

**LEGEND**

- Areas to be Dedicated to Cudgen Nature Reserve (Approx Total Area 178ha)
- Kings Forest Boundary



SOURCE: Landsurv Pty Ltd (Ref: 34860\_2\_NPWS DEDICATED LAND\_130511.pdf)  
 SCALE: 1 : 20 000 @ A3  
**JAMES WARREN & ASSOCIATES PTY LIMITED**  
 Environmental Consultants

CLIENT: Project 28 Pty Ltd  
 PROJECT: Stage 1 - Koala Plan of Management  
 Kings Forest Estate  
 Melaleuca Drive, Duranbah, NSW  
 Shire of Tweed

**FIGURE 16**  
 PREPARED: BW  
 DATE: 21 June 2011  
 FILE: N97017\_KPoM\_NPWS Ded.cdr

TITLE  
**AREAS TO BE DEDICATED TO NPWS**



## Kings Forest (Stage 1) - Koala Plan of Management

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burns as well as any wildfires in these areas, and vegetation adjacent to these roads should be managed with this in mind.

Also within Kings Forest the bushfire risk to vegetation within the golf course area will be substantially addressed by the proposed distributor road through these precincts, but otherwise vegetation should be managed and other measures taken, where appropriate, to meet this risk in relation to Koala habitat values.

Adjacent to Kings Forest the particular area of concern in terms of bushfire threat is the Cudgen Nature Reserve, including the lands currently forming a part of Kings Forest to be added to it. The Cudgen Nature Reserve Fire Management Plan should be amended to include these additional areas. Furthermore, Koalas and Koala habitat should be particularly considered in a review of the Fire Management Plan in light of information provided by Phillips (2011) regarding fire and Koalas within the Tweed Coast strip.

### 9.6 Fencing

Koalas will be excluded from the development areas in Precincts 1 and 5 (the subject of the present Project Application) by appropriate fencing in conjunction with the required road underpasses/bridging and grids, in accordance with the findings of Biolink Ecological Consultants in its report on the Skyline Road Upgrade for Lismore City Council (Hopkins & Phillips 2009). Fencing to the northern boundary of Precinct 2 shall also be provided. Such fencing must be completed prior to the occupation of any buildings constructed within these precincts.

The specification of such fencing and its extent relevant to Precincts 1, 2 and 5 shall be in accordance with **FIGURES 17 & 18**.

A form of fencing that, whilst discouraging koalas from traversing it, enables them to do so in order to escape from bushfire, as suggested by Carrick (2009), is not considered to offer that advantage in reality. Koalas do not typically react to bushfire by attempting to flee, but tend to seek refuge from bushfires high in the canopy. However, the location and design of Koala fencing combined with the use of grids and traffic calming devices through the central Environmental Protection Zones (i.e. SEPP 14 wetlands), rather than constructing fences on both sides of the roadways, will allow for unimpeded Koala movements into other Environmental Protection zones, the golf course area and adjacent vegetated properties.

Fencing to exclude Koalas from the residential areas of Precincts 12 and 13 (that is, containing the golf course area, being Precinct 14), and additional required underpasses and/or grids, shall be the subject of a future Project Application or Development Application.

Residents should be made aware of the purpose of the exclusion fencing and grids, by (as a minimum) the fixing of relevant signage to such fencing at intervals of no more than 100m.



PRECINCT 1  
RURAL RETAIL DEVELOPMENT WORKS







PRECINCT 5 SUBDIVISION WORKS

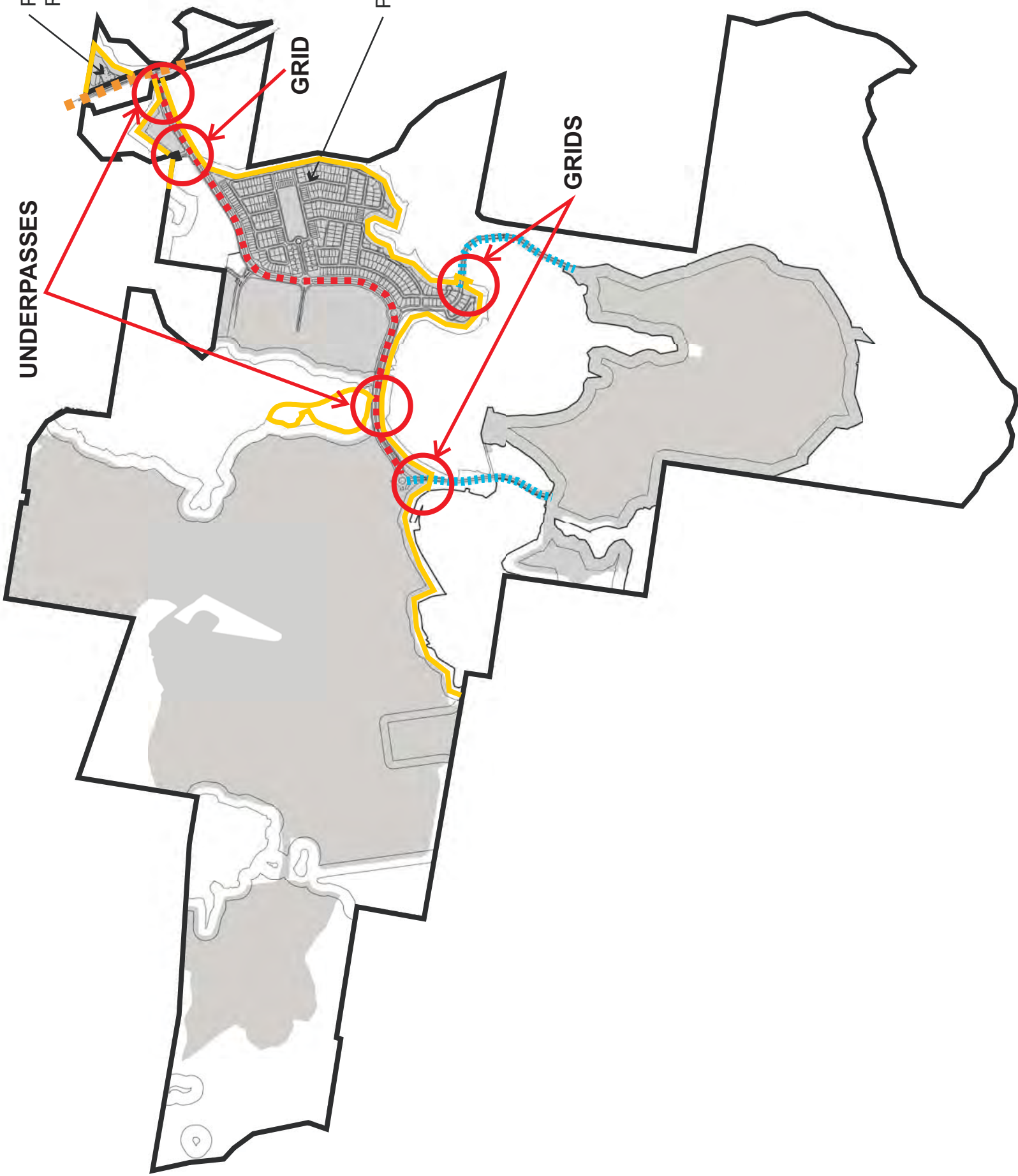
UNDERPASSES

GRID

GRIDS

**LEGEND**

-  Tweed Coast Road Intersection Works
-  Kings Forest Parkway through to Western Precincts
-  Roads through to Southern Precincts
-  Bulk Earthworks
-  Koala Exclusion Fencing
-  Kings Forest Boundary



SOURCE: JWA: MPS Architects  
(Ref: 2011-02-28.pdf)  
SCALE: 1 : 20 000 @ A3

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PROJECT  
Stage 1 - Koala Plan of Management  
Kings Forest Estate  
Melaleuca Drive, Durambah, NSW  
Shire of Tweed

