

**GREENDENE DEVELOPMENT CORPORATION  
PTY LTD**

**RIVERSLEA SUBDIVISION  
(SUSSEX LOCATIONS 9002 AND 9101)**

**Responses to Submissions**

**(EPA Assessment No. 1463)**

**VERSION 3**

**JULY 2006**

**REPORT NO: 2005/173**

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**Document No:** GDC-2003-001\_SUBM\_001\_sg\_V3

**Report No:** 2005/173

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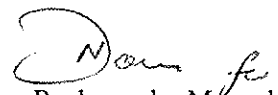
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## TABLE OF CONTENTS

1.	INTRODUCTION .....	1
1.1	Background .....	1
1.2	Revised Proposal.....	1
2.	SUBMISSIONS .....	3
3.	SUBMISSIONS RELATING TO BIOPHYSICAL FACTORS .....	4
3.1	Vegetation .....	4
3.1.1	Loss of Very Good to Excellent Native Vegetation/Last Remaining Good Quality Vegetation in East Margaret River Area/Loss of Flora .....	4
3.1.2	Flora Surveys.....	9
3.1.3	Previous Disturbance to Bushland.....	11
3.2	Significant Flora.....	12
3.3	Fauna.....	13
3.3.1	Fauna Surveys .....	13
3.3.2	Wildlife Corridor/Fauna Linkage/Greenbelt .....	18
3.4	Significant Fauna .....	20
3.4.1	Loss of Baudin's Cockatoo or Western Ringtail Possum Habitat.....	20
3.5	Biodiversity Hotspots.....	22
3.6	Impact of Proposed Subdivision .....	22
4.	SUBMISSIONS RELATING TO PHYSICAL FACTORS .....	24
4.1	Watercourses .....	24
4.1.1	Destruction of Darch Brook/Buffers/Pressures on Darch Brook .....	24
4.2	Surface Water Quantity and Quality .....	28
4.2.1	Water Sensitive Urban Design/Stormwater Management.....	28
4.2.2	Rehabilitation/Offsets/Compensation.....	30
4.3	Foreshore Management Plan.....	31
4.4	Climate Change as a Result of Clearing .....	32
5.	SUBMISSIONS RELATING TO SOCIAL FACTORS .....	34
5.1	Aboriginal Heritage.....	34
5.2	Public Open Space .....	34
5.3	Recreational/Visual/Social Value of the Bushland .....	35
5.4	Community Consultation .....	36
6.	GENERAL SUBMISSIONS .....	38
6.1	General Submissions.....	38
6.2	Enquiry by Design Workshop.....	39
6.3	Alternative Sites for Subdivision .....	40
7.	LIST OF ABBREVIATIONS.....	42
	REFERENCES .....	43

## **FIGURE**

1. Proposed Subdivision

## **APPENDIX**

1. Key Issues Raised in Riverslea PER Submissions and Submission Number

## **1. INTRODUCTION**

### **1.1 Background**

Greendene Development Corporation Pty Ltd proposed to develop Lots 9101 and 9002, Willmott Avenue and Forrest Road, located approximately 1km east of the Margaret River townsite, for the purpose of a residential subdivision. The proposed residential development involved the creation of 74 residential allotments, the setting aside of an area for the purpose of “Reserve for Recreation” (i.e. Public Open Space), the establishment of reservations for Darch Brook and its tributary which are currently in private ownership and the re-construction of a natural wetland environment within a degraded tributary of Darch Brook.

Conditional subdivision approval for 86 lots of the proposed residential subdivision of land at Riverslea was previously granted for the proposal area by the Western Australian Planning Commission (WAPC) on July 25, 2002. A condition requiring the deletion of 16 lots (lots 244-259) that front a proposed public open space and drainage reserve was subsequently removed by the Town Planning Appeal Tribunal on an uncontested appeal. The subdivision application originally sought approval for 132 lots, including one parcel of 86 and another of 46 lots.

The 132 lot subdivision was referred to the EPA under Section 38 of the *Environmental Protection Act 1986* in December 2002. The EPA resolved to formally assess the project on the basis of the potential environmental impacts on the project and set the level of assessment as a Public Environmental Review (PER) (Assessment No. 1463).

The subdivision application was subsequently amended to two separate applications, of 86 and 46 lots each. The EPA consequently determined that the PER assessment related only to the 86 lot subdivision. The total number of lots was subsequently reduced to 74.

### **1.2 Revised Proposal**

Following the EPA’s meeting on 16 March 2006 to discuss the proposal, the proponent agreed to revise the subdivision to provide for a 50m setback/foreshore reserve to Darch Brook and a setback of approximately 15m from the edge of upland vegetation adjacent to the degraded tributary. This resulted in the total lots being reduced from 74 to 65. This correlates with the 65 lots now proposed in the PER proposal area.

The proposed foreshore reserve adjacent to the proposed Lot 42 encroaches slightly into the 50m setback area from riparian vegetation. The intrusion is approximately 7m at its greatest width. The area of the encroachment is approximately 100m<sup>2</sup>.

The encroachment is due to the need to accommodate a change in direction of the sewer gravity main alignment. Only one man hole is proposed at this change in direction point opposite proposed Lot 42. An additional manhole would be required if the alignment was “flattened out” to avoid the riparian setback line meaning that there will more excavation and loss of vegetation to install an additional manhole. Adjusting the design also will compromise the dimensions and areas of the adjacent Lots 41 to 43. These lots are purposely larger than the general lot size in the area. This is to encourage landowners to preserve on-site trees given they will have more flexibility in house design by virtue of the larger lot size.

The encroachment is more than compensated for through the retention of vegetation outside of the setback area opposite proposed Lot 61. At this point, there is an area of approximately 650m<sup>2</sup> of vegetation being retained that could have been included in the subdivision area.

There is therefore, a net benefit to the riparian setback area is provided by the design approach.

Guidelines for the assessment of the subdivision proposal were provided by the EPA, and a PER was prepared by the proponent to satisfy and address these guidelines.

The PER was available for a public review and comment period of 4 weeks from 25 July 2005 to 22 August 2005.

This report provides a summary of the submissions received by the EPA, and the proponent's detailed responses to each of the issues raised.

## **2. SUBMISSIONS**

A total of 91 submissions were received by the EPA during the advertising period for the PER. The majority of submissions raised one or more issue key issues. A break down of the submitters is provided below:

- 86 from members of the public;
- 1 from Local Government Authorities; and
- 4 from State Government departments.

### 3. SUBMISSIONS RELATING TO BIOPHYSICAL FACTORS

The following section provides a summary of the submissions made in relation to the biophysical factors identified in the PER. Both the EPA and project objectives for each biophysical factor, as provided in the PER document, are also shown under each subheading. The key issues relating to each biophysical factor are summarised along with the exact wording extracted directly from each relevant submission.

#### 3.1 Vegetation

***EPA Objective: To maintain the abundance, diversity, geographic distribution and productivity of flora at species and ecosystem levels through avoidance or management of adverse impacts and improvement in knowledge.***

***Project Objective: To ensure that the proposed subdivision is compatible with maintaining and enhancing the biological integrity of the surrounding environmental and minimising vegetation loss and degradation.***

***To protect Declared Rare and Priority Flora consistent with the provisions of the Wildlife Conservation Act, 1950.***

***To minimise significant adverse impact on the survival of any Threatened Ecological Communities or regionally significant vegetation and, where possible, enhance, existing values through rehabilitation and revegetation.***

##### 3.1.1 Loss of Very Good to Excellent Native Vegetation/Last Remaining Good Quality Vegetation in East Margaret River Area/Loss of Flora

- 1.1 *Potential loss of 6.3ha of native vegetation assessed as Very Good to Excellent condition. With large increases in population projected for Margaret River, it is important to retain (high quality) natural areas within the township where possible.*
- 1.2 *It would preferable to retain the “very good to excellent native vegetation as public open space.*
- 1.3 *It is rated as ‘excellent to very good’ with ‘very little weed invasion.*
- 1.4 *The condition of the bush is in Very Good to Excellent*
- 1.5 *It’s the only good bush left close around.*
- 1.6 *The impact on East Margaret River of the loss of this vegetation will be huge as this is the last good bush left in the area. It is important for scenic beauty, recreation, habitat for native fauna (cockatoos, birds in backyards, - no raptors because they are gone), flora biodiversity, as well as being a vital part of a wildlife corridor to Margaret River.*
- 1.7 *The bush within this block is rated ‘Very Good’ to ‘Excellent’*
- 1.8 *Destruction of this 6.3ha of our unique environment would clearly be against the wishes of not only nearby residents and the local shire, but also the community at large.*



- 1.9 *It is the only patch of bush in this area of Margaret River...*
- 1.10 *Surely the very last area of “Very Good to Excellent” bush in Margaret River can be respected and preserved.*
- 1.11 *The bush is very healthy and is in very good condition.*
- 1.12 *On pg 17 under Item 3.2.6 Cumulative Impacts, it is stated that “the proposed Riverslea Gardens subdivision development (i.e. proposal area) will result in the loss of approximately 6.3ha of native vegetation”. In other words, ALL of the bushland in the proposal area would be destroyed.*
- 1.13 *The safest thing to do.....is to protect this bushland describes in the PER as “excellent” to”very good” from complete destruction.*
- 1.14 *The block is essentially the last piece of relatively undisturbed bushland in the town precinct and its preservation could do much to bring the community some assurance that the natural values of the area are respected.*
- 1.15 *Bushland reported as Very Good to Excellent is not the appropriate place for clearing and building.*
- 1.16 *Leave it be. It’s the last remnant of public bushland for a congested community housing development.*
- 1.17 *The impact on East Margaret River of the loss of this vegetation will be huge as this is the last good bush left in the area. It is important for scenic beauty, recreation, habitat for native fauna (cockatoos, birds in backyards, - no raptors because they are gone), flora biodiversity, as well as being a vital part of a wildlife corridor to Margaret River*
- 1.18 *This is clearly untrue since it is the last sizeable patch of remnant vegetation in good condition in the area.*
- 1.19 *The bush within this block is rated ‘Very Good’ to ‘Excellent’.*
- 1.20 *The condition was rated as very good to excellent (Bush Forever, WA 2000).*
- 1.21 *With the aim of retaining native vegetation rated to be in excellent condition, and protecting priority species, the Department of Environment recommends the development redraw the boundary of the proposed subdivision to exclude the vegetation identified in the PER as CcEmEpCF on the Plan - Riverslea Subdivision, Vegetation and Flora Assessment, Vegetation Types and Condition, Figure 2. This allows all vegetation identified as in 'excellent' condition to be retained.*
- 1.22 *This is the very last area of 'Very Good' to 'Excellent' bush in East Margaret River.*
- 1.23 *The bush is our heritage and this is the last area of very good bushland in East Margaret River with wonderful flora, native birds and other animals.*
- 1.24 *This is the last remaining healthy bushland east of Margaret River and has been shown to be in very good condition.*
- 1.25 *I feel that the bush under threat of development at Riverslea is in very good condition and should be saved.*

- 
- 1.26 *It is the last area of excellent bush in east Margaret River and is a vital part of the corridor encompassing Darch Brook and the Margaret River.*
- 1.27 *One of the resolutions confirmed by most of the local residents present was that the last area of quality bushland left in the subdivision should be preserved for all times and all people.*
- 1.28 *This is the last stand of very good to excellent bush and stream area, the diverse flora providing habitat for native birds and animals and needs to be preserved without any interference from greedy developers.*
- 1.29 *I fear that if this last remaining 'very good to excellent' area of bush is cleared for development that we will lose an important habitat for native fauna, such as the various birdlife that we currently enjoy in Riverslea.*
- 1.30 *I do not see the need to clear such a sensitive site and lose forever a "very good to excellent" piece of bush.*
- 1.31 *This is clearly untrue since it is the last sizeable patch of remnant vegetation in good condition in the area.*
- 1.32 *The PER lists 15 different amphibian and reptile species, 41 species of birds and 8 native fauna that live in the bushland. Destruction of this bush would cause the death of these plants, animals and birds and disrupt the bush corridor which enhances the health of Darch Brook and Margaret River.*
- 1.33 *The report identifies 128 species of native plants in the bushland [Appendix 1] and a community study found 132 species there including a number of orchids.*
- 1.34 *This bushland is rich in diversity centrally located in a rapidly developing urban area.*
- 1.35 *This area is rich in plant diversity, 128 native species, including many orchids located in the CALM.*
- 1.36 *It is rich in plant diversity 132 species (Appendix 1) and Appendix 2 p19 PER lists 15 different amphibian and reptile species, 41 species of birds and 8 native fauna.*
- 1.37 *Its small, but good quality. Home to 15 different amphibian and reptiles, 41 species of birds and 8 native fauna. There are 128 species of plants identified, including red Beak and Rattle Beak Orchids and other plants becoming rarer by the day.*
- 1.38 *The report lists 15 different amphibian and reptile species, 41 species of birds and a further 8 native fauna. It also states that the area is rich in plant diversity (128 species identified by CALM, and 132 by the community survey). The importance of preserving a bio diverse environment cannot be over stated.*
- 1.39 *The area is rich in plant diversity with 128 species identified by CALM and 132 by the Community study.*
- 1.40 *The PER lists 15 different amphibian and reptile species, 41 species of birds and 8 native fauna live in this bushland. Destruction of this bush would cause the death of these plants, animals and birds and disrupt the bush corridor which enhances the health of Darch Brook and the Margaret River.*

