

# 'The Glades' Residential Development Moonee Beach NSW

Aboriginal Cultural Heritage Due Diligence  
Assessment

Winten Property Group

February 2018



Ref: 0446641

[www.erm.com](http://www.erm.com)

# 'The Glades' Residential Development Moonee Beach, NSW

*Aboriginal Cultural Heritage Due Diligence Assessment*

Rothwell Boys Pty Ltd (Winten Property Group)

Prepared by:	Joanne Woodhouse
Position	Project Manager
Signed:	
Date:	23 February 2018
Approved by:	Paul Douglass
Position:	Partner
Signed:	
Date:	23 February 2018

February 2018

0446641\_Final

[www.erm.com](http://www.erm.com)

This disclaimer, together with any limitations specified in the report, apply to use of this report. This report was prepared in accordance with the contracted scope of services for the specific purpose stated and subject to the applicable cost, time and other constraints. In preparing this report, ERM relied on: (a) client/third party information which was not verified by ERM except to the extent required by the scope of services, and ERM does not accept responsibility for omissions or inaccuracies in the client/third party information; and (b) information taken at or under the particular times and conditions specified, and ERM does not accept responsibility for any subsequent changes. This report has been prepared solely for use by, and is confidential to, the client and ERM accepts no responsibility for its use by other persons. This report is subject to copyright protection and the copyright owner reserves its rights. This report does not constitute legal advice.

## CONTENTS

	<i>TERMS, DEFINITIONS &amp; ABBREVIATIONS</i>	<i>I</i>
<i>1</i>	<i>INTRODUCTION</i>	<i>1</i>
<i>1.1</i>	<i>ASSESSMENT OBJECTIVES</i>	<i>4</i>
<i>1.2</i>	<i>DUE DILIGENCE METHODOLOGY</i>	<i>4</i>
<i>1.3</i>	<i>AUTHORSHIP AND PROJECT INVOLVEMENT</i>	<i>5</i>
<i>2</i>	<i>RELEVANT LEGISLATION</i>	<i>6</i>
<i>3</i>	<i>ABORIGINAL COMMUNITY CONSULTATION</i>	<i>8</i>
<i>3.1</i>	<i>NATIVE TITLE</i>	<i>8</i>
<i>4</i>	<i>ENVIRONMENTAL CONTEXT</i>	<i>9</i>
<i>4.1</i>	<i>GEOLOGY AND GEOMORPHOLOGY</i>	<i>9</i>
<i>4.2</i>	<i>TOPOGRAPHY</i>	<i>10</i>
<i>4.3</i>	<i>WATER AVAILABILITY</i>	<i>10</i>
<i>4.4</i>	<i>PAST LAND USES AND DISTURBANCES</i>	<i>10</i>
<i>4.5</i>	<i>SUMMARY OF THE ENVIRONMENTAL CONTEXT</i>	<i>14</i>
<i>5</i>	<i>ARCHAEOLOGICAL BACKGROUND</i>	<i>15</i>
<i>5.1</i>	<i>ETHNOHISTORIC CONTEXT</i>	<i>15</i>
<i>5.2</i>	<i>LOCAL ARCHAEOLOGICAL CONTEXT &amp; PROJECT AREA</i>	<i>17</i>
<i>5.2.1</i>	<i>OEH AHIMS REGISTER</i>	<i>17</i>
<i>5.2.2</i>	<i>HERITAGE REGISTER LISTINGS</i>	<i>19</i>
<i>5.3</i>	<i>PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS</i>	<i>19</i>
<i>5.3.1</i>	<i>IMPLICATIONS FOR THE PROPOSED MODIFICATION AREA – PREDICTIVE MODEL</i>	<i>28</i>
<i>6</i>	<i>DUE DILIGENCE SITE INSPECTION</i>	<i>32</i>
<i>7</i>	<i>MANAGEMENT AND MITIGATION MEASURES</i>	<i>36</i>
<i>7.1</i>	<i>ABORIGINAL HERITAGE INDUCTION</i>	<i>38</i>
<i>7.2</i>	<i>PROTOCOL FOR DISCOVERY OF UNEXPECTED SITES</i>	<i>38</i>
<i>7.3</i>	<i>PROTOCOL FOR DISCOVERY OF SKELETAL REMAINS</i>	<i>40</i>
<i>8</i>	<i>CONCLUSION</i>	<i>42</i>
<i>9</i>	<i>REFERENCES</i>	<i>43</i>
	 <i>ANNEXES</i>	
<i>ANNEX A</i>	<i>DATABASE SEARCHES</i>	