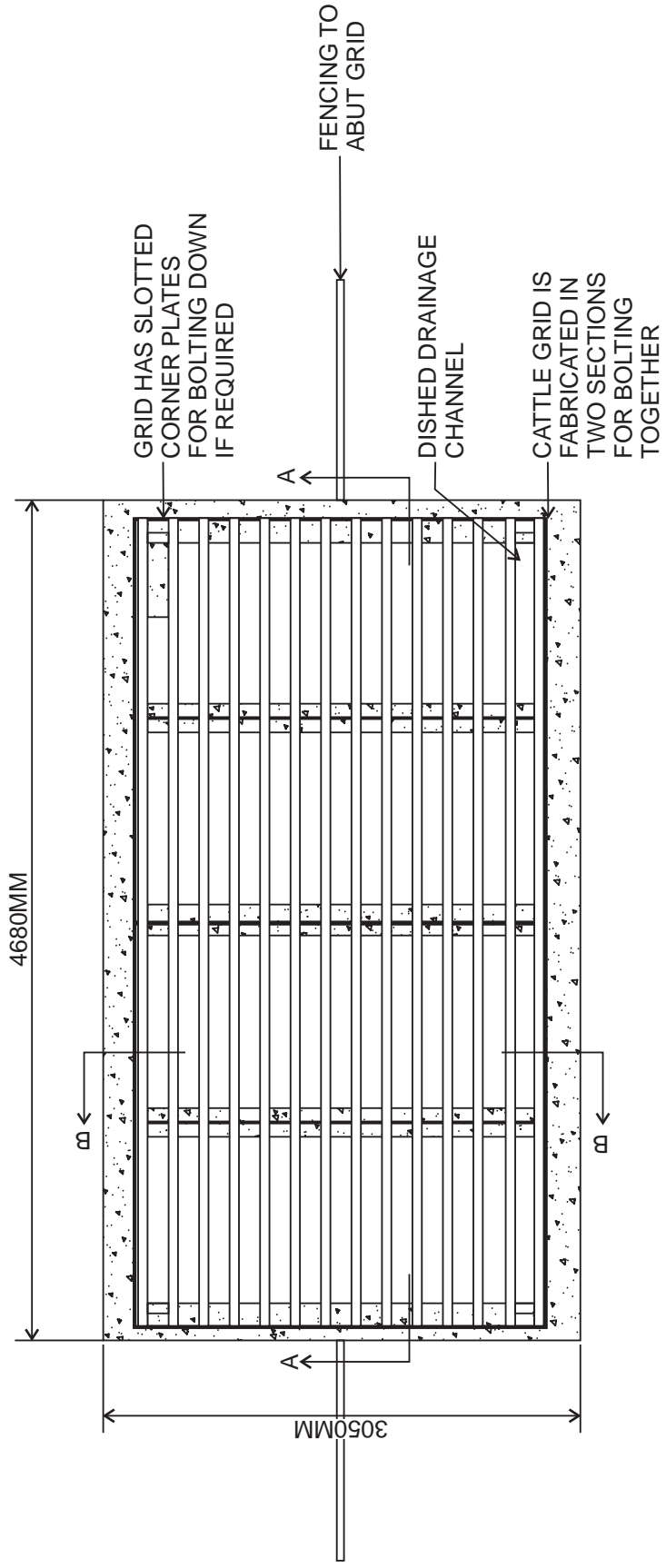
**FIGURE 17**

PREPARED: BW  
DATE: 24 June 2011  
FILE: N97017\_KPoM\_Fencing.cdr

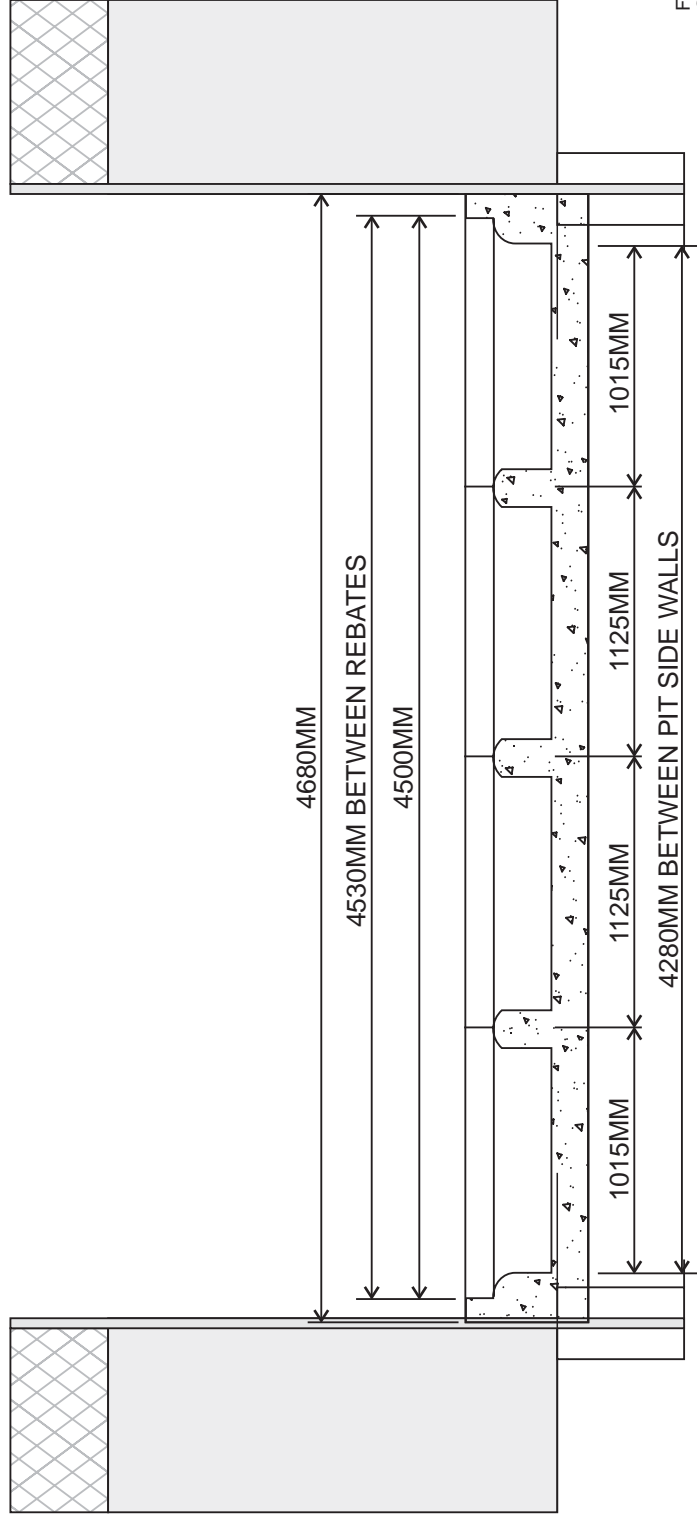
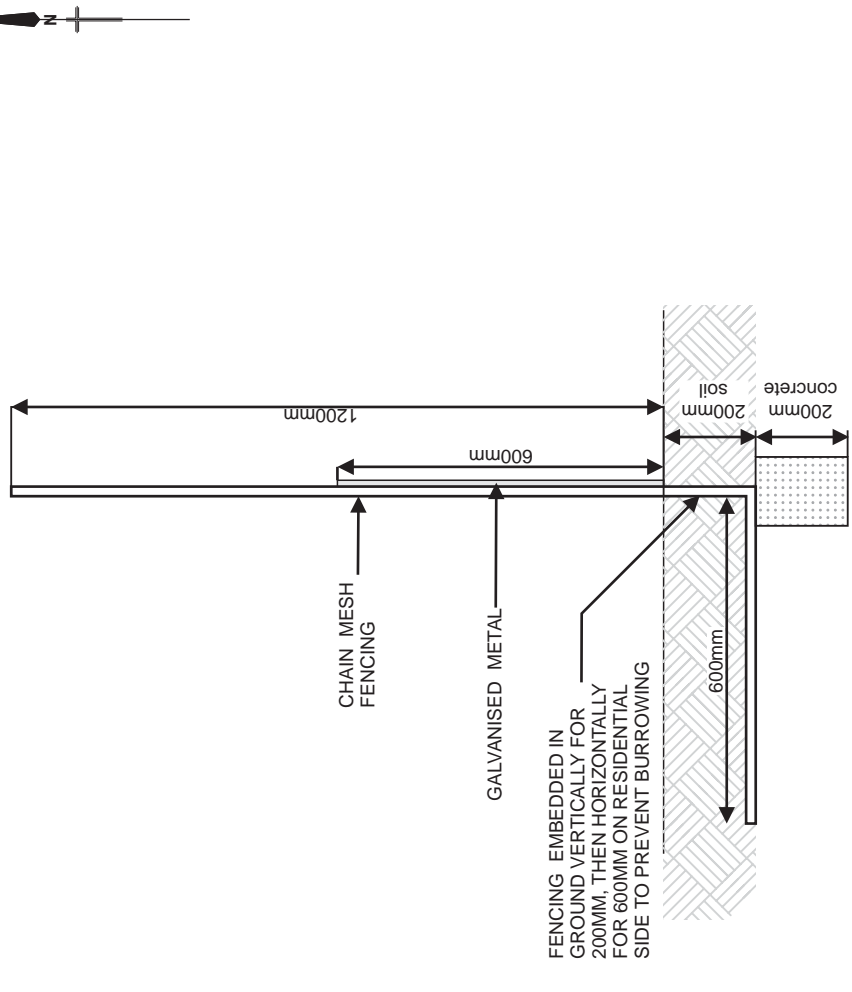
TITLE

**FENCING PLAN**

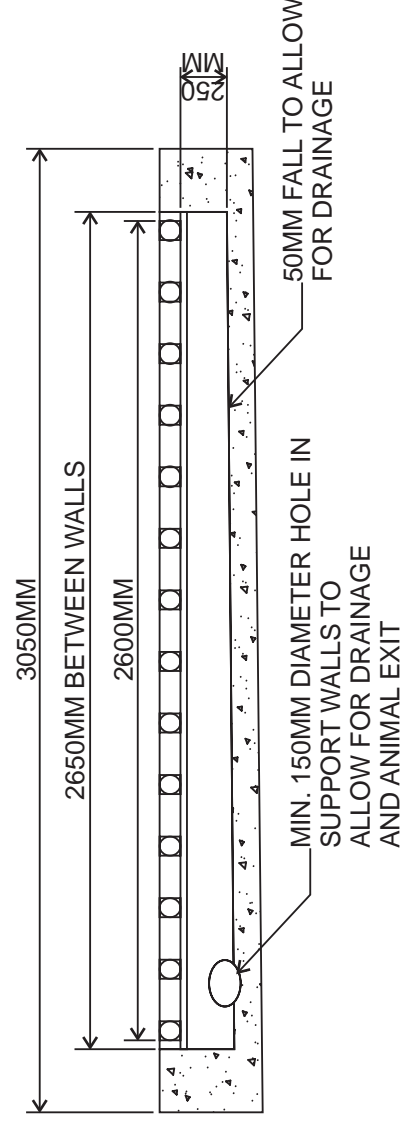
**INDICATIVE DESIGN FOR 40 TONNE CAPACITY CATTLE GRID**



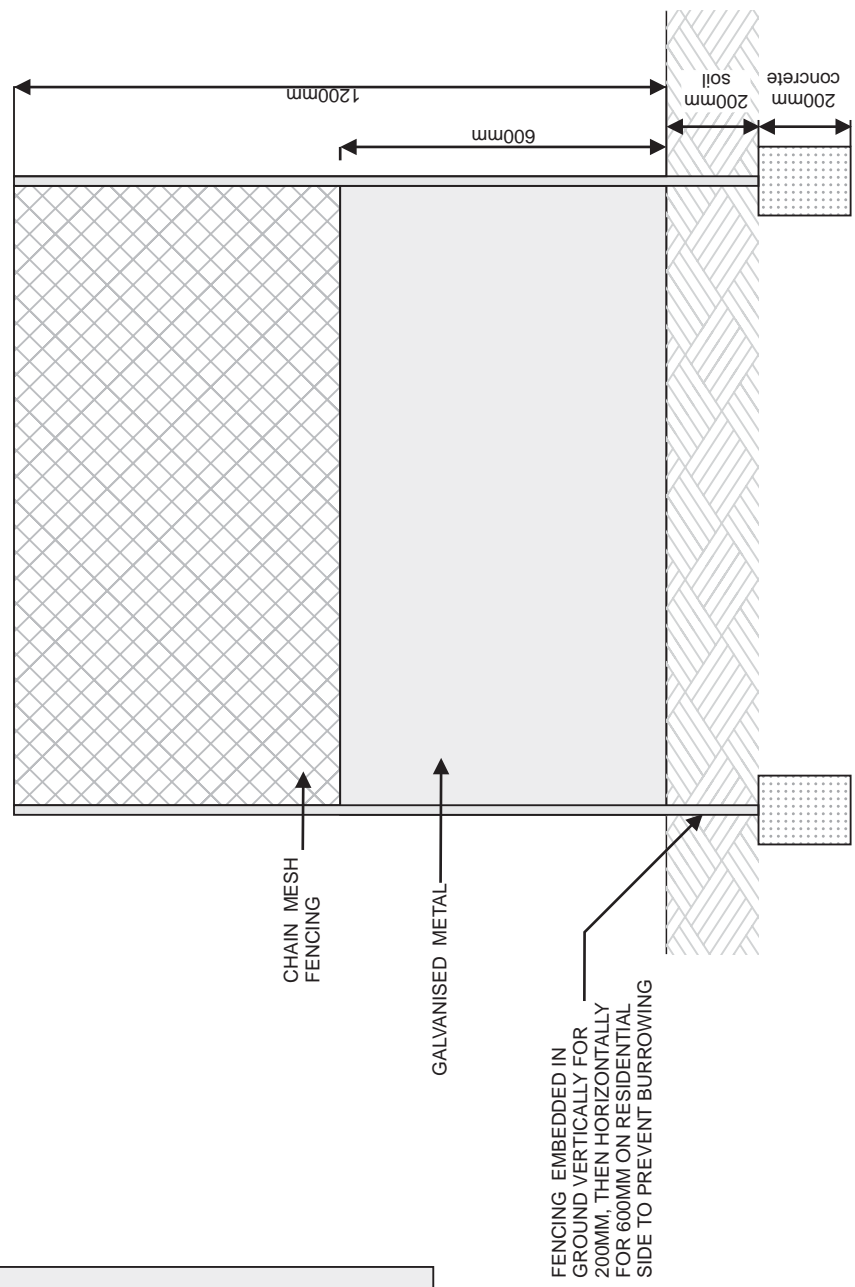
**INDICATIVE KOALA EXCLUSION FENCING**



**SECTION A-A**



**SECTION B-B**



SOURCE: JWA	CLIENT Project 28 Pty Ltd	TITLE <b>INDICATIVE KOALA EXCLUSION FENCING &amp; GRID DESIGN</b>
SCALE: Not to Scale	PROJECT Stage 1 - Koala Plan of Management Kings Forest Estate Melaleuca Drive, Duranbah, NSW Shire of Tweed	<b>FIGURE 18</b>
<b>JAMES WARREN &amp; ASSOCIATES PTY LIMITED</b> Environmental Consultants	PREPARED: BW DATE: 21 April 2011 FILE:IN97017_KPoM_Design.cdr	



## 9.7 Roads Intersecting Fauna Linkages

Roadways will be constructed through Koala habitat in a number of locations. These intersections have the potential to bring Koalas into contact with motor vehicles and also to allow Koalas to enter and roam through residential areas.

Grids in accordance with **FIGURE 18** shall be constructed in roadways at both ends of the habitat. Appropriate lighting (capped) and signage will be installed at each grid location.

Similarly, a temporary grid shall be provided to the Kings Forest Parkway where it extends from Precinct 5 through to the western precincts. This grid shall be maintained until such time as the permanent bridging over the watercourse there (which shall be designed also to facilitate fauna underpass) has been constructed.

An underpass to facilitate the movement of Koalas (and other fauna) shall be provided to the Kings Forest Parkway at the entrance of the estate in accordance with **FIGURE 19**.

Underpasses, bridging and grids shall be connected to exclusion fencing, and the new fencing connected to that along Tweed Coast Road, to effectively complete the enclosure of the defined Koala habitat area,

The proposed measures in each case shall be approved by a suitably qualified person prior to the detailed road/bridging designs being submitted to the relevant authority for approval.

## 9.8 Dogs

The Companion Animals Act was passed by New South Wales Parliament on 3 July 1998. The Act introduced major reforms for the keeping and control of Companion Animals (Dogs and Cats) and endeavoured to address the concerns of modern society. The Companion Animals Act replaced the provisions of the Dog Act 1966.

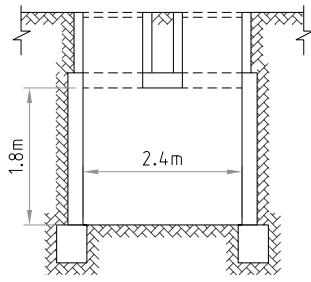
The Act was developed with the understanding that all sectors of the Community will benefit through incorporating an educational approach to Companion animal management and the utilisation of more proactive and enforceable laws.

Tweed Shire Council has a Companion Animals Management Plan reflecting the provisions of the Companion Animals Act.