- 1.41 *The PER report lists 15 amphibian and reptile species, 41 bird species and 8 types of other native animals that live in the bushland (Appendix 2, pg 19). This bushland is also rich in plant diversity – 128 plant species were identified by CALM and 132 by the community survey.*
- 1.42 *The number of species listed in the PER as likely to be present in the proposal area, and which are certain to be lost in this development, raises very loud alarm bells.*
- 1.43 *Appendix 1 (no numbers given): The area is rich in plant diversity with 128 species identified by CALM and 132 by the Community study. Please recognise the importance of this biodiversity in a world being depleted hourly of flora and fauna.*
- 1.44 *Appendix 2, Page 19: The PER lists 15 different amphibian and reptile species, 41 species of birds and 8 native fauna inhabiting this bushland.*
- 1.45 *The PER has identified 15 amphibian & reptile species, 41 species of birds & 8 native fauna (Appendix 2, page 19). What will happen to these creatures if this bush is flattened?.*

The description of the bushland in the PER report as being in Very Good to Excellent condition can be misleading to those not familiar with the definition and the context in which the terms are used. The terms “Excellent” and “Very Good” relate to the vegetation condition rating scale adopted from Keighery (1994) and are commonly used to describe vegetation condition scales in the Perth Metropolitan Area, particularly in the Bush Forever document (Government of Western Australia, 2000). While the Very Good to Excellent rating was applied in the PER to the majority of the vegetation within the proposal area, in actuality the Excellent condition vegetation is restricted to the area of upland vegetation immediately abutting to Darch Brook riparian vegetation, which, unlike the remainder of the site, had not previously been selectively logged. The definition of Very Good condition vegetation described in Bush Forever (Government of WA, 2000) is “vegetation structure altered, obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of aggressive weeds, dieback, grazing or logging”. Grassy weed species were identified around the edge of the bushland, with fewer introduced weeds in the central and eastern portions. As the majority of the area has previously been selectively logged, the Very Good condition rating scale has been appropriately applied.

- 1.46 *There seems very little difference of opinion between the community survey of Bushland quality and that carried out by the EPA. Both agree that the bushland in question is in “Very Good to Excellent” condition.*
- 1.47 *For the EPA to totally agree that this is an area of “Very Good to Excellent” bushland with high value and then agree to its destruction leaves the conservation movement with no place to turn.*
- 1.48 *This is the last remaining significant piece of bushland left on the east side of Margaret River.....It is described as ‘Very Good’ to ‘Excellent’ in your EPA review, and yet we understand that the developers have been given the go-ahead on this part of the location.*
- 1.49 *If this subdivision goes ahead 6.3ha of ‘very good to excellent’ (EPA report quote) forest-bushland will be destroyed.*

Note: ATA Environmental, not the EPA, classified the bushland as being in Very Good to Excellent condition.

- 1.50 *It is the last bushland in that area of Margaret River west of Darch Brook. Comparison of air photos of Riverslea taken over the last ten years shows that the many hectares of bushland previously there have been cleared for development.*
- 1.51 *This is the last remaining significant piece of bushland left on the east side of Margaret River.*
- 1.52 *The report gives much strength to the EPA not to allow the developers to destroy this last bit of excellent bush in East Margaret River and lose the buffer for Darch Brook.*
- 1.53 *This bushland and streamline should be conserved because this is the very last Very Good to Excellent bush in East Margaret River.*
- 1.54 *The sub division should not go ahead because the bushland and stream zone area should be conserved as it is the very last area of 'Very Good' to 'Excellent' bush in East Margaret River.*
- 1.55 *Margaret River has lost enough of its bush to housing developments and this is the very last area of very good to excellent bush in East Margaret River.*
- 1.56 *This is an important piece of bush land. It is the only piece of its type in the East Margaret River subdivision...*
- 1.57 *I am writing to object in the strongest possible terms to the proposed housing development at Riverslea Gardens, East Margaret River, which threatens to destroy the last remaining native bushland in the East Margaret River area.*

While much of the native vegetation in East Margaret River (i.e. between Bussell Highway and Darch Brook) has been cleared due to the expansion of the town for urban development, significant areas of good quality vegetation, particularly riparian vegetation associated with Margaret River and Darch Brook, remain intact.

- 1.58 *The proposed Riverslea subdivision in Margaret River currently being reviewed by the EPA should not be allowed to proceed because of the areas high conservation value. The bushland in question is acknowledged by all concerned parties to be in very good to excellent condition.*

The bushland area that is the subject of the PER is considered to be characteristic of the Cowaramup and Wilyabrup Vegetation Complexes, as described by Matiske and Havel (1998). The Regional Forest Agreement (RFA) process identified that more than 50% of the Cowaramup Complex (including 19% gazetted) and 44% of the Wilyabrup Complex (0.9% gazetted) are protected within the reserve system. The national agreed criteria for the conservation of ecosystems was that 15% of the pre-1750 distribution of each forest type (i.e. vegetation complex) be set as a target for conservation. Therefore no significant vegetation or vegetation considered to be of high conservation value will be lost as a result of the subdivision proposal. Extensive areas of State Forest and National Park comprised of vegetation representative of the proposal area occur in the immediate vicinity of Riverslea. The Dames and Moore survey report (1989) for the area also stated that the vegetation of the project area was not unusual and correlated with well documented habitats elsewhere.

The developer, Greendene Corporation Development, acknowledges that the existing subdivision design is located too close to Darch Brook. As a consequence, to ensure that the environmental attributes, function and values of the waterway is maintained and that impacts from the proposed subdivision development on Darch Brook are minimised, it has revised the subdivision so that an additional area of Excellent condition bushland is retained within a

Foreshore Reserve at least 50m in width ensuring that an adequate and appropriate buffer to the brook is provided.

### 3.1.2 Flora Surveys

- 1.59 *This area is rich in plant diversity, 128 native species, including many orchids located in the CALM which was conducted only in one short period of the year – so not entirely comprehensive. Past surveys and this one have nominated at least 5 priority species in the area.*
- 1.60 *There are at least two Priority 3 plants in this bushland, Lasiopetalum membranaceum and Gahnia scleroides found by qualified bush regenerators from this area. The community its research over the full year. I feel the EPA was remiss in only focusing on the months of October and December.*
- 1.61 *The flaws in the way in which the surveys were carried out.....Section 3.3.4 of the PER states that the information the report is based on was gathered in October, November and December. To be sure that all flora has been accounted for, it would be important to space surveys throughout the year. I am surprised that no attempt was made to carry out a survey in the early spring. The community survey that was carried out over Spring, Summer Autumn and Winter. (See Margaret River Environment Centre – Community Survey Report) found at least two Priority 3 protected plants within the development site; Lasiopetalum membranaceum and the Gahnia scleroides.*
- 1.62 *We object to ‘same season’ surveys done on this block. Three surveys were done in October-December period, not spaced evenly over the year as would be expected. The community survey was done over Spring, Summer, Autumn and Winter.*
- 1.63 *The community survey found Red Beak Orchids and Rattle Beak Orchids, another species each of Caladenia and Thelymitra as a result of conducting surveys throughout the year.*
- 1.64 *This bush was documented over the 4 seasons for birds, animals and plant seasons and along with photos the package was sent off to the EPA asking for a formal assessment to be done.*
- 1.65 *It is questionable that same reason surveys could provide adequate coverage of all of the flora in the area. It is of interest that the Gahnia scleroides discovered adjacent to the proposal area was singled out for protection but those within the area (as listed in the CALM Threatened (Declared rare) and Priority Flora database p19) have been ignored, presumably because of the impossibility of saving them.*
- 1.66 *This is clearly untrue since it is the last sizeable patch of remnant vegetation in good condition in the area and contains at least two Priority 3 protected plants and good species diversity (132 in the community study).*
- 1.67 *Appendix 1, (no numbers given): The area is rich in plant diversity with 128 species identified by CALM and 132 by the Community study. The community survey found Red Beak Orchids and Rattle Beak Orchids, another species each of Caladenia and Thelymitra as a result of conducting surveys throughout the year.*
- 1.68 *This vegetation is of even greater significance if in fact it represents habitat for two species of priority flora as identified by the community survey.*

- 1.69 *The condition was rated as very good to excellent (Bush Forever, WA 2000), with Priority flora species existing within the vegetation.*
- 1.70 *It contains significant flora and fauna including, but not limited to, Lasiopetalum membranaceum, Gahnia scleroides, Baudin's Black Cockatoo and the Southern Brown Bandicoot.*
- 1.71 *I also understand that there are two priority 3 protected plants within the threatened bushland, surely protected means protected.*
- 1.72 *On page 19 of the PER Report, only one priority protected plant is listed (adjacent to the block), when in fact at least two have been identified within the 6.3 ha! I have grave doubts as to the accuracy & completeness of the surveys conducted by the EPA or Developer up to this point in time.*
- 1.73 *Also of great significance is the fact that there appears to be some priority 3 protected plants within the area, along with a lot of native flora and fauna.*
- 1.74 *This area contains high priority flora and fauna, which should be protected at all costs.*

The preliminary CALM survey of the site conducted in December 2002, identified a total of 114 species of flora (native and introduced species), not 128 as stated in several of the submissions.

The proponent's environmental consultant ATA Environmental conducted Level 2 flora and vegetation surveys of the proposal area conducted in accordance with EPA Guidance Statement No. 51 over two separate survey periods (i.e. October 2003 and October 2004). A total of 142 plants species (128 native and 14 introduced species) were recorded over the two surveys. This compares favourably with a local Margaret River Environment Centre community flora survey of the site conducted over autumn and spring 2003 which recorded a total of 132 species. The ATA Environmental survey recorded a population of the Priority 3 taxa *Gahnia scleroides* from riparian vegetation associated with Darch Brook immediately adjacent to the eastern boundary of the proposed subdivision. The proponents amendment of the subdivision design will further protect the population by providing a 50m buffer between the proposed subdivision and the Darch Brook riparian zone. The community survey of the site claims to have recorded the Priority 3 listed taxa *Lasiopetalum membranaceum*. *Lasiopetalum membranaceum* is widely distributed between Perth and Busselton and grows over sand on limestone. It is being considered by CALM for deletion from the Priority species list. There is no limestone associated with the Riverslea proposal area. This species, which is not dissimilar in appearance to the common *Lasiopetelaum floribundum*, wasn't recorded during either of the two ATA Environmental or Dames and Moore (1989) surveys of the site or the 2002 CALM flora survey. The ATA Environmental, Dames and Moore and CALM surveys were all conducted by qualified botanists experienced with the flora of the region.

The Environmental Protection Authority's Guidance Statement No. 51 *Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia* (EPA, 2004a) recommends that flora and vegetation surveys should be conducted following the season which normally contributes the most rainfall for a bioregion. For the Warren Bioregion (in which the study area is located), the majority of rainfall fall during the winter months. For the southwest corner of Western Australia, it is generally considered more appropriate to conduct flora and vegetation survey during mid to late spring as the flowering season commences slightly later than in the northern portion of the Southwest Botanical Province. Therefore, it is entirely appropriate and acceptable that flora surveys for the proposal area were conducted during October (i.e. spring).

The Red Beaks orchid that the community survey recorded was also recorded during the ATA Environmental survey of the site. There has been a taxonomic revision to the name of this orchid since the community survey was conducted. It is now known as *Pyrorchis nigricans*, as indicated in the PER document rather than *Burnettia nigricans* which was identified in the community survey report. Neither of the two additional *Thelymitra* species recorded from the community survey were identified to species level, so it is not possible to verify their identity definitively.

1.75 *Bracken Fern is a native species. It may have increased in project area due to disturbance*

Noted.