## *LIST OF TABLES*

<i>TABLE 2.1</i>	<i>KEY LEGISLATION</i>	<i>7</i>
<i>TABLE 5.1</i>	<i>AHIMS REGISTERED SITES</i>	<i>18</i>
<i>TABLE 5.2</i>	<i>SUMMARY OF PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS WITHIN THE PROJECT AREA AND MOONEE BEACH AREA</i>	<i>21</i>
<i>TABLE 5.3</i>	<i>SITES RECORDED WITHIN THE GLADES ESTATE PROJECT AREA</i>	<i>26</i>
<i>TABLE 5.4</i>	<i>DEFINITIONS OF ARCHAEOLOGICAL POTENTIAL</i>	<i>29</i>
<i>TABLE 5.5</i>	<i>LANDFORMS IN WHICH SITE TYPES USUALLY OCCUR</i>	<i>30</i>
<i>TABLE 6.1</i>	<i>GROUND SURFACE VISIBILITY RATING</i>	<i>33</i>
<i>TABLE 6.2</i>	<i>PHOTO LOG SHOWING DAMAGE TO TREES WITHIN THE PROPOSED MODIFICATION AREA</i>	<i>35</i>
<i>TABLE 7.1</i>	<i>MANAGEMENT AND MITIGATION MEASURES AS PER PROJECT APPROVAL</i>	<i>37</i>

## *LIST OF FIGURES*

<i>FIGURE 1.1</i>	<i>SITE LOCALITY</i>	<i>3</i>
<i>FIGURE 1.2</i>	<i>PROPOSED MODIFICATION</i>	<i>4</i>
<i>FIGURE 4.1</i>	<i>RECORDED HERITAGE SITES AND ASSOCIATED LANDFORMS</i>	<i>13</i>
<i>FIGURE 5.1</i>	<i>AHIMS RESULTS</i>	<i>18</i>
<i>FIGURE 7.1</i>	<i>PROTOCOL FOR DISCOVERY OF UNEXPECTED SITES</i>	<i>39</i>
<i>FIGURE 7.2</i>	<i>PROTOCOL FOR DISCOVERY OF SKELETAL REMAINS</i>	<i>41</i>