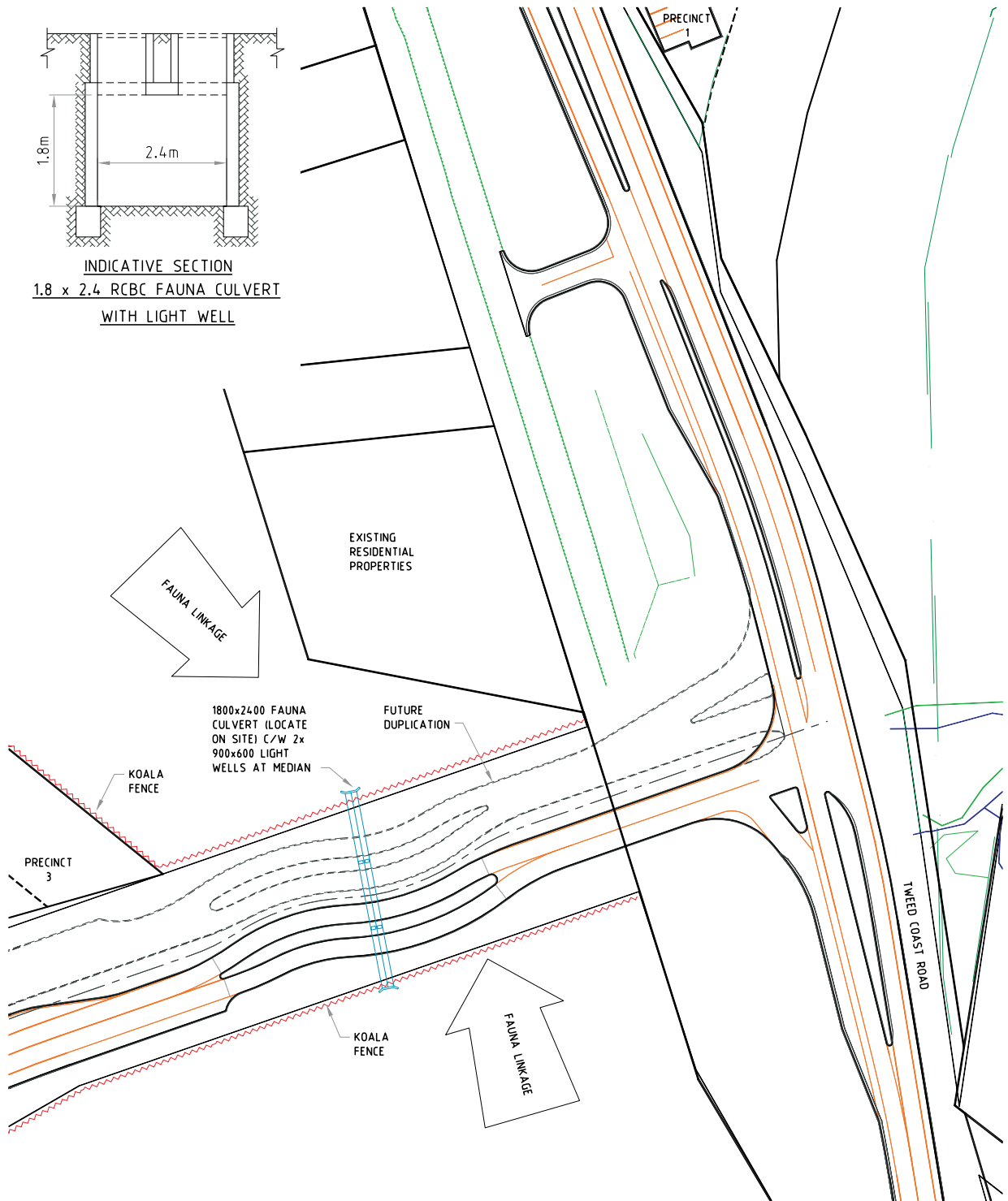
With the emphasis of this KPoM being on restricting Koalas to the identified area within the Environmental Protection zone (including the core Koala habitat areas), it is considered that, other than steps to increase community awareness, the reporting of observations and incidents and the monitoring of performance, no measures additional to those in force through the above regulations are necessary for the control of dogs in relation to the protection of Koalas.

It is not intended to provide any off-leash dog exercise area within Kings Forest specifically to service the needs of residents of Precinct 5. Such areas are provided by Council at South Kingscliff beach, South Fingal/Kingscliff beach, South Cabarita beach, Corowa Park and Turnock Park. The provision of an off-leash dog exercise area within the western parts of Kings Forest will be considered in future Project Applications/Development Applications in relation to residential subdivision of that part of the property.





INDICATIVE SECTION  
1.8 x 2.4 RCBC FAUNA CULVERT  
WITH LIGHT WELL



0 25m

SOURCE: Mortons Urban Solutions  
(Ref: 123-01\_SK\_022 FIGURE 4.pdf)

SCALE: 1 : 1250 @ A3

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PROJECT  
Stage 1 - Koala Plan of Management  
Kings Forest Estate  
Melaleuca Drive, Duranbah, NSW  
Shire of Tweed

**FIGURE 19**

PREPARED: BW  
DATE: 15 April 2011  
FILE: N97017\_KPoM\_Underpass.cdr

TITLE  
**INDICATIVE  
FAUNA UNDERPASS  
DESIGN**



## 9.9 Koala Observations and Incidents

### *9.9.1 Construction phase*

Any observations of Koalas (including any mortality if it was to occur on Kings Forest during or after development) must be reported in accordance with recommendations of the NSW Department of Environment and Climate Change.

During the construction phase of the development, the Construction Manager will be responsible for the reporting of all Koala observations and incidents. All Koala observations and incidents should be reported immediately to the appropriate site personnel, such as the Environmental Officer.

Where a Koala is located in the construction zone, the immediate threats to that animal are to be assessed by a suitably qualified person and intervention limited to instances where it is clear that there is an imminent and serious threat to that animal's welfare. Where threats are deemed to be low or manageable, the animal should be monitored until it moves to more suitable habitat.

Relocation, where considered necessary, must take primarily into account the potential for the welfare of the animal to be compromised by capture stress, and must only be undertaken by appropriately trained and licensed people. The Koala must be released as close as possible to the capture site, in an area considered safe for the animal.

Any injured animals should be immediately taken to the nearest appropriately qualified veterinary clinic for treatment.

Where a dead animal is located and the cause of death is not known, post-mortem examinations should be undertaken by an appropriately qualified person with practical knowledge of Koala anatomy and pathology.

Any observation or incident should result in an observation/incident report. The report should contain as a minimum, the date and location (grid references) of the animal will be recorded. Where appropriate, cause of death (observed), sex of animal, age (teeth wear or other evidence) and any other information such as presence of ear tags, general condition (evidence of disease, weight, etc.) should be collected. This information should be available for viewing on request by DECCW or TSC.

As part of the monitoring and reporting procedures of this KPoM, Koala location records will be provided to DECCW through the NSW Wildlife Atlas, and other information regarding individual animals will be compiled and reported to DECCW (North East Branch), the NSW Department of Planning and Tweed Shire Council.

### *9.9.2 Operational phase*

As part of the community education program (Section 9.11), the public will be encouraged to report any sightings of Koalas within residential areas to the appropriate person (i.e. Environmental Officer).

Where a Koala is located in the urban area of Kings Forest, or reported by a resident, the protocol will be the same as during the construction phase i.e. the immediate threats to



## Kings Forest (Stage 1) - Koala Plan of Management

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that animal are to be assessed by a suitably qualified person and intervention limited to instances where it is clear that there is an imminent and serious threat to that animal's welfare. Where threats are deemed to be low or manageable, the animal should be monitored until it moves to more suitable habitat.

Relocation, where considered necessary, will be subject to the same considerations given to the welfare of the animal as discussed for the construction phase above. Any relocation must be undertaken by appropriately trained and licensed people, and the Koala must be released as close as possible to the capture site, in an area considered safe for the animal.

As for the construction phase, in the event that a dead animal is located and the cause of death is not known, post-mortem examinations should be undertaken by an appropriately qualified person with practical knowledge of Koala anatomy and pathology.

Any observation or incident should result in an observation/incident report. The report should contain as a minimum, the data detailed for the construction phase above. This information should be available for viewing on request by DECCW or TSC.

As part of the monitoring and reporting procedures of this KPoM, Koala location records will be provided to DECCW through the NSW Wildlife Atlas, and other information regarding individual animals will be compiled and reported to DECCW (North East Branch), the NSW Department of Planning and Tweed Shire Council.

### 9.10 Swimming Pools

The approach in this KPoM of ensuring the effective separation of koalas from the development zone makes it unnecessary to impose construction standards in relation to koala management with respect to swimming pools.

### 9.11 Community Awareness

Prior to entering into any sales agreement with respect to the subdivided allotments within Precinct 5 an environmental awareness and extension program will be undertaken which will include, but not necessarily be limited to, the following:

An information package for purchasers of land at Kings Forest shall be commissioned by the Proponent. This shall be approved by a suitably qualified person and comprise, firstly, a brochure or booklet provided free of charge to all original purchasers of Kings Forest properties and made available through appropriate service outlets within the Kings Forest estate and, secondly, a web page containing the required information.

With respect to the protection of Koalas, the printed and web-based information will cover such matters as:

- Koala habitat areas in Tweed Shire and koala populations
- Koala behaviour
- The importance of protecting the koala population in the Kings Forest area
- Areas of the site in which Koalas are most likely to be encountered





## Kings Forest (Stage 1) - Koala Plan of Management

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- Threats to Koalas associated with residential development
- Protection of Koala habitat and habitat linkages
- Measures to avoid Koala deaths or injuries caused by motor vehicles
- Prohibition on the keeping of specified breeds of dogs and requirements for the keeping of others
- Swimming pool construction and fencing requirements
- Need to report *any* Koala sightings or incidents on or near the site and actions to be taken, with relevant telephone numbers and addresses
- Assistance that can be given in the protection of koalas generally
- The contact details of local organisations involved in the care of Koalas, of relevant State agencies such as DECCW and of the Council, and web addresses where further information on Koalas may be obtained.

Additionally,

- Signage pursuant to the objectives of this Plan will be provided in appropriate locations adjacent Kings Forest Parkway and within Precinct 5, and
- A residents association having as one of its aims the protection of the local Koala population will be established by the Proponent.



## 10 Opportunities to Increase Size or Improve Condition of Existing Core Habitat

### 10.1 Introduction

This section will discuss the opportunities for increasing Koala habitat throughout the area.

### 10.2 Opportunities to Improve Core Habitat

Although no core Koala will be removed, the Kings Forest development proposes a significant vegetation rehabilitation program, including planting Koala food trees. Existing Koala habitat will be improved and new potential core habitat areas will be created.

#### Calculating the number of Koala food trees to be planted

The number of Koala food trees to be planted has been calculated. In total, 49ha at the Kings Forest site has been identified as suitable for planting Koala food trees, comprised of 5.6ha within the proposed Golf course and 43.4ha within Environmental Protection zones and associated ecological buffers. No Koala food trees will be planted within the development footprint.

It is considered suitable for Koala food trees to be planted at a rate of one tree per 25m<sup>2</sup>. Therefore, approximately 17,000 Koala food trees will be planted.

#### Increase in Kings Forest Carrying Capacity

It is estimated that on the Tweed Coast, 0.17 to 2 Koalas can survive on 1 hectare of core Koala habitat (Phillips 2011). As discussed above, a total of 49ha of revegetation works including preferred Koala food trees will be completed at the Kings Forest site. Based on the above densities, the Kings Forest area could theoretically carry a further 8 to 98 Koalas in the long-term. To achieve even the low estimate would be a very positive outcome for the rehabilitation program at Kings Forest.