### 3.1.3 Previous Disturbance to Bushland

1.76 *Report claims there is 'a history of logging and clearing by the original farmers'. This may have happened around the block but is certainly not evident now.*

1.77 *This particular bush area was never clear-felled. The report implied it had.*

1.78 *I disagree with the PER report where it states that there is a history of clearing by the original farmers. This is an incorrect statement, the bushland at Sussex locations 9002 ad 9101 was lightly grazed in the past and only selectively logged.*

1.79 *I disagree with the report where it says there is "...a history of clearing by the original farmers." This land was only lightly grazed and selectively logged. There is good evidence of recovery from past grazing, with only moderate weed invasion, mainly on margins. Individual plants in good healthy condition and numbers, good plant diversity.*

1.80 *The statement on page 2 that 6.3 ha of "predominantly regrowth upland native vegetation" will be cleared is misleading or incorrect. Information in the vegetation and flora report show this area consists of mature (30m) trees and is in very good to excellent condition. Thus it seems very unlikely that this area had been cleared previously.*

1.81 *The statement on page 2 that 6.3 ha of "predominantly regrowth upland native vegetation" will be cleared is misleading or incorrect. Information in the vegetation and flora report show this area consists of mature (30m) trees and is in very good to excellent condition. Thus it seems very unlikely that this area had been cleared previously.*

Apart from the mature scattered Blackbutt (*Eucalyptus patens*) trees (to 12m in height) associated with the *Corymbia calophylla/Eucalyptus marginata* subsp. *marginata* Closed to Open Forest abutting the Darch Brook riparian vegetation along the eastern boundary of the proposal area, the Jarrah and Marri over the remainder of the area is relatively uniform in height (to 20m) and diameter at breast height (average of less than 20cm). This uniformity in height and diameter of the Jarrah and Marri supports the assessment that the area been either cleared or logged in the past. Furthermore, in its 2002 flora and vegetation survey report of the site to the EPA, CALM noted that "the area has in the past been heavily logged and as such all overstorey regrowth is of the same height of approximately 15m". The Margaret River Environment Centres community survey reports also alludes to previous clearing and grazing of the site and it states that the floristic diversity of the site "does not appear to have been seriously diminished by previous land use" and "good evidence of recovery from past grazing activities".

### 3.2 Significant Flora

- 1.82 *The report identifies 128 species of native plants in the bushland [Appendix 1] and a community study found 132 species there including a number of orchids and the priority listed plants Lasiopetalum membranaceum and Gahnia scleroides ( the report lists the same Gahnia as found adjacent to the block).*
- 1.83 *There are at least two Priority 3 plants in this bushland, Lasiopetalum membranaceum and Gahnia scleroides found by qualified bush regenerators from this area. The community its research over the full year. I feel the EPA was remiss in only focusing on the months of October and December.*
- 1.84 *The flaws in the way in which the surveys were carried out.....Section 3.3.4 of the PER states that the information the report is based on was gathered in October, November and December. To be sure that all flora has been accounted for, it would be important to space surveys throughout the year. I am surprised that no attempt was made to carry out a survey in the early spring. The community survey that was carried out over Spring, Summer Autumn and Winter. (See Margaret River Environment Centre – Community Survey Report) found at least two Priority 3 protected plants within the development site; Lasiopetalum membranaceum and the Gahnia scleroides.*
- 1.85 *The report confirms the presence of the Gahnia scleroides, however the report states that their recorded find was on the eastern boundary, alongside Darch Brook. There is a conflict here, not as to whether this Priority 3 plant is there, but whether it is in, or on the boundary of, the development.*
- 1.86 *The community survey that was carried out over Spring, Summer Autumn and Winter. (See Margaret River Environment Centre – Community Survey Report) found at least two Priority 3 protected plants within the development site; Lasiopetalum membranaceum and the Gahnia scleroides.*
- 1.87 *There are at least two Priority 3 protected plants within the threatened bushland done by the community survey. The PER report only lists one, just adjacent to the block. The two plants are Lasiopetalum membranaceum and Gahnia scleroides (the one found immediately adjacent to the block in the PER report was the same Gahnia!).*
- 1.88 *The report confirms the presence of the Gahnia scleroides, however the report states that their recorded find was on the eastern boundary, alongside Darch Brook. There is a conflict here, not as to whether this Priority 3 plant is there, but whether it is in, or on the boundary of, the development.*
- 1.89 *The PER identifies the existence of the Priority Flora species Gahnia scleroides, Priority 3. The Department of Environment strongly opposes any development requiring the clearing of any recognised priority species. The Department requests the condition requiring no impacts on the priority species be placed on any approval given.*

Between 1989 and 2004, a number of flora and vegetation surveys of the proposal area were undertaken by professional botanists, including those engaged by the proponent and by regional CALM officers. These surveys have been undertaken at varying times of the year using accepted survey methodology. Surveying was also undertaken during the relevant flowering seasons to verify presence or absence of Declared Rare and Priority listed Flora potentially occurring in the area. The proponents environmental consultant, ATA Environmental, conducted Level 2 flora and vegetation surveys of the proposal area was over



two separate survey periods (i.e. October 2003 and October 2004). The ATA Environmental survey recorded a population of the Priority 3 taxa *Gahnia scleroides* from riparian vegetation associated with Darch Brook immediately adjacent to the eastern boundary of the proposed subdivision. The proponent's amendment of the subdivision design will further protect the population by providing a 50m buffer between the subdivision and the Darch Brook riparian vegetation. The community survey of the site allegedly recorded the Priority 3 listed taxa *Lasiopetalum membranaceum*. *Lasiopetalum membranaceum* is widely distributed between Perth and Busselton and grows over sand on limestone and is being considered by CALM for deletion from the Priority species list. There is no limestone associated with the Riverslea proposal area. This species, which is not dissimilar in appearance to the common *Lasiopetalum floribundum*, wasn't recorded from the site during either of the two ATA Environmental surveys of the site or the 2002 CALM flora survey. Additionally, a 1989 Dames and Moore survey of the area conducted in November 1989 failed to identify either of the Priority 3 taxa from the site. The ATA Environmental, Dames and Moore and CALM surveys were conducted by qualified botanists experienced with the flora of the region.

### 3.3 Fauna

***EPA Objective: To maintain the abundance, diversity, geographic distribution and productivity of fauna at species and ecosystem levels through avoidance or management of adverse impacts and improvement in knowledge.***

***Project Objectives:***

***To minimise adverse significant impacts on terrestrial fauna known to occur in the area.***

***To protect Specially Protected (Threatened) Fauna and Priority Fauna consistent with the provisions of the Wildlife Conservation Act, 1950.***

#### 3.3.1 Fauna Surveys

- 1.90 *The fauna survey was conducted at the end of summer. Consequently it is unlikely that amphibian fauna would have been active at this time of the year, and indeed the report states 'limited frog species were caught or observed.'*
- 1.91 *The statement that the survey is in accordance with Guidance 56 is not true. Guidance 56 requires for a Level 2 survey "one or more visit/s in each season appropriate to the bioregion and the faunal group being surveyed. Generally maximum survey will be the season that follows the season of maximum rainfall but there will be need to time surveys according to seasonal activity patterns of some faunal groups (e.g. molluscs or amphibians)". A single survey in February is the wrong season for this region.*
- 1.92 *The survey timing (2-6 February) is not a suitable time for surveys in this region (see comments on Guidance 56 above).*
- 1.92 *The trapping intensity and spatial coverage is inadequate to fully sample the project area. While it is acknowledged that a "single survey in summer" is partly responsible for "the low number of recorded species compared to the potential recorded species list", conclusions about the presumed presence or absence of Threatened or Priority species are not based on adequate information.*

Several responses from Dr Wally Cox (Chairman of the EPA) to submissions questioning the adequacy of several other terrestrial fauna surveys conducted in Western Australia for development proposal indicate that "Guidance 56 is guidance only and allows for project

variation according to prevailing conditions or state of knowledge of particular project areas.” (8 August 2005); “Guidance 56 is guidance only and allows for project variation...” (12 August 2005); “Guidance are so named to allow for some flexibility to be applied by the EPA on a case-by-case basis.” (29 March 2005); and “...the EPA’s Guidance Statements are for guidance and are not mandatory requirements.” (28 February 2005). Based on these comments, it is our understanding that the EPA’s Guidance Statement No. 56 (EPA, 2004b) is intended as a guideline for conducting terrestrial fauna surveys and that there is no requirement for the guidelines suggested to necessarily be rigidly adhered to when conducting surveys.

In any event, during a meeting with officers from the EPASU July 2003, including Mr John Dell, to discuss the methodology proposed for the flora and fauna surveys of the Riverslea project area, no specific timing for the fauna survey was recommended by officers from the EPASU. ATA Environmental was advised by the EPASU to consult the Department of Conservation and Land Management’s Manjimup district office in relation to requirements for terrestrial fauna trapping and spotlighting methodology. On contacting with the Manjimup CALM office, ATA was directed to correspond with the Department of Conservation and Land Management Busselton office. On 24 November 2003, Mr Greg Voit from the Busselton Office advised ‘that our proposed fauna survey for the region is adequate. He was happy with the proposed methodology, timing, trapping strategy and trapping effort’.

Subsequent to the Terrestrial Ecosystems Branch submission on the PER, ATA Environmental conducted an additional site investigation at Riverslea between 5-6 October 2005. This is during the breeding season for Baudin’s Cockatoo. The additional survey was conducted specifically to qualify statements made in the PER in relation to significant fauna species including the Western Ringtail Possum and Baudin’s Cockatoo. The additional investigation, recorded all significant trees likely to possess hollows and the location of any hollows located on site that might be suitable for nesting Baudin’s Black Cockatoos. The survey also included spotlighting and searches for Western Ringtail Possum scats and dreys. The additional investigation confirmed what was reported in the PER, that no Baudin’s Cockatoo were observed nesting in hollows on the site and no individual Western Ringtail Possums, scats or dreys are present. A single Brushtail Possum was recorded in this additional investigation. Baudin’s Black Cockatoos were observed in the region but not feeding on site during October 2005.

The fauna survey project team in February 2004 included Dr Rob Davis, a professional herpetologist and member of the Australian Society of Herpetologists, who has particular interests in the ecology of reptiles and amphibians as well as the fauna of human-modified landscapes. In 2003, Dr Davis was an invited expert member of the national WWF Frogs Program in which he helped assess the conservation status of Australian frogs. He was also employed as an ornithologist on the Pilbara Biological Survey for CALM in 2005 and worked for 3 weeks in locations across the Pilbara. We recorded four species of amphibian during the field survey. During the follow up investigations in October 2005, no additional species were recorded. Given that no species of amphibian of conservation significance are predicted on the site, the survey time and methodology are considered satisfactory.

The area to be disturbed is approximately 4.78ha and contains one fauna habitat type. The trapping intensity is therefore adequate when compared with other surveys published in PER’s recently accepted for public release by the EPA. See table below.

*1.93 The location of trapping sites on Figure 1 indicates that most sites were sampled on the edge of the project area and the core central part was poorly sampled.*

Six of the trapping sites were located in the central portion of the area, and only two of the sites were located towards the edges to determine edge effects (see Figure 2 in PER Appendix 2).

*1.94 Draft Guidance 56 was released in February 2003 12 months before the survey was undertaken Therefore should have been considered when survey design was being planned.*

Although the Draft Guidance Statement No. 56 was released prior to the February 2004 survey, Dr Wally Cox indicates that it is "...not formally adopted until June 2004..." (28 February 2005) therefore is only to be used as a guide and not a prescriptive document.

**TRAPPING INTENSITY FOR OTHER PER FAUNA ASSESSMENTS RECENTLY ASSESSED AND APPROVED  
FOR PUBLIC COMMENT BY THE EPA**

Site Location	Number of Habitat Types; Area of Disturbance	Average Trapping Effort Per Trap Type				
		Pit traps	Funnel traps	Cage traps	Elliott traps	Total trap nights
Cloud Break, Pilbara	8	48.8	63.8	22.5	63.8	1590
Brockman Syncline	6	240	64	-	150	2724
Tanami Project	6	74	-	10.8	130	1289
Coburn Mineral Sand Project	10	150	52.8	26.4	120	3492
Beagle Bay	900ha of disturbance	420	-	-	840	1260
Goldsworthy Extension Project – Yarrie	5	50	-	-	100	750
Goldsworthy Extension Project - Cattle Gorge	5	56	56	-	140	1260
Goldsworthy Extension Project - Nimingarra	6	59.7	53.5	14	143.3	1623
Goldsworthy Extension Project – Sunrise Hill	5	49.8	49.8	12	124	1178
FMG Stage B Rail corridor - Christmas Creek	5; 10,1235ha of disturbance	50	-	-	20	350
FMG Stage B Rail corridor – Mount Lewin	6; 1775ha of disturbance	60	-	-	-	360
FMG Stage B Rail corridor – Mount Nicholas	7; 2757ha of disturbance	60	10	-	-	490
<b>Riverslea Subdivision</b>	<b>1; 6.3ha of disturbance</b>	<b>186</b>	<b>372</b>	<b>93</b>	<b>93</b>	<b>744</b>

Davis, R.A., Wilcox, J.A., Metcalf, B.M., and Bamford, M.J. (M.J & A.R. Bamford) (2005) Fauna survey of proposed Iron Ore Mine, Cloud Break, for Fortescue Metals Group. Perth: Unpublished report for Fortescue Metals Group.