## TERMS, DEFINITIONS & ABBREVIATIONS

Aboriginal Heritage Impact Permit	a permit issued by the Director General of the Office of Environment and Heritage (OEH) (or their delegate) allowing a person to desecrate or harm an Aboriginal Place or Aboriginal objects.
Aboriginal object (as defined in the <i>NPW Act</i> )	any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises NSW, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.
Aboriginal Place (as defined in the <i>NPW Act</i> )	<p>a place declared under s.84 of the <i>National Parks and Wildlife Act 1974 (NPW Act)</i> that, in the opinion of the Minister, is or was of special significance to Aboriginal culture.</p> <p>Information about the location of Aboriginal Places in NSW can be found on the OEH website at <a href="http://www.environment.nsw.gov.au/nswcultureheritage/PlacesOfSignificance.htm">www.environment.nsw.gov.au/nswcultureheritage/PlacesOfSignificance.htm</a></p>
Aboriginal culturally modified tree (as defined in the NPW Regulation)	<p>a tree that, before or concurrent with (or both) the occupation of the area in which the tree is located by persons of non-Aboriginal extraction, has been scarred, carved or modified by an Aboriginal person by:</p> <ul style="list-style-type: none"><li>• the deliberate removal, by traditional methods, of bark or wood from the tree, or</li><li>• the deliberate modification, by traditional methods, of the wood of the tree.</li></ul>
activity	a project, development, activity or work (this term is used in its ordinary meaning, and does not just refer to an activity as defined by Part 5 of the <i>Environmental Planning and Assessment Act 1979 (EP&amp;A Act)</i> ).
disturbed land or land already disturbed by previous activity	<p>land is disturbed if it has been the subject of a human activity that has changed the land's surface, being changes that remain clear and observable.</p> <p>Examples include ploughing, construction of rural infrastructure (such as dams and fences), construction of roads, trails and tracks (including fire trails and tracks and walking tracks), clearing vegetation, construction of buildings and the erection of other structures, construction or installation of utilities and other similar services (such as above or below ground electrical infrastructure, water or sewerage pipelines, stormwater drainage and other similar infrastructure) and construction of earthworks.</p>
due diligence	taking reasonable and practical steps to determine whether a person's actions will harm an Aboriginal object and, if so, what measures can be taken to avoid that harm:
harm (as defined in the <i>NPW Act</i> )	<ul style="list-style-type: none"><li>• destroy, deface, damage an object;</li><li>• move an object from the land on which it is situated; and/or</li><li>• cause or permit an object to be harmed.</li></ul>
Minister	Minister administering the <i>NPW Act</i>

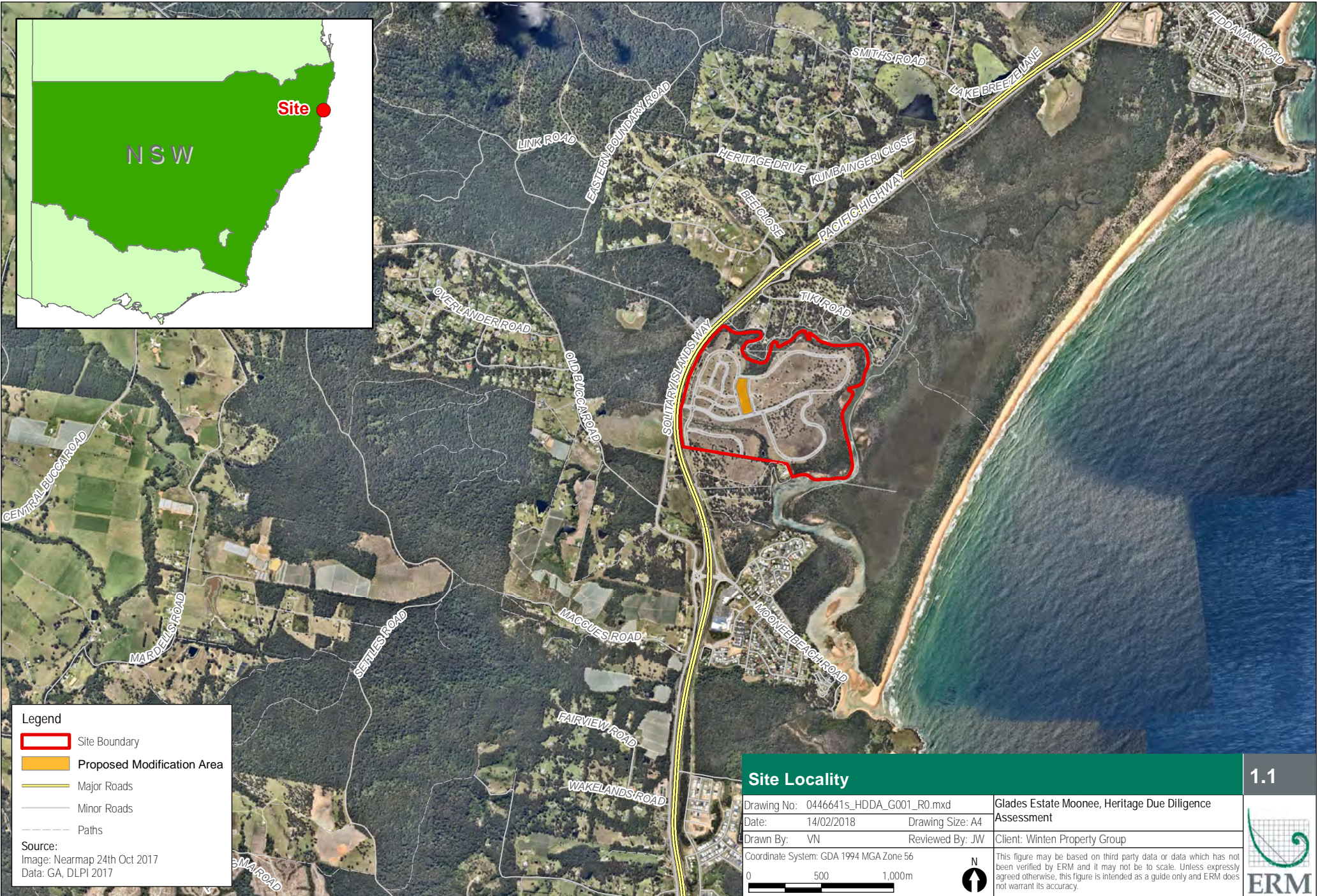
Source: DECCW (2010). *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales*.

