort (Vol 1 p109/110 and p208). This will inevitably lead to an increase in turtle mortality.</p> <p>The inadequate protection strategy proposed consists of maintaining records of the incidence of entanglement, boat collisions and deaths of turtle species (CCMD, CALM, and Community)(Vol 1 p208). No baseline data (pre-construction) is provided to indicate the ability of the developer to assess the impact on turtles of increased boat numbers. It would not be possible to collect such baseline data based on the current time scale which allows for construction to begin prior to the next turtle</p>	

PER STATES	COMMENT	REFERENCES
	<p>nesting period.</p> <p>There has been no proposal to monitor turtle numbers in the waters of the MSMA (this need not be related to numbers of nesting turtles on beaches nearby) and again no adequate baseline data has been provided. Therefore the desired negative trend of animal boat collisions (the stated performance indicator) may well represent a failure by the developers to manage impacts and maintain the local turtle population at pre-construction densities.</p> <p>No management strategies are proposed which may reduce the impact of boat collisions.</p>	
<p>...Habitat degradation; and... (Vol 1 p109)</p>	<p>It is acknowledged that destruction of 200 m of beach used by nesting turtles will be destroyed. The PER clearly states how turtles return to the same beach in order to breed (Vol 1 p109). The breakwaters will provide an obstruction to nesting turtles as well as removing nesting habitat for subsequent generations of marine turtle.</p> <p>It is acknowledged that the marine environment of the MSMA will be degraded through direct loss of marine flora due to placement of breakwaters and accretion, reduction in fish stocks and increased pollution and nutrients.</p> <p>It is recognised in the PER that increases in turbidity and suspended solids will occur in the MSMA especially during construction (Vol 1 p199). Algae are generally sensitive to water quality-particularly turbidity, but also to nutrients and suspended solids and some chemical residues (Commonwealth of Australia 1998).</p> <p>Green turtles feed on macroalgae and are by far the most common turtle on Ningaloo Reef (Vol 1 p186). Loss of macroalgae beds in the Bateman Bay area would result in localised lack of food for green turtles and could</p>	

PER STATES	COMMENT	REFERENCES
	<p>contribute to reducing numbers visiting Bateman Bay and the recognised existing Mauds Landing breeding beach.</p> <p>Hawksbill turtle populations are likely to be impacted on due to their main diet of sea sponges being very sensitive to smothering by increased suspended sediment loads, caused by the construction works within Coral Bay. To date, no research into sea sponge distribution within the affected area has been carried out (<i>Pers comm.</i>Jane Fromont).</p>	<p><i>Pers comm.</i>Jane Fromont Curator of Marine Invertebrates WA Museum</p>
<p>...Predation on eggs by feral animals... (Vol 1 p109)</p>	<p>Human settlements attract opportunistic pests such as foxes, feral cats and rodents. Numbers of these feral animals are expected to rise after construction (vol 1 p129). Dogs and cats associated with the development will also be introduced to the local area.</p> <p>This would increase the already significant impact that predation upon eggs and hatchlings has upon local turtle populations (Mack, 1995)</p> <p>Management programs could limit the increase of these feral species and should be implemented prior to construction. These strategies should include the prohibition of dogs and cats and the widespread and ongoing control of the local fox population. Details of such strategies and commitments to them are not provided by the developer.</p>	<p>Peter Mack 'Turtle Man' at Coral Bay; A study of Turtle breeding summer 1994/95</p>
<p>Existing and potential uses and/or pressures... (Vol 1 6.8.10)</p>	<p>This section fails to recognise even those impacts referred to elsewhere in the report (eg. habitat destruction, artificial light impacts upon hatchlings and breakwater obstruction) as well as those impacts not recognised by the developer (eg. shark netting). It fails to provide effective management strategies and performance indicators for those impacts it does list.</p>	