Biota Environmental Sciences. (2005). Fauna Habitats and Fauna Assemblage of the Brockman Syncline 4 Project, near Tom Price. Perth: Hamersley Iron Pty Ltd, unpublished report.

Biota Environmental Sciences. (2005). Fauna Habitats and Fauna Assemblage Survey of the Western Tanami Project Area. Perth: Biota Environmental Sciences, unpublished report.

Ninox Wildlife Consulting. (2005). Vertebrate Fauna Survey: Coburn Mineral Sand Project. Perth.

Ecologia Environmental Consultants. (2004). Beagle Bay Big Tree Country tropical timber plantation project; Fauna Assessment Survey. Perth: unpublished report for Tropical Timber Plantations.

Ecologia Environmental Consultants. (2005). Goldsworthy Extension Project, Environmental Protection Statement, Appendix D Biological Assessment. Perth: BHP Billiton, unpublished report.

Biota Environmental Sciences. (2004). Fauna Habitats and Fauna Assemblage of the Proposed FMG Stage A Rail Corridor. Perth: Fortescue Metals Group, unpublished report.

Biota Environmental Sciences. (2005). Fauna Habitats and Fauna Assemblage of the Proposed FMG Stage B Rail Corridor and Mindy Mindy, Christmas Creek, Mt Lewin and Mt Nicholas Mine Areas. Perth: Fortescue Metals Group, unpublished report.

- 1.95 *The statement that “The weather was fine and warm for a large part of the survey period enabling most species of reptile to be sufficiently active to be caught in traps” ignores the fact that many reptiles are only seasonally active and others require particular weather conditions before they are active. What data are available for the statement “The results are therefore not likely to be limited by daily weather conditions, as the days and nights were suitable for trapping reptiles and small mammals”?*

It is acknowledged that there are temporal and seasonal variations in reptile activity, however there is no one time of the year that is ideal for all species. Given CALM’s approval of the survey time and relatively small area of disturbance, the survey was considered adequate.

- 1.96 *Information in this section seems out of place in this document – was it intended for this report or not? What is the reference to Plates 1-3? No plates are included in this report.*

Noted.

- 1.97 *Table 4 in previous Draft included Western Ringtail Possum. Why is this species not included in current Table? See previous comments on this species.*

The Western Ringtail possum was not included in Table 4 of Appendix 2 of the PER as the fauna surveys conducted of the site established definitively that there were no individual Western Ringtail Possums, cats or dreys identified from the site.

- 1.98 *The statements that Western Ringtail Possum and Chuditch “are unlikely to occur in the study area” are not based on adequate survey and are likely to be incorrect. The inclusion of the section on White-bellied Frog is probably unnecessary, as it has not been recorded in the area except for the undefended statement “there has been one previous record”. What is this record?*

Subsequent to the Terrestrial Ecosystems Branch submission on the PER, ATA Environmental conducted an additional site investigation at Riverslea on 5-6 October 2005. The additional survey was conducted specifically to qualify statements made in the PER in relation to significant fauna species including the Western Ringtail Possum. The additional investigation, which included spotlighting, found that there were no individual Western Ringtail Possums, cats or dreys present on the site. A single Brushtail Possum was recorded from spotlighting. The White Bellied Frog was included as CALM identified it in a search of their Threatened and Priority species database. ATA listed the species as *highly unlikely* to be in the area. The single record from 1994 has no known location.

- 1.99 *The inclusion of the cricket Kawaniphila pachomai (recorded from Karragullen about 250 km from project area) completely unnecessary as it is not likely to occur in the project area.*

Noted, however it was identified in the CALM Threatened Fauna database search for the region and therefore was discussed and listed as *highly unlikely* to be in the area.

- 1.100 *The inclusion of Hooded Plover and Western Whipbird should be deleted as neither occurs in habitat within the project area and the nearest known localities of Western Whipbirds are in the Albany region.*

Noted, however it was identified in the CALM Threatened Fauna database search for the region and therefore was discussed and listed as *unlikely* to be in the area.

- 1.101 *The discussion on trap type comparisons is misleading as trapping effort and seasonality, as well as capture rates are so limited to make comparisons almost meaningless.*

As per recommendations in Guidance Statement 56, discussions on the trap type comparisons, effort and seasonality are necessary. See page 14 of Guidance Statement 56, where “the EPA expects that the analysis of faunal assemblage data will take cognisance of sampling bias...”.

- 1.102 *Table 5 and Appendix 2. Crinia insignifera is misidentified. C. insignifera is restricted to the coastal plain; C. pseudinsignifera occurs in this region. Notechis scutatus is misspelt.*

Noted.

- 1.103 *The statement that “No conservation significant invertebrates were predicted or recorded in the region” does not reflect the fact that no invertebrates were actually identified. See comments above.*

Groups of invertebrates that were collected included mygalomorph spiders, isopods, scorpions and land snails. Millipedes also include short-range endemic species, but no millipedes were encountered during the survey. Since relocating to Kew Street, Welshpool, Western Australian Museum staff has not been able to locate the invertebrate specimens that were lodged after this survey. Feedback on whether there are short-range endemics or other species of importance is therefore not possible. Dr Mark Harvey, Curator of Invertebrate, (Western Australian Museum) commented that ‘No conservation listed invertebrate species were predicted in the area’.

- 1.104 *Appendix 1 includes Priority listed Barking Owl and Masked Owl which were not discussed in the fauna survey report or the PER. This Table is poorly set out with family names appearing in the boxes for the previous species. Grey Currawong is in the wrong family.*

Noted.

- 1.105 *Appendix 2 includes two frog species that are not known from the area, Geocrinia alba and Heleioporus albopunctatus.*

Noted.

### 3.3.2 Wildlife Corridor/Fauna Linkage/Greenbelt

- 1.106 *Destruction of this bush would cause the death of these plants, animals and birds and disrupt the bush corridor which enhances the heath of Darch Brook and Margaret River.*
- 1.107 *The subject bushland is important for its scenic beauty, for recreation, as a habitat for native fauna, as part of a wildlife corridor along Darch Brook and the Margaret River.*
- 1.108 *It is habitat for native fauna as well as being part of the wildlife corridor to Margaret River.*
- 1.109 *It is important that these natural green reserves should be maintained and development if it is necessary to go around such areas and create more of a country and rural feel to this town.*

- 1.110 *This area also enhanced the bush corridor from West Margaret River for flora and fauna.*
- 1.111 *It is important for scenic beauty, recreation, habitat for native fauna (cockatoos, birds in backyards, - no raptors because they are gone), flora biodiversity, as well as being a vital part of a wildlife corridor to Margaret River.*
- 1.112 *The Darch Brook ecosystem is a major arterial wildlife corridor between Bramley Forest and areas to the south west of the Margaret River Townsite.*
- 1.113 *Subdivision of the bushland will severely compromise the buffering qualities of the Darch Brook wildlife corridor and actually locate residential development closer to the Perimeter Road.*
- 1.114 *With the Darch Brook wildlife corridor being the most fragile and most unique bushland in the Riverslea area, it is hoped that the environmental review process is robust enough to ensure that such high quality natural environments are not destroyed by suburban development.*
- 1.115 *The proposal ignores the role of the area as a wildlife sanctuary/corridor and had no plan to protect the streamline meandering through the location leading one to suspect a careless attitude on the part of the development applicant.*
- 1.116 *If the development is allowed we will lose the corridor encompassing Darch Brook and the Margaret River, as well as another battle in the war.*
- 1.117 *This section of bush is a vital support to the wildlife corridor encompassing Darch Brook and the Margaret River.*
- 1.118 *It also is habitat for native birds and animals. It is a vital part of a wildlife corridor in Margaret River which links up with the river foreshore.*
- 1.119 *As such it is part of an important wildlife corridor and adds to the recreational amenity of the area.*
- 1.120 *It ignores the subject areas importance as part of a corridor system.*
- 1.121 *It is a vital part of a wildlife corridor encompassing and the Margaret River.*
- 1.122 *It provides habitat for native fauna, cockatoos, birds in backyards, flora biodiversity, as well as being a vital part of a wildlife corridor to Margaret River.*
- 1.123 *It is important for scenic beauty, recreation, habitat for native fauna (cockatoos, birds in backyards, - no raptors because they are gone), flora biodiversity, as well as being a vital part of a wildlife corridor to Margaret River.*
- 1.124 *Destruction of this bush would cause the death of these plants, animals and birds and disrupt the bush corridor which enhances the health of Darch Brook and the Margaret River.*
- 1.125 *It is also part of the Darch Brook/ Margaret River corridor, which is vital for this areas unique wildlife. On top of all this it has a wonderful diversity of flora for a small piece of bush.*

- 1.126 *The bush in question is important to the protection of the water health of the Darch Brook, and is an important wildlife corridor.*
- 1.127 *The bushland vital part of the wildlife corridor encompassing Darch Brook and the corridors through to Margaret River.*
- 1.128 *If we destroy this home and wildlife corridor we will cause the death of these animals and birds.*
- 1.129 *This 6.3ha piece of land is a vital part of the wildlife corridor encompassing Darch Road and the Margaret River.*
- 1.130 *Not only is it a habitat for many native birds and animals but a vital part of the wildlife corridor encompassing Darch Brook and the Margaret River.*

The developer, Greendene Corporation Development, acknowledges the importance of the vegetated wildlife corridor associated with Darch Brook and that the existing proposed subdivision is located too close to Darch Brook. As a consequence, to ensure that the environmental attributes, function and values of the waterway and connectedness of the Darch Brook vegetation corridor is maintained, Greendene has revised its subdivision design so that bushland, including the Excellent condition *Corymbia calophylla/Eucalyptus marginata* subsp. *marginata* Closed Forest with scattered *Eucalyptus patens* adjoining Darch Brook, is retained as Foreshore Reserve. The retention of a Foreshore Reserve at least 50m in width will ensure the wildlife corridor linkage connecting Darch Brook with Margaret River will continue to provide appropriate habitat values that allows for the movement of fauna along the corridor between remnants of native vegetation.

### 3.4 Significant Fauna

#### 3.4.1 Loss of Baudin's Cockatoo or Western Ringtail Possum Habitat

- 1.131 *The clearing of 6.3ha of upland eucalypt vegetation is noted as likely to impact upon the Baudin's Black Cockatoo.*
- 1.132 *The proposal should refer the proposal to the Department of Environment and Heritage for consideration of impacts upon Baudin's Black Cockatoo under the EPBC Act.*
- 1.133 *It contains significant flora and fauna including, but not limited to, Baudin's Black Cockatoo.*
- 1.134 *Furthermore the report states, in Appendix 1 that both the Baudin's Black Cockatoo and the Southern Brown Bandicoot inhabit the area.*
- 1.135 *It is important for scenic beauty, recreation, habitat for native fauna (cockatoos, birds in backyards, - no raptors because they are gone).*
- 1.136 *Finally, the loss of habitat for what is even now the occasional sight and sound of a cockatoo would be sad.*
- 1.137 *It provides habitat for native fauna, cockatoos, birds in backyards, flora biodiversity.*
- 1.138 *The statement that "no impacts are anticipated for the Southern Brown Bandicoot as the vegetation that this species inhabits will not be cleared" is not true as this species*



*feeds extensively in upland habitats and individuals have a home range of at least 800 metres in some areas studied; the statement that “no Baudin’s Cockatoos” were observed nesting in the area” is true because the February survey was outside the breeding season for this species in the region!*

Noted, there is the potential that the clearing to impact on the upland feeding habitat of the Southern Brown Bandicoot.

Subsequent to the Department of Environments Terrestrial Ecosystems Branch submission on the PER, ATA Environmental conducted an additional site investigation at Riverslea on 5-6 October 2005. The additional survey, undertaken during the breeding season for Baudin’s Cockatoo, was conducted specifically to qualify statements made in the PER in relation to significant fauna species including Baudin’s Cockatoo. While Baudin’s Cockatoo were previously observed from the area during the fauna assessment of the site and they may utilise the vegetation on the site for feeding purposes, an additional investigation of the site conducted in October 2005 found that there were no Baudin’s Cockatoos observed nesting in hollows on the site.