Environmental Resources Management Australia Pty Ltd (ERM) was commissioned by Rothwell Boys Pty Ltd (Winten Property Group) to prepare an Aboriginal cultural heritage due diligence assessment to support a proposed modification to the existing Project Approval for The Glades Estate, Pacific Highway, Moonee, NSW (refer to *Figure 1.1*).

The proposed modification is being prepared under Section 75W of the *Environmental Planning and Assessment Act 1979* (EP&A Act) subsequent to project approval for the 524 lot residential development granted by the then Minister for Planning on 5 March 2009 (06\_0143). Following revision of the development boundary, an additional area of 1.8 hectares (ha) within the central portion of the site has been added to the development footprint and forms the basis of this due diligence assessment (refer to *Figure 1.2*).

This report has been prepared in response to a request from the Department of Planning and Environment (DPE) and in accordance with the DECCW (2010) *Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales* (Due Diligence Code of Practice). The Due Diligence Code of Practice is intended to provide a framework for proponents to take reasonable and practicable measures to determine whether their actions will harm an Aboriginal object or Place and, if so, what measures can be taken to avoid that harm.

Due diligence is not an assessment of Aboriginal cultural heritage values although this high level of assessment has confirmed that the Aboriginal archaeology record of the Glades Estate Project Area is well represented within previous studies undertaken to support the existing project approval and that identified heritage values have been protected along Moonee and Skinners Creeks. The proposed modification area does not have any increased likelihood of Aboriginal heritage values or archaeological sensitivity and the results of this due diligence assessment shows that the proposed modification would be unlikely to result in any increased impacts to those already approved.