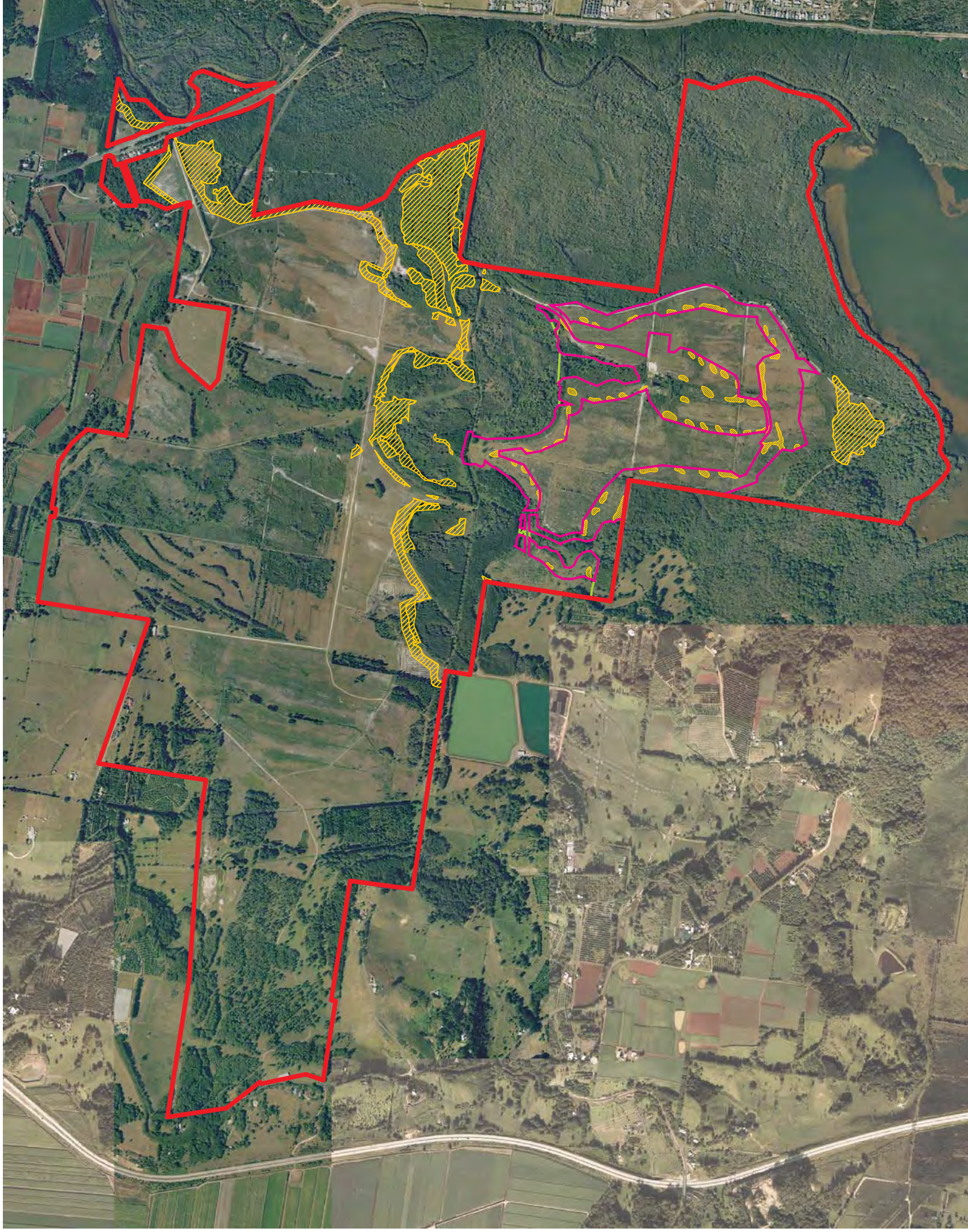
FIGURE 20 shows an indicative pattern for Koala food tree planting areas.

### 10.3 Improving Habitat Connectivity and Linkage Corridors

The maintenance of habitat patches of sufficient size to support existing populations and provide for future population expansion is fundamental to Koala population and habitat management within the Tweed Valley (Phillips 2011). Three recommendations are proposed by Phillips (2011) as follows:

1. Retention of potential koala habitat in-situ in the first instance, with a focus on occupied habitat, and adjoining areas of potential koala habitat. Protection of bushland containing large size-class Tallowwood and Grey Gum is also necessary to preserve the habitat resource on NFM soil landscapes.
2. Maintenance and creation of vegetated linkages between habitat patches and source populations.





**LEGEND**

- Koala food tree planting areas
- Golf Course Boundary
- Kings Forest Boundary



SOURCE: JWA Site Investigations;  
 Landpartners Figure 1 Koala Tree Planting Plan  
 SCALE: 1 : 20 000 @ A3  
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 Environmental Consultants

CLIENT  
 Project 28 Pty Ltd  
 PROJECT  
 Stage 1 - Koala Plan of Management  
 Kings Forest Estate  
 Melaleuca Drive, Duranbah, NSW  
 Shire of Tweed

**FIGURE 20**

PREPARED: BW  
 DATE: 04 July 2011  
 FILE:IN97017\_KPoM\_Koala trees.cdr

**KOALA TREE  
 PLANTING  
 PLAN**

TITLE





## Kings Forest (Stage 1) - Koala Plan of Management

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3. Strategic revegetation work with the aim of consolidation of existing habitat patches and habitat creation. Revegetation work should focus primarily on “gap-filling” in large habitat blocks within and adjacent to mapped source populations, edges of habitat blocks and within linkage areas. Indicative linkage areas for the focusing of habitat retention and creation are provided (**FIGURE 14**).

A primary goal of this KPoM is the maintenance of a high degree of connectivity to service the Koala population whose home ranges are principally located on Kings Forest, as well as those Koalas whose home ranges are located largely on adjacent areas of habitat (e.g. Cudgen Nature Reserve). Proposed fences to exclude Koalas from the residential areas of the site are located on the edges of habitat areas only. The use of grids and traffic calming devices through the central Environmental Protection Zones (i.e. SEPP 14 wetlands) rather than constructing fences on both sides of the roadways will allow for unimpeded Koala movements.

It has been noted that the KPoM that accompanied the Concept Plan application (Carrick 2009) proposed an additional east-west corridor in the western portion of the Kings Forest site and subsequently Condition B4 of the approved Concept Plan reflected this proposal. Condition B4 also required demonstration, prior to the determination of Stage 1, of the practicality or need for establishing a further 50 metre wide fauna corridor along the southern boundary of the western precincts of the site.

The east-west corridor proposed by Carrick (2009) is not considered an appropriate allocation of resources, in that the prospect of the long-established sugar cane fields to the west becoming revegetated so as to offer meaningful koala habitat is considered extremely remote. For the same reasons, there is not considered to be a need for an additional east-west movement linkage along the southern boundary of the western precincts as discussed in Condition B4. Given the established pattern of koala activity generally within lands to the east and south of the Kings Forest estate, there is no requirement to provide for additional movements to the west. Existing Core Koala habitat linkages on the Kings Forest site shown in **FIGURE 14** will be retained and embellished.

The east-west corridor proposed by Carrick (2009) nevertheless remains in the proposed concept plan and a decision on its ultimate development (and, if so, its revegetation) will be the subject of a future application for development in the relevant part of the site.

### 10.4 Koala Habitat Rehabilitation and Maintenance Targets

The requirements for the ecological maintenance and protection of the various elements of the Environment Protection Zone, especially including Koala habitat, must be implemented as set out in:

- Kings Forest Stage 1 Project Application: Precinct 1 & 5 Vegetation Management Plan (James Warren & Associates 2011a);
- Kings Forest Stage 1 Project Application: Precinct 2, 3, 4, 6, 7,-8, 9, 10, 11 Vegetation Management Plan (James Warren & Associates 2011b);
- Kings Forest Stage 1 Project Application: Precinct 12, 13 & 14 Vegetation Management Plan (James Warren & Associates 2011c);
- Kings Forest Stage I Project Application: Precinct 1 & 5 Threatened Species Management Plan (James Warren & Associates 2011d);



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- Kings Forest Stage 1 Project Application: Precinct 2, 3, 4, 6, 7, 8, 9, 10, 11 Threatened Species Management Plan (James Warren & Associates 2011e); and
- Kings Forest Stage 1 Project Application: Precinct 12, 13 & 14 Threatened Species Management Plan (James Warren & Associates 2011f).

In areas where pines are to be removed it is noted that the close proximity and extent of mature native trees are such that the structural attributes necessary to support Koalas will not require retention of non-native trees.

Revegetation for rehabilitation to include Koala habitat values of the areas identified in the above Vegetation management Plans shall generally commence within 180 days of commencement of any works contemplated by this Project Application and, in the golf course area, will commence as soon as the bulk earthworks there are completed.



## 11 Aim and Objectives of this KPoM

The aim of this KPoM is to protect the Koala population utilising the Kings Forest site and facilitate its continued viability.

The objectives to achieve this aim are:

- To ensure that the proposed development does not remove significant areas of habitat known or likely to be important for the local Koala population.
- To embellish the habitat values of the site.
- To ensure that the movement of Koalas is not impeded through the site or the locality.
- To ensure that both construction and operational phase activities associated with development do not significantly impact on the local Koala population.
- To ensure that Koala observations are reported and incidents properly managed.
- To promote awareness of Koala issues and the environment generally on the part of residents of Kings Forest.
- To provide for effective monitoring of performance in relation to the provisions of this KPoM.





## 12 Performance Criteria

The following table contains a list of the objectives of this KPoM and the performance criteria against which achievement of these objectives is to be measured.

**TABLE 2  
OBJECTIVES OF THE MANAGEMENT PLAN & CRITERIA FOR JUDGING SUCCESS**

Objectives	Recommendations	Criteria for judging success
<p>To ensure that the proposed development does not remove significant areas of habitat known, or likely to be important for the local Koala population.</p>	<ol style="list-style-type: none"> <li>1. All identified areas of Core Koala habitat should be retained.</li> <li>2. A large area which includes identified areas of "Core Koala habitat" contiguous with Cudgen Nature Reserve (CNR) should be transferred to public ownership.</li> </ol>	<ul style="list-style-type: none"> <li>• All identified core Koala habitat is retained.</li> <li>• The designated 178 ha of "Core Koala habitat" contiguous with Cudgen Nature Reserve (CNR) is transferred to public ownership (i.e. the Tweed Shire council or the New South Wales Parks and Wildlife Service (NPWS)).</li> </ul>
<p>To ensure that movement corridors for the local Koala population are maintained or improved.</p>	<ol style="list-style-type: none"> <li>3. Fauna underpasses should be constructed to facilitate connectivity of habitat and fauna movement. Underpasses should be at least 1.2m<sup>2</sup> and no longer than 40m. Where the underpass crosses beneath a dual carriage way or a road with a centre island, skylights should be incorporated.</li> <li>4. Free movement of Koalas through Kings Forest should be preserved and enhanced by existing fauna linkages and the provision of additional linkages.</li> </ol>	<ul style="list-style-type: none"> <li>• Monitoring shows that Koalas are utilising these underpasses.</li> <li>• Monitoring shows that Koalas are moving along existing and proposed fauna linkages.</li> </ul>



## Kings Forest (Stage 1) - Koala Plan of Management

Objectives	Recommendations	Criteria for Judging success
To protect individual Koalas from injury or other adverse impacts during the development phase.	<p>5. An experience fauna handler/ecologists should be on site to supervise all clearing activities regardless of whether the area is considered as Koala habitat or not.</p> <p>6. An education program should be developed and presented to all workers on the site, providing information on the potential presence of Koalas and the procedures to be followed if a Koala is encountered.</p> <p>7. Appropriate temporary signage should be placed around the site and on the margins of the environmental protection areas stating that Koala occur on the site.</p>	<ul style="list-style-type: none"> <li>• An experienced fauna handler/ecologists is present to supervise all clearing activities.</li> <li>• All workers on the site are made aware of the potential presence of Koalas and the procedures to be followed if a Koala is encountered.</li> <li>• Appropriate temporary signage is installed.</li> </ul>
To embellish, by way of planting preferred feed trees, the habitat value of the portions of the site, which will be retained and facilitate an increase in Koala numbers resulting from the improvement of habitat.	<p>8. Koala food trees should be planted in areas identified on <b>FIGURE 20</b>.</p>	<ul style="list-style-type: none"> <li>• Plantings are completed in designated areas. Plantings are maintained until established.</li> <li>• Survival of 95% of stems planted;</li> <li>• Establishment of a 70% native ground cover after 2-3 years;</li> <li>• Average percentage cover of 90% native ground cover at the 5th year;</li> <li>• Noxious weeds are to be eradicated and environmental weeds less than 1% of the area;</li> </ul>
To ensure that activities generated because of the proposed development (e.g. additional traffic, introduction of dogs) do not significantly impact on the local Koala population.	<p>9. Exclusion fences should be constructed to keep Koalas out of the residential areas in accordance with <b>FIGURES 17 &amp; 18</b>.</p> <p>10. Grids should be constructed to exclude Koalas from the residential areas in accordance with <b>FIGURES 17 &amp; 18</b>.</p> <p>11. Educational signage should be placed at frequent intervals the permanent Koala exclusion fencing. Signage should not only inform residents of the possible occurrence of Koalas within the Environmental Protection Zones, the purpose of the exclusion fencing around the their residential area and imperative directive that dogs are prohibited within the EPZ's.</p>	<ul style="list-style-type: none"> <li>• Exclusion fences have been constructed and no Koalas have been recorded in residential areas.</li> <li>• Grids have been installed and no Koalas have been recorded in residential areas.</li> <li>• Signage has been installed.</li> </ul>



## Kings Forest (Stage 1) - Koala Plan of Management

Objectives	Recommendations	Criteria for judging success
<p>To ensure there is no reduction in Koala numbers resulting from the development.</p>	<p>12. Any observations of Koalas (including any mortality if it was to occur on Kings Forest during or after development) must be reported in accordance with recommendations of the NSW Department of Environment and Climate Change.</p> <p>13. Annual Koala monitoring and report should be provided to the Department of Planning, DECCW, Tweed Shire Council and Industry and Investment Fisheries.</p>	<ul style="list-style-type: none"> <li>• Monitoring reports have been submitted to the NSW Department of Environment and Climate Change.</li> <li>• Annual Koala monitoring and report have been provided to the Department of Planning, DECCW, Tweed Shire Council and Industry and Investment Fisheries.</li> </ul>



## 13 Provisions for Continuing Monitoring, Review and Reporting

### 13.1 Introduction

This section provides guidelines for the monitoring, review and reporting of Koala management within Kings Forest.