*1.139 Comments on preferred habitat for Carnaby’s Cockatoo do not reflect the forest habitats where major food plants are eucalypts.*

*1.140 Comments on distribution and habitat for Western Ringtail Possum are not correct – this species is not restricted to coastal habitats with Peppermint. Many inland occurrences are in localities without Peppermint.*

Noted.

*1.141 Inadequate detail is given on survey methods especially search for scats of Ringtails to allow a determination of presence or absence.*

CALM approved the survey methodology over two months prior to commencement. The entire site was walked on multiple occasions as part of the active foraging. In areas where the understorey was more open, detailed searches were conducted for Western Ringtail scats. No Western Ringtail Possum scats were recorded during the February 2004 or October 2005 site investigations.

*1.142 The use of the term “vagrant flocks” for Baudin’s Cockatoo is a misrepresentation of the species status in the region where it both breeds and feeds.*

Noted.

*1.143 Distribution statement for Southern Brush-tailed Phascogale is not correct. The project area is outside the recorded range of Orange-bellied Frog.*

Noted, the project area is outside of the range of the Orange-bellied Frog. The distribution of the Southern Brush-tailed Phascogale was based on information provided in Strahan (1996).

*1.144 What justification is there for the statement “ATA considers it unlikely” that a number of species occur in the project area. No information is given to defend this statement.*

This comment is based on the distribution and known habitat preference for species listed.

- 1.145 *In Table 2 it is stated that Western Ringtail Possum is “unlikely to occur within area”. This is unlikely to be true;*

Surveys in February 2004, October 2005 and surveys of adjacent landholdings in October 2004 confirm what is reported in the PER fauna assessment – the Western Ringtail Possum does not occur on site.

### **3.5 Biodiversity Hotspots**

- 1.146 *How are we ever to protect anything in a world- wide biodiversity hotspot if the fox is in charge of the henhouse?*
- 1.147 *The Augusta – Margaret River Shire is a biodiversity hotspot and any further clearing of high quality indigenous vegetation threatens the biodiversity rather than nurturing it.*
- 1.148 *We live in a "Biodiversity Hotspot" - lets keep it that way. The south west of Western Australia has been identified by the Department of Environment and Heritage as a biodiversity hotspot and I believe that we need to protect the remnant vegetation we have left in order to maintain our species diversity.*
- 1.149 *The South West is a biodiversity hot spot, and the world simply does not have enough of these hotspots to destroy all of the time. The Margaret River area has many species of flora and fauna not found anywhere else in the world.*

The Busselton Augusta region of Western Australia is one of 15 regions in Australia that has been identified by the Department of Environment and Heritage in 2003 as Biodiversity Hotspots. The majority of the western portion of Western Australia has been identified as biodiversity hotspots. The 15 National Biodiversity Hotspots were identified to raise public awareness of environmental heritage at risk, and to support strategic action to conserve it. Listing as a Biodiversity Hotspot does not afford the area any additional statutory protection.

The Busselton Augusta Biodiversity Hotspot was identified primarily on the basis of the occurrence of the heathlands and shrublands on coastal plains. The proposed Riverslea subdivision is associated with inland woodlands and forests, not heathlands and shrublands on coastal plains.

### **3.6 Impact of Proposed Subdivision**

- 1.150 *It seems then extraordinary for the destruction of this biodiverse bush in good condition to be described as having ‘minimal’ impact [p.17]. That there is similar bushland elsewhere in the district in no way diminishes the values given above. The EPA objective for vegetation [PER report p.14] is not met by the proposal.*
- 1.151 *It goes on to say that because there are other habitats in the local area, the birds can move elsewhere, and that the destruction of this bush land should have minimal impact on their continued existence. I submit that this statement is unacceptable.*
- 1.152 *The report states the impact from the loss of approx 6.3 ha of native vegetation will be negligible.*

- 1.153 *The report claims that the clearing will have minimal impact on the environment and adjoining Darch Brook.*
- 1.154 *It is stated in the Report that the land can be cleared with only minimal impact on the environment. How can this be fact?*
- 1.155 *I am also appalled at the amazing suggestion that this clearing would have minimal impact on the environment.*
- 1.156 *The statement that “...the subdivision would not adversely affect the function of the riparian vegetation in maintaining water quality in Darch Brook or Margaret River (pg 3 Executive Summary) is also extraordinary.*
- 1.157 *The PER seems to be basing its claim that “...the direct impact on the regional fauna assemblage in the forested area will be negligible as the vertebrate assemblage is typical of the region” on blind faith.*
- 1.158 *The assumption of a “negligible “ impact cannot be accepted in light of our current lack of understanding of the effects of climate change on faunal assemblages.*
- 1.159 *The Developers statement that ....”although the vegetation is in good condition, clearing will have minimum impacts as it contains no threatened species” is gratuitous and take no accounts of the existing rich biodiversity in the Margaret River region.*
- 1.160 *The PER Report states that the impact from the loss of the remnant vegetation will be negligible (p7).*
- 1.161 *Of prime concern is the attitude that the loss of 6.3 ha of bushland will have no impact.*
- 1.162 *On page 7, Flora Assessment: it is stated that the impact from the loss of this native vegetation will be negligible. I believe that the impact will be huge as this bush is important for native fauna, flora biodiversity, wildlife corridor and for the general well-being of humans, be it simply for visual beauty or used as a recreational facility.*

From a regional conservation significance perspective, the clearing of less than 6.3ha (revised to 4.78ha) of predominantly regrowth Jarrah/Marri woodland for the purpose of the proposed subdivision will be minimal. The bushland on the site is considered representative of the Cowaramup (Cw1) and Wilyabrup (W1) Vegetation Complexes of which 50% and 44% of the total area of each respectively are currently protected within the reserve system. No significant flora identified from the area will be impacted by clearing.

- 1.163 *The PER report claims the land can be cleared for (dense) housing with minimal impact on the environment and the adjoining Darch Brook.*
- 1.164 *The subdivision would destroy all the bushland (6.3 ha). How is it possible that dense housing would have minimal impact on the environment of adjoining Darch Brook.*

The developer’s amendment of the subdivision so that additional bushland buffering Darch Brook is retained as Foreshore Reserve, along with implementing water sensitive urban design principles and strategies detailed in the *Stormwater Management Manual for Western Australia* (DoE, 2004) will assist in minimising the impact of the proposal subdivision on the environmental of Darch Brook.

#### 4. SUBMISSIONS RELATING TO PHYSICAL FACTORS

The following section provides a summary of the submissions made in relation to the physical factors identified in the PER. Both the EPA and project objectives for each physical factor, as provided in the PER document, are also shown under each subheading. The key issues relating to each physical factor are summarised along with the exact wording (in italics) extracted directly from each relevant submissions.

##### 4.1 Watercourses

***EPA Objective: To maintain the quantity of water so that existing and potential environmental values, including ecosystem maintenance are protected.***

***Project Objective: Protect the environmental values and maintain or enhance the key ecological functions of the wetlands and watercourse.***

##### 4.1.1 Destruction of Darch Brook/Buffers/Pressures on Darch Brook

1.165 *Darch Brook flows directly into the Margaret River a kilometre north of the subject bushland. The riparian vegetation in the Brook itself is healthy. The bushland, particularly the 5m closest to the streams, the stream zone enhancement, and the stormwater management, all do, or will, play a part in protecting the streams and river from pollution and other degradation.*

1.166 *50m are required to protect wetland (riverine) vegetation to allow sustainable management.*

1.167 *Riverslea Gardens 2002 subdivision was approved on condition (1) that there would be a 50 m buffer in dryland vegetation along Darch Brook, and for a very good reason, environmentally and for its scenic beauty, the developer got his subdivision on these terms and should keep to these terms, simple as that.*

The developer of the Riverslea subdivision, Greendene Corporation Development, acknowledged that the proposed subdivision should be located further away from Darch Brook. To ensure that the environmental attributes, function and values of the waterway and riparian zone are maintained and that impacts from the proposed subdivision development on Darch Brook are minimised, Greendene has revised the subdivision to ensure that a Foreshore Reserve at least 50m in width is retained between the subdivision development and Darch Brook.

1.168 *Destroy all 6.3ha of bushland which acts as a vital buffer to the Darch Brook.*

1.169 *By its subdivision approval in 2002 and subsequent inclusion of stream buffer lots the proposed Riverslea Gardens development would destroy all the bushland there (6.3ha), including any stream buffer along Darch Brook.*

1.170 *The subject bushland is important for its scenic beauty, for recreation, as a habitat for native fauna, as part of a wildlife corridor along Darch Brook and the Margaret River, for its floral biodiversity, and as a buffer to Darch Brook (at the junction of an east flowing tributary).*

1.171 *Many of the policy documents listed above, including the L-NRSP, and also the Water and Rivers Commission Guidelines and WAPC Water Resources and Public*

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*Open Space policies state the necessity for vegetation buffers to protect stream zones from encroachment and nutrients, poisons and sediment in run-off.*

- 1.172 *The guideline on buffering in the Water Resources SPP is to, 'Ensure adequate and appropriate buffering of waterways and estuaries to maintain or enhance the environmental attributes, functions and values of the water resource and minimise the impact of nearby land uses, both existing and future (p.17). Buffers are measured from the outer edge of the '2-3 year floodway' to be not less than 30m and to be normally included as foreshore reserve.*
- 1.173 *Again, if stream buffers are not important, why are they supported in all the relevant policy documents.*
- 1.174 *The clearing of this vegetation is said to be a matter of concern because it is likely to result in loss of fauna habitat, removal of the vegetated buffer to Darch Brook and potential on water quality within the Brook.*
- 1.175 *The proposal provides no buffer along Darch Brook, meaning there will be increased turbidity of the brook before passing its pollution and sediment on to the Margaret River.*
- 1.176 *To suggest that the streamline buffers as proposed will safeguard the Riparian vegetation and the waterways, in isolation and without the support of their hinterland vegetation complex is either appalling ignorance or appalling cynicism.*
- 1.177 *In my opinion the 6.3ha of bush along the Riverslea creekline is very important in the retention of this rural atmosphere that is so important to this town.*
- 1.178 *We understand that in the December 2002 Enquiry by Design workshop resolved that nearly all remaining bushland was to be protected and all stream zones to be buffered and enhanced. Various policy documents for biodiversity support the retention of remnant bush within developments and state the necessity for vegetation buffers to protect stream zones from encroachment.*
- 1.179 *There is so little vegetation left and it makes a lot of environmental sense that any that any remaining bushland left, be immediately adjacent to a stream system, such as Darch Brook.*
- 1.180 *The bushland is also a buffer between the estate and the river.*
- 1.181 *The proposal is to build houses within a few meters of the brook itself, without any buffer region. I submit that it is unacceptable to consider any building development within close proximity to Darch Brook.*
- 1.182 *This is immaterial, especially as there is no buffer between the development site and Darch Brook.*
- 1.183 *The subdivision provides no stream buffer between the development and Darch Brook.*
- 1.184 *A significant feature of the East Margaret River Structure Plan is the alignment of the proposed Perimeter Road as close as possible to the eastern side of the Darch Brook to maximize the buffer between this bypass road and residential development. Subdivision of the bushland will severely compromise the buffering qualities of the*

*Darch Brook wildlife corridor and actually locate residential development closer to the Perimeter Road.*