**Legend**

- Site Boundary
- Proposed Modification Area
- Major Roads
- Minor Roads
- Paths

**Source:**  
 Image: Nearmap 24th Oct 2017  
 Data: GA, DLP1 2017

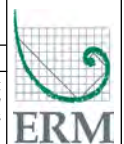
**Site Locality**

1.1

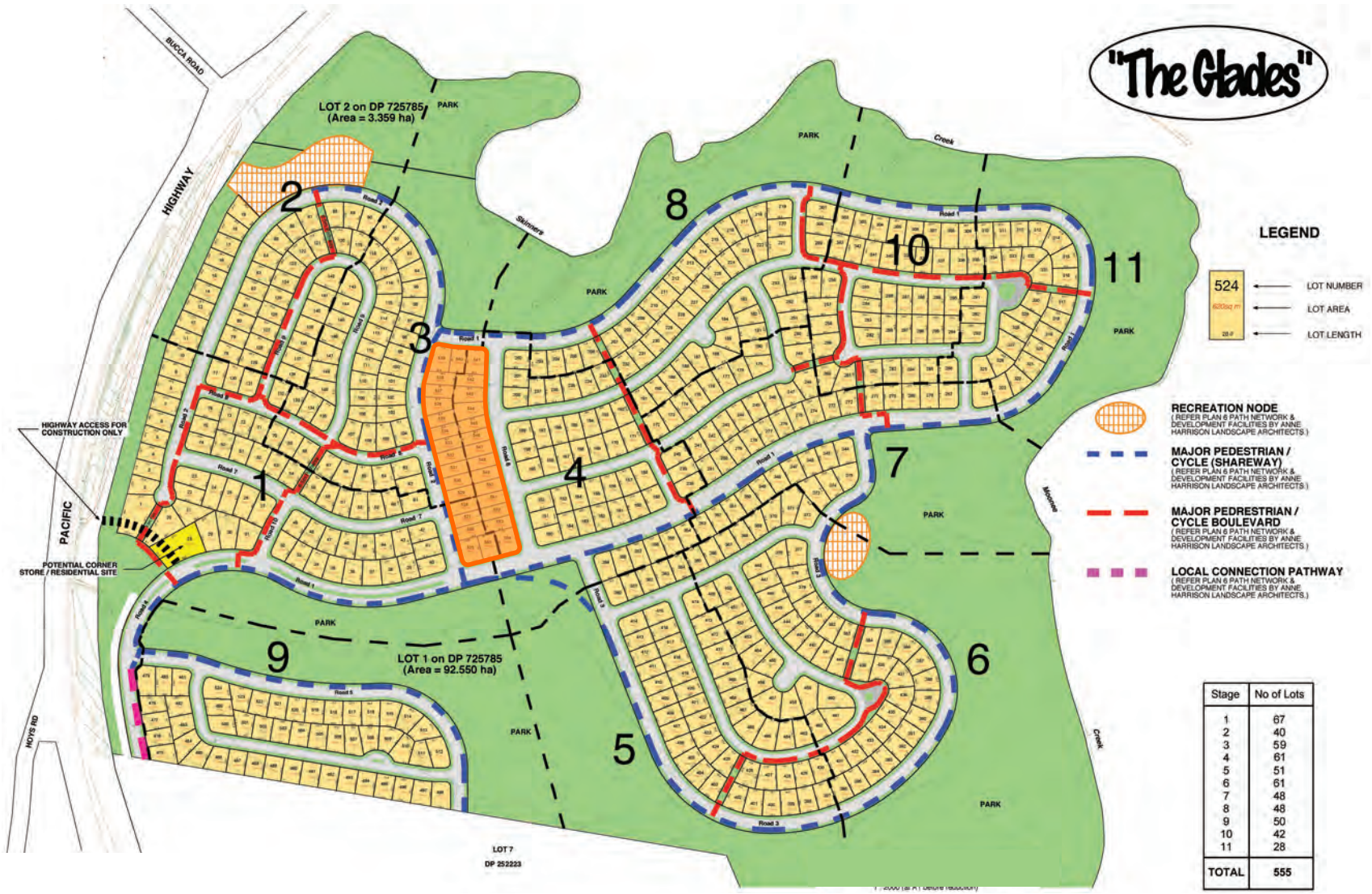
Drawing No: 0446641s_HDDA_G001_R0.mxd	Glades Estate Moonee, Heritage Due Diligence Assessment
Date: 14/02/2018	Drawing Size: A4
Drawn By: VN	Reviewed By: JW
Client: Winten Property Group	
Coordinate System: GDA 1994 MGA Zone 56	




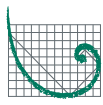
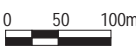

This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.