### 13.2 Monitoring and reporting requirements

An annual Koala Monitoring Report will be provided. DGR 9.6 refers to B2 of the Concept Plan approval which (as modified by MOD 1, 22 December 2010) provides as follows:

#### **B2 Annual Flora and Fauna Monitoring Report**

*Within 12 months of this approval, or as otherwise determined by the Director-General, the Proponent shall prepare a draft outline of a Flora and Fauna Monitoring Report to the satisfaction of the Director-General. The aim of the report is to collate and synthesise all monitoring and reporting requirements contained in the documents listed in A3.*

*The draft outline of the Flora and Fauna Monitoring Report shall set out the proposed timeframe and duration for ongoing monitoring with reference to locations within Kings Forest, stages of development and the specific issues listed below.*

*The Flora and Fauna Monitoring Report shall be prepared by a suitably qualified person/s and include, but not limited to:*

- 1. Aims, objectives and methodology for monitoring and reporting;*
- 2. Baseline monitoring data focusing on existing populations of threatened species, including Wallum frog species and koalas;*
- 3. Performance criteria against which the effectiveness of the various separate management plans required as part of this approval dealing with koalas, threatened species, buffers, weeds, vegetation and feral animals can be measured. Relevant benchmark reference vegetation communities are to be nominated from within surrounding conservation estates;*
- 4. Actual performance against the above criteria;*
- 5. Any required corrective actions;*
- 6. Monitoring and reporting of fauna usage within the Environmental Projection zones, ecological buffers and the golf course;*
- 7. Adaptive management procedures to ensure that the various separate management plans remain relevant and effective;*
- 8. Monitoring and reporting of koala injury and mortality; and*
- 9. Specific monitoring to measure any impact of the development on the adjacent Cudgen Nature Reserve and adaptive management procedures to ensure impacts are minimised.*



## Kings Forest (Stage 1) - Koala Plan of Management

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*The Monitoring Reports are to be provided to the Department of Planning, DECCW, Tweed Shire Council and Industry and Investment - Fisheries.*

### 13.3 Baseline monitoring

With respect to Koala management the following are accordingly required:

- The proponent shall engage a suitably qualified person to prepare:
  - a baseline monitoring report focusing on existing populations of koalas, to the satisfaction of the Director-General, prior to construction commencing, and
  - a draft outline of an Annual Koala Monitoring Report (AKMR), to the satisfaction of the Director-General, prior to construction commencing as determined by the Director-General.

A “suitably qualified person” shall be one having a postgraduate qualification in the field of Koala Ecology or Biology and/or demonstrated experience and expertise in these fields and/or having published research in these fields in the peer reviewed scientific literature.

### 13.4 Annual Koala Monitoring

The AKMR shall be prepared on an annual basis, from the date of commencement of construction, for 5 years or as otherwise determined by the Director-General. A review of the need for its continuation thereafter will be conducted 5 years after the commencement of construction. The AKMR shall include, but not be limited to:

1. The aims, objectives and methodology for the report. The aims will include the establishment of basic ecological benchmarks for monitoring Koalas occupying Kings Forest and its surrounds. These parameters should include definition of Koala home range sizes, density, seasonal dietary patterns, longer term movement patterns, reproductive output, dispersal patterns of juveniles, immigration to the site, genetic structure of the population, parentage analysis, health profile and disease status, etc.;
2. Monitoring and reporting on the implementation of the requirements of this KPoM;
3. Performance criteria against which the effectiveness of the various separate management plans dealing with management of koalas and vegetation can be measured;
4. Monitoring and reporting of koala usage within Environmental Protection zones, ecological buffers and the golf course;
5. Adaptive management procedures to ensure that the separate management plans remain relevant and effective;
6. Monitoring and reporting of injuries or mortalities to koalas;
7. Specific monitoring to measure any impact of the development on the Koala habitat values of the adjacent Cudgen Nature Reserve, and adaptive management procedures to ensure any impacts are minimised.



## References

- AKF (undated) Australian Koala Foundation Located as  
<https://www.savethekoala.com/index.html> Accessed on 14 th April 2011.
- Carrick (2009) Kings Forest Koala Plan of Management. Prepared by Dr Frank N Carrick,  
JWA (2000) Species Impact Statement for Kings Forest
- DECC (2008) Approved Recovery Plan for the Koala (*Phascolarctos cinereus*). New South  
Wales Department of Environment and Climate Change.
- DERM (2009) Dogs and Koalas Fact Sheet. Department of Environment and Resource  
Management Plan.
- Eberhard, .I H. (1978) "Ecology of the Koala in Australia" In: The Ecology of Arboreal  
Folivores. Smithsonian Institution Press, pp 315-328.
- Faulks, J. (1990) The Ranging Behaviour of Koalas. Honours thesis, University of New  
England, Northern Rivers.
- Gall, B. C. (1981) "Management of the Tucki Tucki district Koala colonies." Paper  
presented at the Lone Pine Koala Symposium, 1981. (Unpublished, draft held by  
NSW NPWS).
- Hindell, M. A. et al.(1985) "Tree species selection by free-ranging Koala populations in  
Victoria" Aust.Wildl.Res. 12, 137-144.
- Hopkins, M. & Philips, S. (2009) Koala Monitoring - Final Report. Skyline Road Upgrade,  
Lismore 2011. Biolink Pty Ltd, Uki, NSW
- JWA (2000) Species Impact Statement for the Proposed Kings Forest Development. James  
Warren and Associates. A report to Narui Gold Coast.
- JWA (a) (2011) Kings Forest Stage 1 Project Application: Precinct 1 & 5 Vegetation  
Management Plan (James Warren & Associates 2011)
- JWA (b) (2011) Kings Forest Stage 1 Project Application: Precinct 2, 3, 4, 6, 7, -8, 9, 10, 11  
Vegetation Management Plan (James Warren & Associates 2011)
- JWA (c) (2011) Kings Forest Stage 1 Project Application: Precinct 12, 13 & 14 Vegetation  
Management Plan (James Warren & Associates 2011).
- JWA (d) (2011) Kings Forest Stage 1 Project Application: Precinct 1 & 5 Threatened  
Species Management Plan (James Warren & Associates 2011)
- JWA (e) (2011) Kings Forest Stage 1 Project Application: Precinct 2, 3, 4, 6, 7, -8, 9, 10, 11  
Threatened Species Management Plan (James Warren & Associates 2011)
- JWA (f) (2011) Kings Forest Stage 1 Project Application: Precinct 12, 13 & 14 Threatened  
Species Management Plan (James Warren & Associates 2011).
- Kingston, M. B., Turnbull J. W. and Hall P. W. (2004) Tweed Vegetation Management  
Strategy. Volumes 1, 2 & 3 - Strategy Plan. Ecograph. Prepared for Tweed Shire  
Council.
- Moon, C. (1988) "Koala Corridors - A Case Study from Lismore", in the Koala Summit  
Managing Koalas in NSW. National Parks and Wildlife Service.





## Kings Forest (Stage 1) - Koala Plan of Management

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- Philips, S. (2003) Management of Koala issues in conjunction with the proposed upgrading of Skyline Road. Report prepared for Lismore City Council. Biolink Pty Ltd, Uki, NSW
- Philips, S. (2004) Draft Koala Plan of Management, Kings Forest. Biolink Pty Ltd, Uki, NSW
- Philips, S. (2011) Tweed Coast Koala Habitat Study. Report to tweed Shire Council. January Parks and Wildlife Service.
- Phillips, W. (1990) "Koalas The Little Australian We'd All Hate to Lose" Australian National TSC (2010). Companion Animals Management Plan Version 1.0 Tweed Shire council. Adopted by the Council at its meeting on 16th March 2010 minute No: 152.
- Reed, P.C. et al. (1988) "A 1967-87 Survey of the Koala, *Phascolarctos cinereus* in New South Wales and an Ecological Interpretation of its Distribution" A Paper presented to the Third Symposium on the Biology of the Koala, Melbourne February 1988.
- Robinson and Russell (1978) "The Koala in South Australia" In: the Koala - Proceedings of the Taronga Symposium.
- Sainty, G. Verification of High Conservation Value Lands within Kings Forest, Tweed Shire. July 2006. Report prepared by Geoff Sainty & Associates for Department of Planning.
- Smith, M.T.A. (1979) "Notes on reproduction and growth in the Koala" Aust.Wildl.Res 6, 5-12.
- Taylor, B. and Goldingay, R 2003 Cutting the carnage: wildlife usage of road culverts in north-eastern New South Wales. Wildlife Research 30, 529-537.
- TSC (2010). Companion Animals Management Plan Version 1.0 Tweed Shire council. Adopted by the Council at its meeting on 16th March 2010 minute No: 152.



## APPENDIX 1 - DGEARs Compliance Table

<i>DGEAR</i>	<i>Compliance in Report</i>
<p>9.5 - Provide an update to the Koala Plan of Management (KPoM) for the site. The update should confirm that the measures identified and proposed in the KPoM to offset the impact of the development on existing and future Koala populations are adequate.</p>	<p><i>This current report</i></p>
<p>9.6 - The KPoM should take into account:</p>	
<ul style="list-style-type: none"> <li>• contemporary data/literature on koala management;</li> </ul>	<p><i>Through out the report reference has been made to current literature e.g. Phillips 2011 - the most up-to-date study of Koalas on the Tweed Coast.</i></p>
<ul style="list-style-type: none"> <li>• the results of the monitoring of management measures operating as part any approved stage/s, in accordance with B2 of the concept plan approval;</li> </ul>	<p><i>n/a</i></p>
<ul style="list-style-type: none"> <li>• the role of additional koala habitat created in protecting koala numbers, and</li> <li>• the provision of any additional koala management measures, specifically those relating to dogs.</li> </ul>	<p><i>SECTION 10</i></p> <p><i>SECTION 9</i></p>
<p>9.7 - The KPoM update should include, but not be limited to:</p>	
<ul style="list-style-type: none"> <li>• the identification of dog breeds known to present a significant threat to koalas and measures to effectively mitigate the threat posed to koalas by dogs.</li> <li>• Such measures may include: <ul style="list-style-type: none"> <li>○ prohibitions/restrictions on particular breeds;</li> <li>○ limitations on the number of dogs per property; and</li> <li>○ specifications on the way dogs are to be housed from dusk to dawn.</li> </ul> </li> </ul>	<p><i>SECTION 8.6</i></p>
<p>9.8 - The KPoM update must provide stage specific detail on the following:</p>	



Kings Forest (Stage 1) - Koala Plan of Management

<i>DGEAR</i>	<i>Compliance in Report</i>
<ul style="list-style-type: none"> <li>• <i>revegetation and rehabilitation measures;</i></li> </ul>	<i>SECTION 10</i>
<ul style="list-style-type: none"> <li>• <i>measures to ensure that no identified koala food trees are removed within adjacent ecological buffers or identified core koala habitat within adjacent Environmental Protection zoned land;</i></li> </ul>	<i>SECTION 10</i>
<ul style="list-style-type: none"> <li>• <i>all obligations regarding the keeping of dogs, including:</i></li> </ul>	<i>SECTION 9.8</i>
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>○ <i>regulatory and enforcement measures,</i></li> </ul> </li> </ul>	<i>SECTION 9.8</i>
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>○ <i>specific road design,</i></li> </ul> </li> </ul>	<i>SECTION 9.7</i>
<ul style="list-style-type: none"> <li> <ul style="list-style-type: none"> <li>○ <i>lighting and signage requirements aimed at protecting koalas and maintaining their safe passage between habitat areas.</i></li> </ul> </li> </ul>	<i>SECTION 9.7</i>
<ul style="list-style-type: none"> <li>• <i>These requirements shall include fencing to road verges, fauna underpasses and like measures.</i></li> </ul>	<i>SECTIONS 9.6 &amp; 9.7</i>
<i>9.9 - The KPoM update must detail:</i>	
<ul style="list-style-type: none"> <li>• <i>procedures to be adopted in the event that koalas are sighted within construction zones or the urban areas;</i></li> </ul>	<i>SECTIONS 9.2 &amp; 9.9</i>
<ul style="list-style-type: none"> <li>• <i>specifications for any off leash dog exercise areas to ensure appropriate separation from koala habitat;</i></li> </ul>	<i>SECTION 9.8</i>
<ul style="list-style-type: none"> <li>• <i>the detail of the location and construction specification of dog exclusion fencing to any adjacent Environmental Protection zoned land and the timing of its completion;</i></li> </ul>	<i>SECTION 9.6</i>
<ul style="list-style-type: none"> <li>• <i>the detail, content and distribution of koala education and awareness measures aimed in particular at contractors and staff engaged in construction and at future residents; and</i></li> </ul>	<i>SECTIONS 9.2 &amp; 9.11</i>



Kings Forest (Stage 1) - Koala Plan of Management

<i>DGEAR</i>	<i>Compliance in Report</i>
<ul style="list-style-type: none"><li><i>a protocol for the reporting of any deaths or injuries to any koala within Kings Forest including collection and recording procedures and where necessary post-mortem procedures or laboratory tests to identify the cause of death to an koala.</i></li></ul>	<p><i>SECTION 9.9</i></p>



## APPENDIX 2 - James Warren CV



# **Curriculum Vitae**

**JAMES V WARREN**

**Managing Director**

**Principal Environmental Scientist**





**JAMES V WARREN**  
Principal Environmental Scientist

### **AREAS OF EXPERTISE**

Flora and Fauna Studies  
Environmental Management  
Estuarine Management - Forest Ecology  
Wetland Management  
Koala Ecology  
Radio Tracking Native Fauna

### **EDUCATION**

Bachelor of Science Degree (B.Sc.), University of New England, Armidale  
  
Master of Applied Science Degree (Thesis) (M.AppSc), University of Technology, Sydney. The Thesis studied the status and productivity of the Wetland and Riparian Ecosystems in the Parramatta River Basin.