PER STATES	COMMENT	REFERENCES
<p>(Vol 1 6.8.10) 1. Physical disturbance: - boat collisions and boat noise;</p>	<p>As discussed previously the impact of boat collisions has not been adequately addressed by the developer.</p> <p>No management strategies of any kind are proposed to assess or manage the impact of increased boat noise on turtle numbers.</p>	
<p>(Vol 1 6.8.10) - commercial whale watching tours; and</p>	<p>Presumably this section is meant to refer to the increase in marine based tourism specifically aimed at marine turtle species that is planned for this development (Vol 1 p 161 and p 187). While education of tourists may minimise this impact turtle disturbance could still be very significant. No commitment is made to assess this management strategy.</p>	
<p>(Vol 1 6.8.10) - during egg laying.</p>	<p>Turtles are very easily disturbed during the initial phases of the egg laying process. Stray light, human interaction and beach traffic (Vol 1 p110) can cause a turtle to avoid a particular area of beach or abort egg laying attempts.</p> <p>It is acknowledged that this development will result in an increase in beach use activities including an increase in commercial operations aimed specifically at nesting turtles (Vol 1 p94, 215, 219 and 160). No evidence is provided of the effectiveness of education campaigns in reducing impact or successful examples provided.</p> <p>Unless human activity on beaches are restricted to managed groups for the entire breeding the overall increase in disturbance will be extremely significant. Such restriction is unlikely to occur.</p>	
<p>(Vol 1 6.8.10) 2. Entanglement (eg. In litter, ropes, discarded fishing gear)</p>	<p>An increase in human presence in area will result in more rubbish finding its way into the environment. The report acknowledges that increased litter, especially plastic may be ingested by feeding turtles (Vol 1 p109/110 and P208).</p>	

PER STATES	COMMENT	REFERENCES
	<p>This is well known as a significant cause of worldwide turtle mortality.</p> <p>It also acknowledges that fishing effort in the area will increase (vol 1 p41) and this will inevitably lead to a corresponding increase in fishing line cast offs. The coral bay community and tourists are already well informed of conservation issues such as these and it is unlikely that further efforts at education will be able to significantly lower the greatly increased mortality rates.</p> <p>Real commitments that could reduce the effect of this impact (such as strategies to restrict litter production and continuous ongoing efforts to remove rubbish from the environment) were not discussed.</p> <p>As with boat collisions the performance indicator proposed to assess the impact of pollution will lack baseline data and be inconclusive in the absence of an adequate surveillance program of turtle activity in the MSMA. A negative trend in turtle entanglements may indicate a drop in the local turtle numbers and the ineffectiveness of management strategies.</p>	
<p>Prepare ... Turtle Nesting Surveillance Program ...pre construction Implement a ... Turtle Nesting Surveillance Program ...construction and operation (Vol 1 p xv)</p>	<p>The report accurately states that there is a “clear need to develop a baseline for fish stocks prior to the Coral Coast Resort being operational” (and subsequent recreational fishing pressures). Similarly there is a clear need to develop adequate and accurate baseline data on the rare and protected species of marine turtle that are known to utilise this area. No such data has been provided.</p> <p>If development continues on the planned timescale the resultant impact to turtle habitat will occur before adequate and standardised baseline data from even a single nesting season can be obtained (and numbers and behaviour of marine turtles is known to vary widely in the</p>	

PER STATES	COMMENT	REFERENCES
	<p>Cape Range area between years).</p> <p>Even basic information of turtle utilisation in the MSMA is inconsistent throughout the PER document clearly indicating the lack of knowledge available.</p> <p>This glaring inadequacy of the surveillance program would severely limit the assessment of any impact and the effectiveness of subsequent management attempts.</p>	
No impact during turtle nesting (Vol 1 p233)	The impact of potential pressures specific to the construction phase of the development were not addressed (Vol 1 p209). These impacts would include disturbance through noise, vibration and sediment in the water. These impacts would be extremely disruptive and detrimental to the local turtle population if construction occurred during the turtle breeding season. Only cursory reference was made to this issue (Vol 1 pxiv). No commitment was made to limit construction to time periods when turtles are not nesting.	
Control of public lighting (Vol 1 p115,229 and 236)	<p>The effect of artificial lighting upon hatchling mortality is well documented (ie Mack 1995).</p> <p>No details of public lighting control methods are provided. No examples are given of the use of control measures which have been used in similar developments and there effectiveness.</p> <p>No reference is made to the control of other light sources that would be associated with this development. These would include lights from private dwellings, cars and beach users.</p>	Peter Mack 'Turtle Man' at Coral Bay; A study of Turtle breeding summer 1994/95
the flatback turtle, (<i>Natator depressus</i>), being endemic. (Vol 1 p109/110 and P208)	As an endemic species the flatback turtle is warranted increased conservation significance not recognised by the PER report. Detailed studies into population numbers and	

PER STATES	COMMENT	REFERENCES
	behavioural patterns in the Ningaloo reef area is required in order to ensure future protection.	