- 1.185 The Report states on pg 4 that “clearing of approx. 0.0172 of riparian vegetation associated with Darch Brook and 6.3ha of upland vegetation associated with the remainder of the subdivision has the potential to result in a decline in the end function of Darch Brook and the Margaret River”. The EPA must do everything possible to ensure that this does not occur and the retention of the bushland is an essential part of this process.*
- 1.186 Very important is the protection of stream zones i.e. buffer zones.*
- 1.187 The PER report states that the clearing of the 6.3ha has the potential to result in a decline in the end function of Darch Brook and the Margaret River.*
- 1.188 Apart from the visual impact, and the destruction of local flora and fauna, as a person that has kayaked down Margaret River and seen from the river the damage to parts of this once beautiful river the pollution, winter run off and stress on Darch Brook from lack of a buffer, would in my view be appalling.*
- 1.189 The current proposal will result in the destruction of all bushland in the site (6.2ha) and provide no stream buffer along Darch Brook.*
- 1.190 I am opposed to the destruction of good bushland at Sussex Locations 9002 and 9101, Riverslea Gardens for housing for the following reasons. It acts as a buffer to Darch Brook.*
- 1.191 Apparently in Dec 2002, the Enquiry by Design workshop resolved that nearly all remnant bushland is to be protected and all stream zones to be buffered and enhanced.*
- 1.192 The subdivision provides no stream buffer between the development and Darch Brook.*
- 1.193 The Riverslea Gardens Subdivision would destroy all 6.3ha of bushland which acts as a vital buffer zone to the Darch Brook.*
- 1.194 A lack of setback from Darch Brook and the loss of riparian vegetation through this area. Furthermore the principle of retention of riparian vegetation has been built into relevant policy and legislation including the Leeuwin Naturaliste Ridge Statement of Policy and Town Planning Scheme 17.*
- 1.195 The proposed plans (which propose clearing of riparian vegetation along Darch Brook) and the current stormwater management of the portions of the development already developed (which include stormwater draining directly into Darch Brook) provide no suggestion that the proposed development will result in anything remotely resembling best practice water sensitive urban design.*
- 1.196 The EBD workshop stated that almost all the remaining bushland was to be protected and stream zones to be buffered and enhanced.*
- 1.197 In the PER report under the heading the “Potential Impact” clearing this 6.3ha has the potential to result in a decline in the end function of Darch Brook and the Margaret River.*

- 1.198 *The Department (of Environment) also recommends the requirement of a 30m buffer from the identified riparian zone, be placed on any approval given.*
- 1.199 *The exclusion of this area will also provide a sufficient buffer to the riparian vegetation of approximately 30m from the outer extent of the fringing vegetation which is consistent with State Planning Policy 2.3.*
- 1.200 *I submit that the EPA recommend protection of the 6.3ha of bushland and a Darch Brook buffer on environmental grounds by considering the particular flora and fauna that will be destroyed, the water quality of Darch Brook that will be imperilled and the need to preserve good quality bushland in the face of climate change in the South-West.*
- 1.201 *The development is too close to a significant waterway. Darch Brook is a major tributary to the Margaret River. Any development should have a buffer zone. The proposed development is not only close to Darch Brook, the proposed road would be built over part of the brook.*
- 1.202 *The bush in question is important to the protection of the water health of the Darch Brook.*
- 1.203 *The subdivision provides no stream buffer between the development and Darch Brook. The health of our waterways must be a priority as history has shown this is a huge problem in itself.*
- 1.204 *It also has an important role in providing filtering of run-off water feeding into the Darch Brook, ensuring its health & ongoing survival. In the proposed subdivision, no stream buffer is provided between the development and Darch Brook.*
- 1.205 *To me the most significant thing is to allow for a buffer of vegetation along Darch Brook, between the subdivision and the brook, to keep a bush corridor to help maintain the health of the waterway.*
- 1.206 *It is an important piece of riparian vegetation as it acts as a buffer to the stream and river system, has a diversity of plant and bird life, an active ecosystem and is one of few remaining areas of quality bushland east of Margaret River, yet still close to the townsite.*
- 1.207 *This area contains high priority flora and fauna, which should be protected at all costs, and also forms an essential vegetation and storm water buffer between the subdivision and Darch Brook, which is a tributary into the Margaret River.*
- 1.208 *The principle outcome of the Enquiry by Design, one supported by the Council, was the protection of almost all remnant bushland (including some not then approved for subdivision at Riverslea), all stream zones to be protected, enhanced and buffered.*

The developer of the Riverslea subdivision, Greendene Corporation Development, acknowledged that the proposed subdivision should be located further away from Darch Brook. to ensure that the ecological attributes of the waterway and its riparian vegetation were protected. As a consequence, to ensure that the environmental attributes, function and values of the waterway are maintained and that impacts from the proposed subdivision development on Darch Brook are minimised, the subdivision design was amended so that a setback of at least 50m in width comprised of Excellent condition vegetation is retained as Foreshore Reserve ensuring that an adequate and appropriate buffer to the watercourse is provided.

- 1.209 *The maps shown in the plan are unchanged from the earlier versions and it still does not show accurate boundaries to wetland vegetation or buffers to protect wetland vegetation.*

The map (Figure 3 in PER) provides an accurate delineation of the extent of riparian vegetation associated with Darch Brook (i.e. *Taxandria linearifolia*/*T. juniperina*/*Leptospermum erubescens* Closed Heath). The original subdivision design has been modified (see Figure in this report) to provide a buffer between the subdivision and the riparian vegetation of at least 50m in width to protect the values of Darch Brook.

## 4.2 Surface Water Quantity and Quality

***EPA Objective: To ensure that emissions do not adversely affect environment value of health welfare and amenity of people and land uses by meeting statutory requirements and acceptable standards and that stormwater management proposed for the subdivision is consistent with water sensitive urban design measures detailed in the Stormwater Management Manual for Western Australia (DoE, 2004).***

***Project Objective: To ensure emissions do not adversely affect Darch Brook or Margaret River.***

### 4.2.1 Water Sensitive Urban Design/Stormwater Management

- 1.210 *Despite proposed water sensitive urban design, stormwater from the subdivision will place additional pressure on Darch Brook.*
- 1.211 *Although conditional and planned as part of the overall development, to date there has been no stormwater management or stream zone rehabilitation implemented in the Riverslea Gardens area.*
- 1.212 *That management, including the emplacement of stormwater systems and the enhancement of wetland, is required to be done as a general condition of the Riverslea subdivision approvals. As yet none of it has been implemented and stormwater drains directly into Darch Brook.*
- 1.213 *The bushland, particularly the 50m closest to the streams, the stream zone enhancement, and the stormwater management, all do, or will, play a part in protecting the streams and river from pollution and other degradation.*
- 1.214 *The clear intention at the December 2002 Enquiry by Design meeting into East Margaret River was that nearly all remnant bushland is to be protected, all stream zones were to be protected, enhanced, buffered and water sensitive urban design was to be applied.*
- 1.215 *One theory is that standards for stormwater management here have been set for sandy soils in Perth, while the Riverslea area has clay and gravel soils. Even if developers comply with the strict regulations, the systems will not be appropriate for the soil type. Look at the Margaret River in June when the river runs red.*
- 1.216 *The subdivision provides no stream buffer between the development and Darch Brook. So much for their water sensitive urban design!*
- 1.217 *As stormwater drains directly into Darch Brook there are downstream effects on the Margaret River as well.*



- 1.218 *In 2002 the Detailed Outline Plan for East Margaret River protects almost all the existing remnant vegetation. Protects all remaining stream zones, and provides best practice stormwater management system.*
- 1.219 *In December 2002 the State-empowered Enquiry by Design into east Margaret River recommended that all remnant bushland be protected, stream buffer zones be established and stormwater management systems be set in place.*
- 1.220 *All stream zones to be protected, enhanced and buffered, and water sensitive urban design to be applied, including stormwater management systems.*
- 1.221 *Although planned as part of the overall development, to date there has been no stormwater management or stream zone rehabilitation implemented in the Riverslea.*
- 1.222 *Some management has been implemented but downstream from Riverslea, stormwater drains directly into Darch Brook.*
- 1.223 *The current stormwater management of the portions of the development already developed (which include stormwater draining directly into Darch Brook) provide no suggestion that the proposed development will result in anything remotely resembling best practice water sensitive urban design.*
- 1.224 *The management of the stormwater drains which drains directly into Darch Brook will have downstream effects on the Margaret River.*
- 1.225 *The PER also makes reference to a 'Stormwater and Watercourse Rehabilitation Management Plan' to address stormwater management and the 'sumpland/dampland wetland.*
- 1.226 *All stream zones to be protected, enhanced and buffered, and water sensitive urban design to be applied, including stormwater management systems.*
- 1.227 *The EPA objectives for watercourses and surface water quantity and quality [PER report pp. 28, 32] are not met by the proposal*

As described in the PER (Section 3.7.6), urban stormwater from the proposed Riverslea subdivision development will be managed in accordance with the principles of water sensitive urban design and best practice drainage design as described in the *Stormwater Management Manual for Western Australia* (DoE, 2004). The developer's commitment to rehabilitate the degraded tributary of Darch Brook along the southern boundary of the subdivision area into a natural sumpland/dampland will assist in both containing and treating short stormwater flows from the proposed subdivision flowing into Darch Brook. The degraded tributary currently runs through agricultural land, transporting nutrients into Darch Brook. The proposed rehabilitation of the tributary will improve the quality of water entering both Darch Brook and Margaret River. Additionally, as a condition of subdivision approval, the developer is committed to preparing a Stormwater and Watercourse Rehabilitation Management Plan. The Stormwater and Watercourse Rehabilitation Management Plan will incorporate an examination and an evaluation of the hydraulics of Darch Brook, commit to retaining post development hydrology as close as possible to pre-development levels. Additionally, the management plan will commit to the principles of prevention of erosion and management of sedimentation.

The development itself will be undertaken in a manner which will minimise changes in the hydraulic balance of the site and will aim to maintain wetland function to maintain the ability of the wetland system to process nutrients prior to the groundwater discharging to the Darch

Brook. As indicated in the PER, the design of the development will incorporate a range of measures to reduce nutrient export from the site including:

- The provision of sewerage to all lots.
- The maintenance of the existing wetland system on the site.
- The use of Water Sensitive Urban Design throughout the development to maximise infiltration of stormwater and trap nutrients.
- The provision of additional wetland features within the stormwater system to further treat stormwater that cannot be infiltrated on site prior to discharge to the Darch Brook.

As a result of these measures, it is considered that the development will not materially affect nutrient loads to the Darch Brook-Margaret River system.

#### **4.2.2 Rehabilitation/Offsets/Compensation**

*1.228 Although conditional and planned as part of the overall development, to date there has been no stormwater management or stream zone rehabilitation implemented in the Riverslea Gardens area.*

*1.229 Compensation for this area, if lost, being sited 2km away contradicts all that is known and appreciated about local differences and the very small range of some flora and fauna communities.*

*1.230 How can we be assured that stormwater management or stream zone rehabilitation will be implemented correctly in the Riverslea Gardens area?*

*1.231 There can be no possibility of minimizing the impact except for the dubious rehabilitation of 1.2ha of wetland. The wetland area is suggested as a sumpland for stormwater run-off from the development, which immediately throws into question its viability as habitat.*

*1.232 As at the present time there has been no adequate stormwater or rehabilitation of stream zone in Riverslea Gardens.*

*1.233 Although planned as part of the overall development, to date there has been no stormwater management or stream zone rehabilitation implemented in the Riverslea.*

*1.234 The PER also makes reference to a 'Stormwater and Watercourse Rehabilitation Management Plan' to address stormwater management and the 'sumpland/dampland wetland'. All stormwater management should be approved and take into consideration, comments previously made by Bill Till of the Department and comply with WSUD principles. This plan should be extended to include management of the foreshore reserve recommended above.*

Noted.

*1.235 The loss of 6.3 ha of native upland vegetation will **not** be partially offset by the rehabilitation of approximately 1.7ha of wetland habitat. Upland and wetland habitats have different conservation values.*

*1.236 We need to carefully consider if the rehabilitation of 1.7ha of creekline vegetation is a reasonable offset for loss of 6.3ha of high quality upland vegetation and some*

*wetland vegetation. DoE officers have inspected several similar attempted rehabilitation projects recently and most have not been successful due to major problems with weeds, etc.*

In terms of offsetting the loss of habitat, the proposal to rehabilitate approximately 1.7ha of wetland habitat never claimed to represent a direct offset for the loss of the native upland vegetation. The developer acknowledges the fact that upland and wetland habitats possess differing conservation values. The developer's amendment of the subdivision to achieve a vegetated buffer at least 50m in width between the subdivision development and Darch Brook also means that the total area proposed to be cleared has been revised to approximately 4.78ha as opposed to the 6.3ha proposed to be cleared in the original subdivision design. The additional vegetated buffer proposed for retention is predominantly Excellent condition Jarrah/Marri/Blackbutt Woodland.

The proposed Stormwater and Watercourse Rehabilitation Management Plan will include maintenance and monitoring components to ensure that weeds are controlled and revegetation achieves predetermined standards.