### **PROFESSIONAL HISTORY**

James Warren & Associates (November 1997 - present)  
Principal Environmental Scientist, Managing Director

Woodward-Clyde (1995-1997)  
Principal Environmental Scientist

Biological and Environmental Consultancy (1987-1995)  
Biological and Environmental Consultant

Australian Koala Foundation (1993)  
Manager Environmental Division

Newcrest Mining (1990-1992)  
Senior Environmental Scientist (Aust. Eastern Division)

Planners North (1987-1989)  
Environmental Biologist

Secondary School Teacher (1976-1987)  
- Sydney, Lismore and Murwillumbah



### **PROFESSIONAL MEMBERSHIPS**

Member of the Environmental Institute of Australia (MEIA)

Member of the Australian Institute of Biology (MAIB)

Member of the Coast and Wetlands Society (MCAWS)

### **REPRESENTATIVE EXPERTISE**

James Warren is the Principal Environmental Consultant for James Warren & Associates. He holds a Bachelor of Science Degree and a Master of Applied Sciences. James has specialist expertise in preparing Species Impact Statements (SIS's) and Flora (Vegetation) and Fauna Management plans, government liaison, soil studies and local environmental studies involving flora and fauna surveys of wetlands, heaths, rainforests and wet sclerophyll forest ecosystems. In addition to this he has, in the past, been responsible for the management of the GIS Koala habitat mapping project for the east coast of Australia, for initiating and managing the AKF Wildlife Consultancy and for the environmental management of the east coast operations of the Newcrest Mining Group.

### **LAND AND ENVIRONMENT COURT, NEW SOUTH WALES**

Completion of expert reports and appearance as an expert witness in the New South Wales Land and Environment Court.

- Reysson Pty Ltd at Tweed Shire Council - Land and Environment Court of NSW No 40433 of 2007 - Ecological Assessment Lot 2 DP 1060215 and Lot 4 DP 228424 Soorley Street, South Tweed Heads (2007)
- Beach Court Pty Limited at Roads and Traffic Authority - Land and Environment Court of NSW No 31243 of 2005 - Ecological Assessment Lots 101 and 102 in DP 1080766 Macauley's Headland, Coffs Harbour
- Shannon Pacific Pty Limited at Minister for Planning - Land and Environment Court of NSW Proceedings No 11133 of 2006. Ecological Assessment Lot 4 in DP 1022342 New Entrance Road, South West Rocks
- Scotts Head Lifestyle Homes Limited and Nambucca Shire Council at Cameron - Land and Environment Court of NSW Proceedings No 40085 of



1999 - Ecological Assessment Lot 3 DP 710419, South Pacific Drive, Scotts Head

- Pittwater Council ats Australian Super Developments Pty Ltd - Land and Environment Court of NSW Proceedings No 10431 of 1981. Ecological Assessment 79 Cabbage Tree Road, Bayview (2004)
- Bonville International Golf and Country Club, Bonville. Transgrid ats Ironhill Pty Ltd and Ironhill Management Pty Ltd in the NSW Land and Environment Court. Ecological Assessment (1998)
- SAE Properties ats Byron Shire Council. Flora and Fauna Assessment of Lot 282 in DP 1018663, Bottlebrush Crescent, Suffolk Park (2002)
- Hickey -ats- Coffs Harbour City Council, Land and Environment Court, Statement of evidence Proceedings No. 50120 of 2003
- Hymix Australia Pty Limited ats Council of the City of Lake Macquarie. An Ecological Assessment of land at Belmont North (2001)
- J. Vaughan ats Byron Shire Council. Proposed residential flat buildings, tree removal and Strata subdivision - Cavanbah Street, Byron Bay (2002)
- J. Bashforth Pty Ltd -ats- Byron Shire Council in the Land and Environment Court. Flora and Fauna assessment of a site at Orchid Place, Mullumbimby (2000)
- Ardel Pty Ltd -ats- Warringah Council in the Land and Environment Court. An assessment of botanical issues.
- Ray Group Pty Ltd -ats- Byron Shire Council in the Land and Environment Court Appeal No. 10746 of 1995. Fauna Impact Statement, Bushfire Management Plan and Supplementary Report.
- Greenfields Mountain Pty Ltd -ats- Byron Shire Council in the Land and Environment Court of New South Wales Appeal No. 10409 of 1996. Flora and Fauna Assessment.
- Ballina Shire Council -ats- Ballina Environment Society in the Land and Environment Court
- Robert Burness & Anne Maree Burness -ats- Tweed Shire Council in the Land and Environment Court New South Wales Appeal No. 10431 of 1997. Flora and Fauna Assessment for Proposed Subdivision.
- Torquil Cameron -ats- Nambucca Shire Council in the Land and Environment Court of New South Wales Appeal No. 40036 of 1997. Flora and Fauna Assessment, Scotts Head Lifestyle Homes, Scotts Head.



- Newman Quarrying Pty Ltd -ats- Maclean Shire Council in the Land and Environment Court of New South Wales Appeal No. 10220 & 10377 of 1998. Flora and Fauna Assessment.
- Jackybulbin Progress Association Inc. - Land and Environment Court No. 10274 & 10373 of 1998
- M.W. Robson & N. Newman & Newmans Quarrying Pty Ltd -ats- Department of Land & Water Conservation in the Land and Environment Court of New South Wales Appeal No. 50043/46 of 1998
- Byron Shire Council -ats- Ian McKay Pty Ltd in the Land and Environment Court of New South Wales Appeal No. 10721 of 1998. Threatened Species Assessment, review of Tree Impact Assessment.

<p style="text-align: center;"><b>PLANNING COURT, QUEENSLAND AND THE PLANNING AND ENVIRONMENT COURT, QUEENSLAND</b></p>
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Completion of expert reports and appearance as an expert witness in the Queensland Planning Court and the Queensland Planning & Environment Court.

- Brisbane City Council v Sheree McMonigle, Planning and Environment Appeal No 528 of 2009, 3rd April 2009 - Lots 212-214 RP34595, Frederick Street, Northgate
- Justin Simon Barnett & Beverly Dawn Barnett -v- Brisbane City Council, Planning and Environment Court Appeal No. BD 48 of 2008, 29th January 2008 - Lot 3 RP84558, 12 Lucan Avenue, Aspley
- Dr Brian and Mrs Kamalini Senewiratne - Resumption of Land by Brisbane City Council for "Environmental Purposes", 9th October 2008 - Lot 2 RP49873, 292 Pine Mountain Road, Carina Heights
- Arabesque Pty Ltd v Mackay Regional Council and Others, Planning and Environment Court Appeal No. 3308 of 2008, 3rd April 2009 - Lot 4 RP817122, Hodges Road, Shoal Point
- Trykris Pty Ltd -v- Logan City Council in the Planning and Environment Court, Queensland - Appeal 1 BD2825 of 2007 and Appeal 2 BD80 of 2008, 9th October 2007 - Lot 2 RP 1941632, 36-42 Kimberley Drive, Shailer Park and Lot 2 SP107699, 63-81 Kimberley Drive, Shailer Park
- Owl Projects Pty Ltd & Ors -v- Gold Coast City Council in the Planning and Environment Court, Queensland - Court Appeal Nos. 2178, 2179, 2180 and



2181 of 2007, 17<sup>th</sup> August 2007 - Lot 101 & 102 SP179081, 338 Tallebudgera Connection Road and 169 Trees Road, Tallebudgera

- David James Smith and Katrina Lee Sandlant -ats- Caboolture Shire Council in the Planning and Environment Court, Queensland - Appeal No. 2368 of 2007, 26<sup>th</sup> October 2007 - Lot 4 on RP96335, Clark Road, Morayfield
- Bakrnchev Enterprises Pty Ltd -v- Maroochy Shire Council & Ors in the Planning and Environment Court, Queensland - Appeal No. 44 of 2006, 4<sup>th</sup> December 2008 - Lot 7 RP 233846, 115-123 Stringybark Road, Buderim
- Homeprop Pty Ltd and Zianola Pty Ltd -v- Brisbane City Council & Ors in the Planning and Environment Court, Queensland - Appeal No. BD1970 of 2005, 15<sup>th</sup> November 2007 - Lots 9 & 10 RP95332, 11 & 13 Kirkdale Road, Chapel Hill
- Fitzgerald & JLF Corporation P/L v Gold Coast City Council & Ors, Planning and Environment Court Appeal No. 457 of 2006, 3<sup>rd</sup> September 2007 - Lots 1 and 2 on SP107404 and Lot 3 on RP 912935, 114 - 120 Nerang Broadbeach Road, Nerang
- Titanium Enterprises -v- Caloundra City Council & Environmental Protection Agency, Planning and Environment Court Appeal (Maroochydore) No. D423 - 2005, 10<sup>th</sup> October 2006 - Lot 65 SP166661, Mahogany Drive, Caloundra
- CA Hawkins Surveys v Caboolture Shire Council, Planning and Environment Court Appeal No. 4648 of 2004, 22<sup>nd</sup> November 2005 - Lots 7-10 RP87137, Main Street, Narangba
- Noosa Chamber of Commerce & Industry Inc. & Ors v Noosa Shire Council & Ors, Planning and Environment Court Appeal Nos. 48 & 49 of 2003, 12<sup>th</sup> May 2004 - Lot 2 SP110885, Noosa Shire Business Centre, Eenie Creek Road, Noosaville
- Collin Park Pty Ltd v Redland Shire Council and Anor, Planning and Environment Court Appeal No. BD4007 of 2003, 15<sup>th</sup> June 2004 - Lot 14 RP113406, 75-79 Starkey Street, Wellington Point
- Friends of Springbrook Alliance Incorporated & Ors -v- Gold Coast City Council & Anor, Planning and Environment Court (Southport) Appeals Nos. 6, 7 & 8 of 2003, 17<sup>th</sup> April 2003 - Ecological Assessment of Lot 1 RP56663, 418 Lyrebird Ridge Road, Springbrook
- GECKO -v- Gold Coast City Council & Lyrebird Ridge Café and Gallery, Planning & Environment Court (Southport) Appeal No. 376 and 377 of 2003 - Lot 3 RP160167, 309 Lyrebird Ridge Road, Springbrook



- Burcher and Keilar Fox and McGhie P/L -v- Ipswich City Council & Anor, Planning and Environment Court Appeal No. 3764 of 1999, 1<sup>st</sup> November 2001 - Ecological Assessment of Lots 1 & 2 RP816911 and Lot 161 S31880, Mt Crosby, Brisbane
- Forrester Residential Developments P/L v Maroochy Shire Council & Anor, Planning and Environment Court Appeal No. 3649 of 2001, 7<sup>th</sup> May 2002 - Ecological Assessment of Peregian Springs development site being part of Lot 5002 SP133168 and Lots 2 & 3 SP125259, Peregian Springs
- Concept Five Architects & Welwyn Nominees Pty Ltd as Trustee for the Perrin Family Investment Trust v Brisbane City Council & Ors, Planning Court of Queensland Appeal No. 1397 of 2000, 6<sup>th</sup> November 2002 - Ecological assessment of Lot 2 RP115166, 194 Mayfield Road, Tarragindi
- Leighton Properties (Brisbane) Pty Ltd -v- Noosa Shire Council & Ors, Planning and Environment Court Appeal No. 3651 of 2000, 21<sup>st</sup> June 2001 - Detailed Assessment of Flora issues on Lot 1 RP136508 and Lots 1 & 2 GTP103170, Bayview Road, Noosa Heads
- Histpark Pty Ltd & Anor v Maroochy Shire Council, Planning and Environment Court Appeal No. 0018 of 2000, 20<sup>th</sup> September 2001. Assessment of Ecological issues - Twin Lakes
- Brisbane City Council -ats- Tsung & Gold Coast Textiles Pty Ltd, Planning Court of Queensland, 26<sup>th</sup> November 1999- Ecological assessment and Specialist Bird Report in relation to Lots 1 & 2 RP107138 within Karawatha State Forest, Karawatha
- Allied Estates Pty Ltd v Noosa Shire Council & Anor, Planning and Environment Court P&E Appeal No. 3235 of 1998, 22<sup>nd</sup> October 1999. An Assessment of Issues relating to Significant Amphibians - Proposed Residential Development on Lots 7 & 9 RP80412, 167 M3793, Lot 1 RP32787 and Lot 1 RP96489, Beckmans Road, Tewantin
- Bayview Country Club Pty Ltd v Redland Shire Council, Planning and Environment Court Appeal No. 663 of 1997, 16<sup>th</sup> September 1997 - Detailed Flora and Fauna Assessment of the entire Bayview Estate at Mount Cotton. Included a detailed Koala assessment
- Brencorp Properties Pty Ltd & Anor v Pine Rivers Council & Ors, Planning and Environment Court Appeal No. 0295 of 1995, 12<sup>th</sup> July 1996. Detailed Flora and Fauna Assessment for a proposed residential subdivision