### **4.3 Foreshore Management Plan**

*1.237 Foreshore Management Plan for the whole of Riverslea was drafted in 2002. It includes all the 'offsets' the report infers are contingent on Riverslea Gardens development [PER report, p.41].*

*1.238 A foreshore management plan for the whole Riverslea was drafted in 2002. It includes all offsets the report infer are contingent on the Riverslea Gardens Development. The management plan requirements enhancement of stormwater systems and the enhancement of wetlands as general condition of subdivision approval.*

*1.239 This foreshore reserve should also have an approved management plan to provide management actions and responsibilities. The retention of this foreshore reserve would contribute to off-setting the clearing of the balance of the area subject to the PER..*

*1.240 In our earlier comments we asked about how the indirect impacts on native vegetation that inevitably occur when next to housing will be controlled. This does not seem to have been addressed. Increased public access to remaining vegetation is likely, and in the long term would substantially increase the environmental impacts of this subdivision, unless adequately managed.*

The proponent has made a commitment to prepare and implement a Stormwater and Watercourse Rehabilitation Management Plan, which includes a Foreshore Management Plan component, to the satisfaction of regulatory agencies. The management plan will include (but not be limited to):

- management of the foreshore area and development interface;
- a management plan for Darch Brook;
- water conservation principles;
- appropriated plant species to be utilised in revegetation;
- design of the swales;

- a rehabilitation of degraded tributary of Darch Brook into a natural wetland;
- provision and alignment of recreational facilities, including limiting access to the foreshore area;
- installation of signage; and
- management of drainage and nutrients from the proposed development.

The implementation of a revegetation program to improve degraded sections of the tributary area will assist in the enhancement of the habitat for native fauna species, intercept and assimilate the potential movements of nutrients into the river and enhance the natural buffer zone between the proposed development and the foreshore reserve. Importantly, revegetation of degraded areas will provide a natural barrier to the movement of people beyond the proposed access path.

#### **4.4 Climate Change as a Result of Clearing**

- 1.241 *The CSIRO science report on 27 July 05, reported that temperature increases in Australia will affect climate change, resulting in more droughts, severe cyclones and storm surges in the next 30-50 years. "The report identifies Cairns, the Murray Darling Basin and South West Western Australia as the three regions to be the most vulnerable...." Can we apply this to the 6.3ha of bushland in Riverslea?*
- 1.242 *CSIRO science report 27 July 05 reported that temperature in Australia will increase effecting climate change, resulting in more droughts, severe cyclone and storm surges in the next 30-50 years.*
- 1.243 *According to the CSIRO science report on 27 July 2005, the temperature increases in Australia will affect climate change, with all its known consequences. The south-west of WA was identified as one of the regions most vulnerable.*
- 1.244 *With Climate Change in the South West now recognized by the Govt. this dissimilarity will increase. Representations of more fragile, dampland species will be lost.*
- 1.245 *The assumption of a "negligible "impact cannot be accepted in light of our current lack of understanding of the effects of climate change on faunal assemblage.*
- 1.246 *It ignores the subject areas importance as part of a corridor system and it also ignores the impact of a 30 year period of below average rainfall which is likely to have ha severe repercussions on the fauna in the region.*

The CSIRO report stated that climate change might overwhelm some fragile species and remnant habitats in Australia and identified heathlands systems in southwest Western Australia as being potentially vulnerable to these changes. The vegetation of the Riverslea bushland is associated with woodland and forest rather than heathland systems.

The south west region was also identified in the CSIRO report as a highly vulnerable region that should be given priority for further adaptation planning and response. The report states the area exhibits a potent combination of exposure to climate change, sensitivity and need for facilitative adaptive action with ongoing dialogue between industry, governments and the scientific community is required, aimed at addressing the threat that climate change poses for these areas. While there is evidence that broadscale clearing of native vegetation for agriculture, such as that which has occurred in the Wheatbelt region of Western Australia over

the past 100 year, has resulted in localised climatic changes including decreasing rainfall, the clearing of 4.78ha of bushland at Riverslea is unlikely to have a significant impact on climate change in the southwest region of Western Australia.

## 5. SUBMISSIONS RELATING TO SOCIAL FACTORS

The following section provides a summary of the submissions made in relation to the social factors identified in the PER. Both the EPA and project objectives for each biophysical, as provided in the PER document, are also shown under each subheading. The key issues relating to each social factor are summarised along with the exact wording extracted directly from each relevant submissions.

### 5.1 Aboriginal Heritage

***EPA Objective: To ensure that changes to the biophysical environment do not adversely affect historical and cultural associations and comply with relevant heritage legislation.***

***Project Objective: To ensure that there is no unauthorised disturbance to Aboriginal Heritage sites associated with the proposed development.***

1.247 *Darch Brook is recorded as a place of Aboriginal significance and its protection is important. The EPA objective on Aboriginal heritage [p.35] is not met by the proposal in this respect.*

In 2004, a Section 18 clearance under the *Aboriginal Heritage Act 1972* was sought by the developer from Department of Indigenous Affairs to construct a sewer line in close proximity to Darch Brook (part of Aboriginal Sites Register Site No 4495). Subsequently the Minister for Indigenous Affairs granted conditional approval to the developer to allow for Section 18 clearance. Therefore the EPA objective is met by the proposal.

1.248 *A Section 18 notice under the Aboriginal Heritage Act was considered by the Aboriginal Cultural Materials Committee late last year. The Minister for Indigenous Affairs granted conditional consent to HE Harris, MC Johnson, EM Green and Greendene Development Corporation for the development of Lot 27 and Lot 9107 Bussell Highway Margaret River for residential purposes, public open space, a school site and local commercial purposes. While the above Lot numbers differ to those specified in the PER, the area covered by the PER is also considered part of the Section 18 Notice.*

Noted

### 5.2 Public Open Space

1.249 *Native Vegetation on the site is to be cleared and degraded areas utilized for public open space.*

1.250 *The subject land adjoins land designated for protection of Darch Brook and its tributaries and would make a desirable addition to the overall public open space spines and configuration.*

The developer has amended the original subdivision design to incorporate the retention of a vegetated buffer and Foreshore Reserve between the subdivision development and Darch Brook that is at least 50m wide. In addition to ensuring that the environmental attributes, function and values of Darch Brook are maintained and that impacts from the proposed subdivision development on Darch Brook are minimized, the proposal also means the existing informal walk trail along the edge of the Darch Brook riparian zone will be retained and possibly enhanced, providing an additional passive recreation area and a desirable addition to the overall public open space in the area.

1.251 *The area next to Darch Brook on the aerial photograph on page 60 of the PER marked as 'Public Open Space' is misleading..... The report on Page 60 has an aerial photograph that clearly shows an area over the road from the building lots marked as 'Public Open Space'. This is misleading, as it implies that the development is leaving a strip of land at the edge of the development that can be used by the public. This is not true. Currently the development butts up to the Darch Brook. This is not public open space, it is a brook, and is currently flooded with water. There is no public access in this area at this time of year. I submit that the PER should accurately reflect the facts, and state that there will be no access for the public on the area marked on the plan as 'Public Open Space'. I further submit that there should be public open space in this area, and that the whole development should be set aside and kept as Public Open Space for the benefit of all residents of Margaret River.*

1.252 *As Darch Brook has been declared Public Open Space it is in danger of decimation.*

The Public Open Space associated with Darch Brook that is shown in the PER reflects the POS area identified in the Outline Development Plan (ODP) which was prepared for Sussex Location 2141, 2142, Lot 81 and 1002 Willmott Avenue and Forrest Rd Margaret River and approved by the Shire of Augusta Margaret River in 2001. Furthermore the developer has amended the subdivision design to incorporate the retention of a Foreshore Reserve at least 50m wide between the development and Darch Brook which will formally allow the area to be utilised by the residents of Margaret River.

### **5.3 Recreational/Visual/Social Value of the Bushland**

1.253 *Another important attribute is that the bushland will act as an educator as to its values and the need to protect it. People will enjoy visiting it, seeing the flowers in spring, the birds and those glimpses of rare marsupials.*

1.254 *It is important for community health. Children can play there, adults can wander down paths. This is an important scenic spot.*

1.255 *The social value of this bush area does not seem to have been considered at all.*

1.256 *Bushland located at driving distance from the development is not a substitute for the passive recreation afforded by Excellent bush within walking distance.*

1.257 *Few people drive to bushland regularly to enjoy its social and recreational amenities and observe its nature.*

1.258 *Have the social environmental factors been effectively taken into account? The proposed development bush could be used to enhance the social aspects of the entire area. Already there are good paths through the bush, given people access to the flora and fauna of the area. This could be enhanced to provide bicycle trails and nature trails.*

1.259 *The loss of 74 residential lots will have no negative impact on the commercial, educational and social environmental of Margaret River.*

1.260 *The planning for the expansion of the Margaret River townsite has placed the protection and enhancement of the natural environment as a prime factor in maintaining the character of the townsite. Any subdivision of the Darch Brook bushland undermines the considerable effort that has been invested in, and is necessary for future stages of, the East Margaret River Structure Plan.*

- 1.261 *This bushland joins onto the Darch Brook Reserve which then joins onto the Margaret River bush reserves. As such it is part of an important wildlife corridor and adds to the recreational amenity of the area.*
- 1.262 *A deep commitment from local people had not just provided crucial information (i.e. with seasonal surveys) but this commitment also gives an insight into the social value of the block as well. The PER mentions Social Impacts on p3 but the assumption that "74 residential lots....will add to the commercial, educational and social environment of Margaret River" cannot be justified if the environmental and social cost is too great.*
- 1.263 *This area of 6.3ha is a popular spot for local residents who wish to view the diverse flora and enjoy the bird life in an area close to their home.*
- 1.264 *Many families have come to live in Margaret River to enjoy the ambience of the unique bushland and its flora and fauna.*
- 1.265 *I have spent many days walking through this area and have always been delighted by the wonderful flora and its diversity.*
- 1.266 *I need this bush to find myself again when I'm sad, weary or worried.*
- 1.267 *We need this piece of sanity and eco-sanctuary for our children and ourselves.*
- 1.268 *The residents of Margaret River enjoy this wonderful area for recreation, walks, picnics and quiet enjoyment, for example. This is why we have chosen to live in this area, and what attracts newcomers here as well. Who will want to come to Margaret River when it looks like Mandurah or Rockingham's sprawling, treeless suburbs?*
- 1.269 *I rode my bicycle around it this morning. It's a typical bushland scene such as I remember from my childhood when Mt Pleasant was starting off.*

It should be noted that the Sussex Locations 9002 and 9101 is currently privately-owned land (by Greendene Development Corporation) not public open space. Public Open Space requirements have been satisfactorily agreed to between the relevant approval authorities through the structure planning and development approvals process. However the developers designed the subdivision to achieve a 50m wide, publicly accessible Foreshore Reserve between the subdivision development and Darch Brook also means the existing informal walk trail along the edge of the Darch Brook riparian zone will be retained and possibly enhanced.

#### **5.4 Community Consultation**

- 1.270 *The L-NRSPP makes a number of other consistent statements (pp.15, 30) including that the use of a comprehensive community consultation process for planning in Margaret River. Community consultation over Riverslea was basically nonexistent until the Enquiry by Design.*
- 1.271 *The process by which this land became subdividable was severely flawed. The wishes of the Augusta-Margaret River Council and the community were ignored by the WAPC and it approved the proposal to subdivide the above lots 19<sup>th</sup> October 2002.*



- 1.272 *Our town and community has grown up because of the River, and any development that could destroy that should only be considered after much thought, and with proper scientific consultation.*
- 1.273 *The report only acknowledges consultation by Greendene Development.*
- 1.274 *COMMUNITY CONSULTATION SHOULD BE A TWO-WAY AFFAIR.*
- 1.275 *The Council and community concerns must be taken into account.*
- 1.276 *I understand there is a need for development in Margaret River but wouldn't it be more beneficial for the developers to work with the community and listen to what they want.*

The Public Environmental Review process is just one of the mechanisms or processes that have provided the local Margaret River community an opportunity to provide input and prepare submissions on the proposed subdivision development at Riverslea. The structure planning and development approval processes provided adequate and appropriate opportunities where these issues could have been and were generally addressed.

## 6. GENERAL SUBMISSIONS

The following section provides a summary of the general submissions (that is, those not directly related to any one particular PER topic or issue). The wording extracted directly from submissions is in italics.

### 6.1 General Submissions

1.277 *We should, and must, do all we can to preserve all bush land that can be used by endangered species.*

1.278 *Some of the flora and fauna in this small area could be quite unique because of their isolation.*

No endangered species are known to use the Riverslea bushland. The Vulnerable listed bird species Baudin's Cockatoo has been observed in the vicinity of the bushland, but surveys, including a site investigation in October 2005, observed no Baudin's Cockatoo occupying nesting hollows in the area. The Southern Brown Bandicoot, a Priority 5 listed species, was recorded from riparian zone vegetation adjacent to Darch Brook. The small population of species of significant flora species (*Gahnia scleroides*) recorded from riparian vegetation adjacent to the site will be further protected by the developments commitment to revising the subdivision design to provide a Foreshore Reserve at least 50m in width.