## FLORA AND FAUNA STUDIES

Completion of numerous (over 500) reports including Local Environmental Studies (LES) for various local governments, state government agencies and landowners. These assessments and reports variously involved mapping of site vegetation and the completion of flora and fauna surveys of wetlands, heaths, rainforest and wet sclerophyll forest ecosystems. Examples of studies include:

### NEW SOUTH WALES

- Constraints Analysis - Lot 401 DP 103506, Henry Lawson Drive, Terranora
- Completion of Constraints Analysis/Flora and Fauna Assessment - Belongil Fields, Byron Bay
- Vegetation Assessment, Wetland Rehabilitation Plan and Habitat Rehabilitation Plan - Known as Area E, Terranora
- Ecological Constraints Assessment - Lot 490 DP47021, Casuarina Way South Kingscliff
- Vegetation Rehabilitation Plan - Lot 1 DP1074242 Riveroaks Estate, Pacific Highway Ballina
- Flora and Fauna investigations - proposed church retirement complex and child care facility, Pacific Highway, Coffs Harbour
- Targeted Yellow-bellied glider Assessment - Pacific Highway, Bellwood
- Flora and Fauna Assessment for proposed subdivision of lot 115 DP1057175 Pacific Highway, Bellwood
- Flora and Fauna Assessment - Ozone Street - Chinderah for BP Australia
- Flora and Fauna Assessment for proposed expansion of piggery - Lot 117 DP 751062 Jacksons Flat Road, Tabulum
- Flora and Fauna Assessment - Lots 109 and 110 in DP 723018 (543.5 ha) - 186 Welsh Road - Second Chance Facility
- Flora and Fauna Assessment for rezoning - Lot 21 in DP 1070182, Hearn's Lake
- Detailed Flora and Fauna Assessment for residential subdivision at Red Rock Road, Corindi
- Review of Flora and Fauna - Lot 197 & 206 DP 754440, 244 Sandridge Road, Mitchell's Island - Manning Point



- Completion of Flora and Fauna Assessment of Lots 6 & 7 DP252223 Pacific Highway, Moonee Beach Road, Moonee
- Completion of Flora and Fauna Assessment at 38 McAllisters Road, Bilambil Heights
- Completion of Flora and Fauna Assessment at Waterview Heights, Grafton
- Barr Project Management (representing Narui Gold Coast Pty Ltd) to complete a Species Impact Statement (SIS) on land known as "Kings Forest"
- Completion of Species Impact Statement of Lot 2 DP 777905, Crescent Street, Chinderah
- Completion of Flora and Fauna assessment, Lot 3 DP 710419 South Pacific Drive, Scotts Head for Scotts Head Lifestyle Homes
- Completion of Species Impact Statement Lot 3 DP 710419 South Pacific Drive, Scotts Head for Scotts Head Lifestyle Homes Limited
- Completion of a Habitat assessment for Lot 22 DP 602597 Smiths Road, Avocado Heights, Coffs Harbour for the Tomahawk Group of Companies
- Completion of a Flora and Fauna Assessment for land at Moonee for Resource Design and Management
- Flora and Fauna assessment for proposed rezoning of land at Black Rock Estate, Pottsville for Pottsville Development Corporation Pty. Ltd
- Completion of Review of Environmental Factors (REF) Study for a proposed power line extension along Boggy Creek Road, Moonem-New Italy Road, Bungawalbin for North Power
- Completion of flora and fauna surveys for the Public Works Department in a SEPP 14 Wetland as an integral component in the preparation of an Environmental Impact Assessment for sewerage outfall at Skennars Head (north Ballina)
- Completion of a flora/fauna assessment for the Public Works Department and Montgomery Watson for proposed sewerage treatment works near Wardell
- Completion of a Fauna Impact Statement for the ocean outfall at Look-at-me-now Headland for Camp Scott Furphy, Public Works Department and Coffs Harbour City Council
- Completion of an assessment of a Statement of Environmental Effects (Winders Barlow & Morrison), which involved a \$30m development near Cudgen Lake, Tweed Shire



- Fauna Consultant to Calsonic Management Services (trading as Cobaki Lakes) for the preparation of a Statement of Environmental Effects for a road extension from Tugan into the Cobaki Lakes Residential Development area and fauna survey of the Cobaki site (\$250m residential development)
- Flora and Fauna Consultant for the Development of North Ocean Shores (800ha). Completion of a large fauna survey on 350ha of this site
- Completion of a Fauna Impact Statement (FIS) at Cabarita Gardens Seaside Estate
- Completion of a large number of Koala surveys in the Lismore, Ballina, Byron Bay, Tweed, Maclean and Port Stephens regions
- Completion of Flora and Fauna Surveys and Rehabilitation plans for EIS's for seven (7) Tweed Shire Council quarries
- Completion of Flora and Fauna Surveys and Rehabilitation plans for EIS's for four (4) Ballina Shire Council quarries
- Completion of Flora and Fauna Surveys and Rehabilitation plans for EIS's for seven (7) Tweed Shire Council and three (3) privately owned quarries
- Completion of Flora and Fauna Surveys and Rehabilitation plan for and EIS for a roadbase quarry at Teven
- Sub-consultant to Mt. King Ecological Surveys for the Billinudgel to Chinderah Highway Options (RTA) - Koala Survey

### QUEENSLAND

- Detailed Flora and Fauna Assessment for land at Eagle Ridge, Kin Kin for Titanium Group
- Information Request - Lot 65 on SP 166661 and Esplanade Abutting Bell's Creek, Mahogany Drive Pelican Waters
- Study of Wetland/Marine characteristics of proposed development of a site at Pacific Heron, Coomera
- Detailed Ecological Assessment of the proposed Peregrian Springs development site for Forrester Residential Developments Pty Ltd
- Flora and Fauna Assessment - Lot 52 on SP116914 and Lot 9 on RP186501-226 Thompsons Road & Upper Ormeau Road, Kingsholme
- Flora and Fauna Assessment on Proposed Industrial Development - Lot 11 1071 Nudgee Road, Banyo
- Constraints Report on Lots 21 & 22 on RP69666 Mt Petrie Road, McKenzie



- Flora and Fauna Assessment proposed Residential development - Lot 252, 354 Coorang Road, Carbrook
- Vegetation Assessment of Lot 4 & 5 RP130839 Sawreys Road, Forest Glen for Livingstone Surveys
- Flora and Fauna Assessment for Proposed 28 Lot Subdivision - Lots 5-11 RP96262; Lots 1-8, 11-20, 22-23 RP96004; Lot 1 RP161290, Waterford
- Corridor Assessment - Lot 511 RP221538 & Lots 2 & 5 RP 897053 - Beaudesert Road and Logan Motorway, Drewvale
- Ecological Assessment - Lot 300 RP 865231 Portion 8 Blanch Crescent, Crescent Street, Bli Bli
- Environmental Management Plan and Open Space Management Plan Lot 183 on RP 156422 - 176 Baileys Mountain Road, Upper Coomera
- Ecological Assessment for proposed Retirement Village, New Emu Mountain Road, Noosa Springs
- Detailed Ecological Assessment - Lot 16, 480 Beaudesert-Nerang Road, Maudsland
- Ecological Assessment for Proposed Development site - Lot 996 on RP 164946, Lots 23 and 33 on M 332543 and Lot 34 on W 31315 Hotham Creek Road, Willowvale
- Detailed Ecological Assessment Lot 4 on RP 93179 Caboolture - Bribie Island Road, Ningi for Navco Property Group
- Prepare a Fauna Assessment specifically targeting the False Water Rat (*Xeromys myoides*) for a proposed residential development at Shoal Point Mackay for Sunland Group
- Ecological Assessment for Proposed development of land at Stringybark Road, Buderim for Flinders Anglican College
- Detailed Ecological Assessment for Gold Coast City Council - Beenleigh Structure Plan, Beenleigh
- Detailed Ecological Assessment of the proposed Lot 1 on RP 224569, Lot 1 on RP 189794, Lot 1 on RP 133987 and Lot 120 on RP 139226, Bundilla Lakes
- Detailed Survey and Assessment of the terrestrial vertebrate fauna of the Enterprise Project Area on North Stradbroke Island for Consolidated Rutile Limited (CRL)
- Detailed Ecological Assessment of a proposed residential subdivision, Dandenong Road, Mt Ommaney for A.V. Jennings Ltd



- Detailed Ecological Assessment for Lot 3 on RP 122781 and Lot 138 on S312585, Panorama Drive, Thornlands for A.V. Jennings Ltd
- Detailed Ecological Assessment for land at North Tamborine. A report to James and Margaret McCulloch
- Detailed Ecological Assessment of Lot 4 on RP 851934, Lot 5 SP 120423 and Lot 1 on SP 120423, Coolum Ridges for Rod Tate and Partners
- Detailed Assessment of the Botanical Values on Lots 1, 2, 3, & 4 on RP 198757; Lots 8 & 10 on RP 198758; and Lot 112 on RP 910157, Yandina Coolum Road, Coolum
- Detailed Flora issues related to Bayview Noosa for Leighton Properties
- Detailed Ecological Assessment of Manly Road Tingalpa for C & B Group
- Detailed Ecological assessment of land at Levington Road, Eight Mile Plains for Fletcher Drew Consulting
- Monitoring of Squirrel glider population at Minnippi Parklands for Design Marketing and Management and the BMD Group
- Detailed Fauna survey and habitat assessment at Golden Valley Estate, Bonogin August 2000 for Terton Corporation Pty Ltd
- Baseline flora and fauna survey and impact assessment on Lady Loretta Mining Land, Mt Isa for Resource Strategies Pty Ltd August 2000
- Flora and Fauna Assessment at Tarragindi for Welwyn Nominees
- Baseline flora and fauna assessment Nottingham Road, Calamvale for HMW Pacific Pty. Ltd October 2000
- Detailed Flora and Fauna Assessment Lake Manchester Road, Mt Crosby for Brisbane City Council
- Detailed Vegetation Management Plan at Old Burleigh Town, West Burleigh for Weathered Howe
- Flora and Fauna survey along a 20km section of a tributary of the Burnett River for a proposed sand extraction development within the creek bed (Monto Minerals)
- Detailed flora and fauna assessment at Morayfield for a proposed Golf Course development
- Detailed flora and fauna assessment of the entire Bayview Estate at Mount Cotton. Included a detailed Koala assessment and two (2) Planning & Environment court appearances
- Flora and Fauna survey (including detailed Microchiropteran bat survey) at the Ravenswood Gold Mine (west of Townsville) for Mount Isa Mines (MIM)



- Australian Koala Foundation, 1993, responsible for management of the GIS Koala habitat mapping project for the east coast of Australia and for initiating and managing the AKF Wildlife consultancy
- Wildlife Consultant to Springfield Corporation (Queensland) determining habitat corridors on a 2300ha site south-west of Brisbane
- Wildlife Consultant to Transtate Pty Ltd and Sinclair Knight Merz for marina development at Deception Bay, Redcliffe (Qld)

## ENVIRONMENTAL MANAGEMENT

Environmental Management of the East Coast Operations of the Newcrest Mining Group 1990 - 1992, including Woodburn Mineral Sands, Browns Creek Gold Mine, Orange, Parks Gold Mine. Management of several large residential/industrial development sites as rehabilitation site managers for example Kings Forest near Kingscliff, Cobaki Lakes near Tweed Heads, Pottsville Seabreeze Estate near Pottsville, Yatala Lions Park at Yatala and Boral Quarry at Stapylton.