1.279 *The wetlands associated with Darch Brook, is an integral part of the bush, a unique site for a town in Western Australia.*

1.280 *We moved to Riverslea believing that the bushland was to remain and no more development was going eastwards.*

1.281 *The EPA had not deemed it necessary to have a full environmental report on the subdivision until the community presented a petition with over 800 signatures gathered in 5 days and undertook surveys over 12 months of the flora and fauna in the area.*

1.282 *It is a substantial tract of land (6.3ha) with mature trees (some Marri would be hundreds of years old).*

1.283 *It is with utter disbelief I read that the developers of the Riverslea subdivision in Margaret River are again planning to bulldoze the 6.3ha of beautiful bush which is natural wetland and has a stream running along its entire length.*

1.284 *I bring your attention to the subdivision plan over bushland on a portion of Sussex Locations 9005, 9103, & 9203, Riverslea, as shown in Fig.3 of the Riverslea PER report (for the proposed subdivision on SLs 9002 & 9101). The bushland is about one hectare in area, located just north and in part contiguous with that of the study area. Fig.3 shows that this bushland is also planned to be developed as ~ R20 lots. We understand that the EPA reached an agreement with the proponent Greendene (Lester Group Ltd) in 2002 that this bushland would be conserved pending the outcome of the PER (ref. Gary Williams). Would you please confirm that this is the case and let us have a copy of any correspondence outlining the agreement?*

1.285 *What is the status of the bushland as regards the subdivision approval on SLs 9005, 9103, & 9203? Is it as shown in Fig.3, or has that subdivision plan been modified to protect it?*

- 1.286 *The application to rezone comes at a time when authorities and organizations worldwide have recognized.....*

No application to rezone the subdivision area is proposed. The area that is the subject of the PER is currently zoned "Development".

- 1.287 *Don't let the greenies stop affordable housing. The Shire of Augusta Margaret River has 2000km/sq of bushland and this vocal minority who drive smelly cars and generally already own a home are jeopardising my future. Everywhere you look in Margaret River there are trees so why all the fuss?*

Noted.

## 6.2 Enquiry by Design Workshop

- 1.288 *The clear intention at the December 2002 Enquiry by Design meeting into East Margaret River was that nearly all remnant bushland is to be protected.*
- 1.289 *The Enquiry by Design workshop eventuated in the Shire of Augusta-Margaret River decided to protect all remnant bush left in East Margaret River.*
- 1.290 *We understand that in the December 2002 Enquiry by Design workshop resolved that nearly all remaining bushland was to be protected and all stream zones to be buffered and enhanced.*
- 1.291 *Enquiry by Design Workshop being set up the WAPC – it was held in December 2002. During this process the need to protect remnant bush and streamlines was a priority.*
- 1.292 *Enquiry by Design process conducted in 2002 found that there should be an overriding value placed upon retention of what is left pf the native bush in east Margaret River.*
- 1.293 *Enquiry by Design into East Margaret River recommended that all remnant bushland be protected, stream buffer zones be established.*
- 1.294 *The principle outcome of the Enquiry by Design, one supported by the Council, was the protection of almost all remnant bushland (including some not then approved for subdivision at Riverslea), all stream zones to be protected, enhanced and buffered, and water sensitive urban design to be applied, including stormwater management systems.*
- 1.295 *The clearing of this remnant vegetation is clearly contrary to the conclusions reached by the Enquiry by Design.*
- 1.296 *Apparently in Dec 2002, the Enquiry by Design workshop resolved that nearly all remnant bushland is to be protected and all stream zones to be buffered and enhanced.*
- 1.297 *I was invited to attend the Enquiry by Design workshop in December 2002 where the council resolved that all remnant bushland in East Margaret River was to be protected including areas not approved for subdivision in Riverslea. All stream zones were also to be protected and storm water management systems were to be included.*

- 1.298 *The Augusta-Margaret River Shire's Draft East Margaret River Detailed Outline Plan (Feb. 2004) shows the bushland to be conserved as public open space as an outcome of the 2002 East Margaret River Enquiry by Design.*
- 1.299 *As stated, its circumstance is different to that of the PER study area in that it was conserved by the WA Planning Commission's Enquiry by Design and incorporated into the Shire's Detailed Outline Plan for East Margaret River. But if in contradiction of this the bushland has been approved to be developed on, and taking into account the agreement mentioned above, when should we formerly request assessment? What form should our request take and to whom.*
- 1.300 *It may well not be relevant to the EPA's considerations, but the Council, many local people and the exhaustive "enquiry-by-design" process for East Margaret River, all indicated that preservation of this bushland was important to them because they felt the bushland was an important environmental resource for the community.*
- 1.301 *The clearing of this remnant vegetation is clearly contrary to the conclusions reached by the planning workshops.*
- 1.302 *Enquiry by Design for that area and a past member of the Margaret River Townsite Strategy Committee (now resident in Perth) I believe the development should not impinge upon any native vegetation.*
- 1.303 *Enquiry by Design, one supported by the Council, was the protection of almost all remnant bushland.*

The Margaret River Enquiry by Design Workshop held in December 2002 aimed to plan for and manage the future growth of Margaret River in a sustainable manner. Enquiry-by-Design workshops are typically conducted to bring together major stakeholders at one time and place to discuss, develop and draw possible urban design and planning solutions to specific, place-based problems. Enquiry-by-Design workshops are non-binding workshops designed to encourage participants to consider planning proposals creatively, to step outside the sometimes limiting, constraints of their formal roles, and to provide the flexibility to consider and debate a wide range of options.

One of the features of the Detailed Outline Plan for East Margaret River recommended additional bushland protection for the Riverslea Estate. There was no recommendation in Detailed Outcome Plan to protect all native vegetation in East Margaret River. Another feature of the Detailed Outline Plan was for the conservation and enhancement of Darch Brook and associated vegetation and streams. The developer's amendment of the subdivision so that additional bushland buffering Darch Brook is retained as Foreshore Reserve, along with implementing water sensitive urban design principles and strategies detailed in the *Stormwater Management Manual for Western Australia* (DoE, 2004) will assist in the conservation and enhancement of Darch Brook and associated vegetation and streams.

### **6.3 Alternative Sites for Subdivision**

- 1.304 *Surely the developer's economic commitments could be catered for by arranging a land swap for adjoining degraded, cleared farm land.*
- 1.305 *With all the potential development sites in the area, why are we considering destroying bush land that can never be replaced? If all other development areas had been developed.*

- 1.306 *I further submit that this area of land should only become an option for development once all other existing cleared land has either been developed.*
- 1.307 *Areas of remnant bush, especially areas rich in biodiversity such as Sussex location 9002 & 9101, Riverslea Subdivision are essential for healthy urban development and lifestyle. With the amount of farmland available, does this island of beauty and wonder have to go?*
- 1.308 *The developer has failed to make a case for why 6.3ha of remnant bushland should be destroyed to make way for a housing estate when there is ample land that is not of high conservation value in the rest of East Margaret River that is available for a suitable subdivision.*
- 1.309 *In regard to the Riverslea bushland subdivision plan in Margaret River, why don't you scrap it and find a paddock somewhere that's already cleared and let the developer have that - on the condition that they improve it by planting native species there.*
- 1.310 *There are plenty of other already cleared (previously pastured land) for further housing development.*
- 1.311 *There is absolutely no need in the year 2005, to clear established flora & fauna bushland areas, simply because of the vast amount of already cleared land & farmland in & around this subdivision.*
- 1.312 *There are many other areas of old farm land nearby available for subdivision without having to destroy valuable and irreplaceable bushland.*
- 1.313 *Further to this, there are large tracts of farmland that are perhaps under-utilised and, being already clear of native habitat, would be more suitable to any further housing development.*
- 1.314 *When there is already much cleared farmland surrounding this area.*

The land for the proposed Riverslea subdivision (Sussex Locations 9002 and 9101) has been zoned "Urban" under the Shire of Augusta Margaret River Plan Planning Scheme for over a decade. Land needs to be zoned urban for a residential subdivision to proceed. The large tracts of cleared farmland to the east Darch Brook are currently zoned Rural and are therefore unsuitable for an urban subdivision without an amendment to the Town Planning Scheme which must be instigated by the Shire of Augusta-Margaret River. To contain the physical spread of the town of Margaret River, the Shire of Augusta-Margaret River adopted Darch Road (on the eastern side of Darch Brook) as the eastern limit for urban development of the town. Therefore there is currently no possibility "relocating" the proposed subdivision to the land to east of Darch Brook.

## **7. LIST OF ABBREVIATIONS**

CALM	Department of Conservation and Land Management
DoE	Department of Environment
EBD	Enquiry By Design
EPA	Environmental Protection Authority
ODP	Outline Development Plan
PER	Public Environmental Review
POS	Public Open Space
WAPC	Western Australian Planning Commission
WWF	Worldwide Fund for Nature

## REFERENCES

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- Strahan, R. (ed.). (1995). *The Australian Museum Complete Book of Australian Mammals*. 2<sup>nd</sup> edition. Angus and Robertson, Sydney.

**FIGURE**







## **APPENDIX 1**

### **KEY ISSUES RAISED IN RIVERSLEA PER SUBMISSIONS AND SUBMISSION NUMBERS**

## APPENDIX 1

### KEY ISSUES RAISED IN RIVERSLEA PER SUBMISSIONS AND SUBMISSION NUMBER

ISSUE	SUBMISSION Nos.
<b><i>BIOPHYSICAL FACTORS</i></b>	
Loss of Very Good to Excellent Native Vegetation/Last Remaining Good Quality vegetation in East Margaret River area/Loss of Flora	215297,215311 215045,215054 215113,215114 215145,215356 215163,215164 215185,215204 215205,215206 215246,215248 215250,215251 215258,215280 215296,215050 215051,215046 215087,215143 215139,215142 215150,215151 215152,215153 215306,215287 215292,215294 215301,215305 215306,215309 215314,215315
Flora Surveys	215297,215311 215044,215118 215145,215356 215192,215205 215246,215280 215303,215050 215150,215152 215300,215301 215305,215309 215314,215208 DoE Conservation Branch
Previous Disturbance to Bushland	215311,215045 215145,215356 215205
Significant Flora	215229,215311 215044,215045 215115,215118 215145,215356 215205,215246 215296,215299

ISSUE	SUBMISSION Nos.
	215290,215300
Fauna Surveys	DoE Conservation Branch
Loss of Baudin's Black Cockatoo or Western Ringtail Possum habitat	215118 215209 215050 215150 DoE Conservation Branch
Wildlife Corridor/Fauna Linkage/Greenbelt	215229;215045 215104;215145 215356;215147 215163;215164 215185;215192 215205;215208 215251;215296 215299;215051 215087;215143 215139;215142
Biodiversity Hotspot	215054;215296 215141
Impact of Proposed Subdivision	215311,215118 215145,215356 215185,215192 215209,215246 215253,215280 215296,215310 215279,215290 215314
Climate Change as a Result of Clearing	215054;215296 215310;215279
<b>PHYSICAL FACTORS</b>	
Destruction of Darch Brook/ Buffers/Pressures on Darch Brook	215229,215311 215044,215054 215103,215105 215114,215115 215118,215145 215356,215147 215185,215186 215205,215209 215248,215253 215280,215296 215299,215303 215310,215050 215142 ,215154 215150,215152 215290,215300 215301,215304 215308,215305 215309,215314 DoE Conservation Branch
Water Sensitive Urban Design/	215297;215311

ISSUE	SUBMISSION Nos.
Stormwater Management	215044;215145 215356;215204 215248;215253 215280;215296 215303;215310 215050;215314
Rehabilitation/Offsets/Compensation	215297;215054 215246;215248 215280;215050 DoE Conservation Branch
Foreshore Management Plan	215311;215145 215356;215296 215050; DoE Conservation Branch
<b><i>SOCIAL FACTORS</i></b>	
Aboriginal Heritage	214889;215311
Public Open Space	215297;215118 215185;215903
Recreational/Visual/Social Value of Bushland	215045;215054 215118;215147 215205;215246 215306;215313 215252
Community Consultation	215229;215311 215118;215145 215356;215296
<b><i>GENERAL</i></b>	
General Statements	215118;215145 215356;215163 215164;215192 215208;215140 215144;215048
Enquiry by Design Workshop	215044;215045 215105;215192 215248;215253 215280;215296 215316;215423 215903;215154 215298;215307 215314
Alternative Sites for Subdivision.	215054;215118 215203;215249 215296;215049 215306;215304 2315308