Specific Tasks completed as Components of the various Environmental Management plans:

- Preparing Annual Reports and Environmental Management Plans;
- Devising, implementing and monitoring rehabilitation strategies;
- Manage and prepare Environmental Impact Assessments;
- Liaison with government, industry and media personnel;
- Environmental compliance as set by the various consent authorities. This requires monitoring of air, noise, water, soil and plants at various locations on and near the Site; and
- Advice to in-house planners with regard to environmental constraints on development applications and also as approved developments progress.



Preparation of Environmental Management Plans for natural systems, 1988 - 2005, including rehabilitation plans for:

- Big Scrub Nature Reserve (NSW NPWS);
- Littoral Rainforest, Wooyong (P Muller);
- Littoral Rainforest, Fingal (Ocean Blue Resorts);
- Littoral Rainforest, Lennox Head (for Condon);
- Coastal Sand Dunes, Wooyung (P Muller);
- Coastal Sand Dunes, Fingal (Ocean Blue Resorts);
- Coastal Sand Dunes, Seven Mile Beach (Byron Bay Academy);
- Heathland, Broadwater (for Maloney);
- Floodplain Subtropical Rainforest, Pottsville (Seabreeze Estate for Metricon Homes);
- Floodplain Swamp Sclerophyll Forest and Heathland, Kings Forest near Kingscliff (for Narui Gold Coast Pty Ltd);
- Riparian Rainforest and Eucalypt communities, Carrara Gold Coast (for WP Brown & Partners-Engineers);
- Subtropical Rainforest and Eucalypt communities, Cobaki Lakes, Tweed Heads West (for Cardno MBK);
- Subtropical Rainforest, Murwillumbah (for Metricon);
- Freshwater Wetlands, Wooyung (P Muller);
- Freshwater Wetlands, Suffolk Park (Supbrook P/L);
- Mineral Sands Mine, Newrybar (Newcrest Mining);
- Byron Bay Sanctuary, Byron Bay (Greenfields Mountain Pty Ltd); and



## **KOALA STUDIES**

The below is a small selection of Koala assessment projects completed by JWA over the last twenty (20) years:

### **Radio Tracking Surveys**

- Coolangatta Tweed Heads Golf Course, Coolangatta, NSW
- Kings Forest, Kingscliff, NSW

### **Koala Plans of Management**

- Black Rocks, Pottsville, NSW
- Caroon Retirement Village, Goonellabah, NSW
- Coolangatta Tweed Heads Golf Course, Coolangatta, NSW
- Waterview Heights, Grafton, NSW

### **Site Assessments Re: Population Size**

- Cobaki Estate, Cobaki Lakes, NSW
- Kings Forest, Kingscliff, NSW
- James Creek Road, James Creek, NSW
- Coolum Ridges, Peregian Beach, QLD
- Goodrich Road East, Griffin, QLD
- Winn Road, Cashmere, QLD





### Site Assessment Re: Koala Usage

- James Creek Road, James Creek, NSW
- Macauley's Headland, Coffs Harbour, NSW
- Essence of Peregian, Peregian Beach, QLD
- Gardner Road, Rochedale, QLD
- Glasson Drive, Bethania, QLD
- Litherland Road, Rocksburg, QLD
- Mt Petrie Road, Mt Petrie, QLD
- North Lakes, QLD
- The Holms Property, Pimpama, QLD
- Trykris Pty Ltd, Kimberley Drive, Shailer Park, QLD
- Viridian Resort, Noosa Heads, QLD
- Winn Road, Cashmere, QLD



## UNIVERSITY OF TECHNOLOGY, SYDNEY

*This is to certify that*  
**James Victor Warren**  
*has this day been admitted to the degree of*  
**Master of Applied Science**

*By the authority of the Council*  
*The Seal of the University is hereunto affixed this*  
**Twenty-sixth Day of April, 1990**

Acting Registrar and Secretary

Vice-Chancellor

Chancellor





# THE UNIVERSITY OF NEW ENGLAND

*By authority of the Council*

JAMES VICTOR WARREN

*was admitted to the degree of*

**BACHELOR OF SCIENCE**

*on the* 12th *day of* April, 1975

*Academic Secretary*

*Vice-Chancellor*



## APPENDIX 3 - Koala - Priority Actions

A total of 15 strategies have been identified to help recover this threatened [species/population/endangered ecological community]. Each of these strategies has a number of priority actions within it. The table below shows these strategies and priority actions. It also shows which organisation is responsible for each priority action, along with the progress made so far. You can also see details of the [broad geographic regions each priority action applies to](#) in New South Wales.

For more general information about this species, see a [detailed species profile](#).

Description of priority action	Priority
Recovery strategy: <a href="#">Aboriginal liaison and/or interpretation</a> Investigations into the cultural significance of koalas to indigenous Australians will be encouraged.	Low
Recovery strategy: <a href="#">Assess threats and determine recovery strategies</a> In areas where overbrowsing becomes a significant issue, develop management strategies based on the National Koala Conservation Strategy.	Medium
Recovery strategy: <a href="#">Captive Husbandry or ex-situ collection/propagation</a> Accredited and licensed wildlife rehabilitation groups will continue to rescue and rehabilitate injured, orphaned and/or diseased koalas according to the NPWS policy "Koala Care in NSW: Guidelines and Conditions", including an upgraded recording system.	High
DECC will analyse NSW koala care records, assist in developing improved protocols to record data to ensure consistency among rehab groups & to provide useful information for koala conservation.	High
DECC will assist wildlife rehabilitation groups to interpret the ecological relevance and application of rescue work and rescue records for koala conservation.	High
Recovery strategy: <a href="#">Community and land-holder liaison/ awareness and/or education</a> DECC will make available/disseminate the information gathered during the implementation of the recovery plan.	High
DECC will investigate with stakeholders the value of holding another koala summit (state conference).	Low
DECC will prepare and make available/disseminate information to drivers in areas where koala populations occur regarding the threat posed to koalas by vehicles.	Low
DECC will provide information in relation to the management of dogs and their threat to koalas.	Low
Information regarding koalas and koala habitat, including maps of koala habitat, will be prepared by DECC and disseminated, following discussions, to relevant bush fire management committees.	Low



## Kings Forest (Stage 1) - Koala Plan of Management

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Recovery strategy: [Coordinate the recovery and/or threat abatement program](#)

DECC, through collaboration with a wide range of researchers & conservation partners, will coordinate & promote implementation of the recovery plan, using the Priorities Action Statement as the primary information & coordination tool. High

Recovery strategy: [Develop and implement protocols and guidelines](#)

The NSW government will participate in the preparation of a revised National Koala Conservation Strategy to replace the 1998 ANZECC Strategy. High

DECC will encourage the revision and/or production of a regional list of koala food and shelter trees for catchment management authorities, local government areas and other local/regional koala plans that deal with specific issues and/or locations. Medium

DECC will prepare environmental impact assessment guidelines for the koala. Medium

DECC will work with councils to assist in the preparation of Comprehensive Koala Plans of Management under SEPP 44. Medium

DECC, in partnership with planning research groups, will prepare a generic approach to planning guidelines as an application of the research done on the impacts of habitat loss, fragmentation and the impediments to koala movement between fragments. Medium

DECC will advise consent and determining authorities on the appropriate measures which should be included in the design and construction of new roads which may have the potential to impact on koala habitat. Low

Recovery strategy: [Establish management agreements with public authorities CMAs and land managers/owners](#)

DECC will approach key stakeholders to negotiate conservation outcomes for important koala populations in NSW. Medium

Recovery strategy: [Habitat management: Ongoing EIA - Advice to consent and planning authorities](#)

DECC will provide specific advice arising from the koala recovery plan, as required, to consent & determining authorities regarding their decision-making responsibilities under SEPP 44, the EP&A Act and the NV Act. Medium

DECC will provide appropriate regional koala food tree species lists to catchment management authorities. Low

Recovery strategy: [Habitat management: Other](#)

Management of all DECC estate will specifically provide for the protection of koalas. Low

Recovery strategy: [Habitat Rehabilitation/Restoration and/or Regeneration](#)

DECC will contribute to koala habitat rehabilitation & revegetation activities undertaken by individuals, community groups & government agencies by identifying priority areas for work in each koala management area & providing technical advice & support. Medium

Recovery strategy: [Monitoring](#)





## Kings Forest (Stage 1) - Koala Plan of Management

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DECC will design & implement a program to monitor changes in the status of koalas & koala habitat & evaluate the success of recovery actions in improving the conservation status of koalas in NSW.	Medium
Recovery strategy: <a href="#">Other Action</a>	
Consideration will be given to amending Schedule 2 (Feed Tree Species) of SEPP 44 to include additional food tree species of koalas.	High
Implement the objectives of SEPP 44 and the National Koala Conservation High Strategy for the conservation of koalas and their habitat in NSW.	High
Consideration will be given to amending SEPP 44 to: allow for other koala plans to be developed by councils on a regional or local government basis; & allow for Schedule 2 (Feed Tree Species) of SEPP 44 to include additional koala food tree species.	Medium
Consideration will be given to having a single definition of koala habitat, instead of 'core' and 'potential' habitat and to expanding the list of koala foods.	Medium
DECC will revise the local government area list on the basis of the 2006 map of koala distribution (from the community survey) and consider whether to recommend its incorporation into SEPP 44.	Medium
DECC, together with Dept. of Planning, will work with councils & CMAs to assist them in developing koala habitat protection measures for incorporation in relevant local environmental plans, & regional natural resource and vegetation management plans.	Medium
DECC will approach Forests NSW to collaborate in developing policy & practice consistent with the NSW Koala Recovery Plan; exchange information, given koalas move across tenure boundaries; & work within the context of agreed regional forest agreements.	Low
DECC will approach RTA to align its policy & practice with the koala recovery plan; exchange info & produce plans; ensure RTA has an active program to implement engineering solutions & other measures to reduce adverse impacts of vehicles on koalas.	Low
DECC will approach the Department of Planning to jointly develop and provide specific advice to local government about the incorporation of koala protection into their new local environmental plans, currently under development.	Low
Recovery strategy: <a href="#">Research</a>	
Analyse community-based survey data on koala distribution in NSW in relation to features such as habitat, tenures, catchment management authority and bioregional boundaries, and compare 2006 survey results with those of the 1986 survey.	High
DECC will analyse patterns of koala road deaths to enable recommendations to road managers on appropriate management measures which limit the risk to koalas on existing roads.	High
DECC will analyse the impact of dogs to identify whether dogs pose a significant threat to koala populations, and alert land managers to the problem.	High



## Kings Forest (Stage 1) - Koala Plan of Management

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DECC will undertake and encourage other researchers to undertake population studies of koalas in a range of habitats in relation to a range of issues such as fire, drought, dogs, cars, habitat fragmentation, and climate change.	High
DECC will undertake research on koala ecology to better understand the primary issues affecting their conservation, & coordinate/contribute to the disparate interests & activities relevant to understanding & managing koalas in NSW.	High
Define the factors that determine koala habitat including soils, elevation, climate and tree species (food and shelter).	High
Disseminate the results of the community-based survey on koala distribution in NSW, including in a standard scientific publication.	High
Assess koala population dynamics and habitat use across the NSW range.	Medium
Assess the significance and extent of overbrowsing which is likely to emerge in NSW.	Medium
Compare and assess the reliability of different koala survey and analytical techniques.	Medium
Conduct research on the relative impacts of different levels of habitat loss and fragmentation on koala populations, and on the ability of koalas to move between patches, relating to both daily movements and long-term dispersal.	Medium
DECC will encourage groups to undertake research on any aspect of koala biology & to communicate with DECC when research is being undertaken & when results are published, so officers managing the recovery plan have access to the best available info.	Medium
Investigate the relative importance of different threats to koalas, how to ameliorate them and the effectiveness of mitigation measures.	Medium
Undertake studies of the history of koala management as part of an adaptive management strategy.	Medium
Assess the economic and non-biological values of koalas to the whole community.	Low
Recovery strategy: <a href="#">Survey/Mapping and Habitat assessment</a>	
DECC will determine the distribution of koalas across NSW by conducting a community-based survey.	High
DECC will identify important koala populations in NSW for active management, monitoring and conservation.	High
Undertake local and/or regional surveys in selected koala populations with particular emphasis on repeating earlier surveys to search for trends and causes of changes in koala distribution.	High
Examine the population of koalas in Bongil Bongil National Park to assist in the implementation of the Koala Recovery Plan in this icon forest.	Medium
Undertake coordinated surveys of koalas across a range of scales, using appropriate methods & focusing on different issues at the site, landscape/regional, & state scale, including a mechanism for identifying	Medium



endangered populations.

Recovery strategy: [Translocation and/or reintroduction](#)

A translocation proposal consistent with the NPWS Policy for the Translocation of Threatened Fauna in NSW will be prepared for any proposed movement of koalas. DECC will disseminate info regarding translocation of koalas.

High