# "The Glades"



Legend  
 Proposed Modification Area  
 Source:  
 Auspacific Engineers, January 2018.

Proposed Modification		1.2	
Drawing No: 0446641s_HDDA_C001_R0.cdr	Glades Estate Moonee	 <b>ERM</b>	
Date: 13/02/2018	Drawing size: A4		Heritage Due Diligence Assessment
Drawn by: GC	Reviewed by: JP		Client: Winten Property Group
			
<p>This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.</p>			

## 1.1

### ASSESSMENT OBJECTIVES

The objective of this due diligence assessment is to identify whether the previous surveys undertaken across the Glades Estate and the existing project approval are representative of the proposed modification area and to identify any potential impacts that the proposed modification may have on Aboriginal cultural heritage. This assessment aims to:

- identify any known Aboriginal objects or Places within or in close proximity to the proposed modification area;
- assess the potential for previously unidentified objects or Places of cultural heritage significance to be present within the proposed modification area;
- determine a strategy for future management of any cultural heritage issues identified during the assessment to ensure compliance under the *NSW Parks and Wildlife Act 1974* (NPW Act); and
- provide advice and recommendations regarding a strategy for compliance with the cultural heritage duty of care and associated legislative requirements.

## 1.2

### DUE DILIGENCE METHODOLOGY

The NPW Act establishes strict liability for impacting Aboriginal objects or places. However, a person who exercises due diligence in determining that their actions will not harm Aboriginal objects has a defence against prosecution if they later unknowingly harm an object or Place.

The Due Diligence Code of Practice was adopted by the *National Parks and Wildlife Regulation 2009* (NPW Regulation) and establishes the minimum requirements for exercising 'due diligence' when undertaking activities which may impact Aboriginal objects or places. The Due Diligence Code of Practice can be used for all activities across all environments.

The Due Diligence Code of Practice sets out the reasonable and practicable steps which individuals and organisations need to take in order to:

- identify whether or not Aboriginal objects or Places are, or are likely to be, present in an area;
- determine whether or not their activities are likely to harm Aboriginal objects or Places (if present); and
- determine whether an AHIP application is required.

The Due Diligence Code of Practice establishes a minimum benchmark for acceptable due diligence investigations to be followed. These investigations include:

- the carrying out of a search of the Aboriginal Heritage Information Management System (AHIMS) database to ensure there are no registered sites within the Project Area;
- a review of previous archaeological investigations in the Glades Estate Project Area; and
- an assessment of the relevant landscape features and visual inspection to determine whether there are Aboriginal objects or Places present within the Glades Estate Project Area or that they are likely.

As an existing Part 3A project, reference has also been made to the Draft *Part 3A Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation (2005)*. The Due Diligence Code has been used to determine the likelihood of heritage values and is generally consistent with the preliminary assessment under the Part 3a Guidelines.

### **1.3** *AUTHORSHIP AND PROJECT INVOLVEMENT*

ERM Archaeologist Joanne Woodhouse undertook the background research and due diligence assessment. ERM Principal Cultural Heritage Consultant (Archaeologist), Erin Finnegan, performed the technical review of this report and ERM Partner, Paul Douglass, undertook the Quality Assurance Review.

Aboriginal cultural heritage in NSW is protected by the *National Parks and Wildlife (NPW) Act 1974*. Land managers are required to consider the effects of their activities or proposed development on the environment under several pieces of legislation, principally the *Environmental Planning & Assessment Act 1979*. Cultural heritage, which includes Aboriginal heritage, is subsumed within the definition of “environment”. Commonwealth legislation protecting Aboriginal heritage may also apply to Indigenous heritage places in NSW in certain circumstances. Key legislation is summarised in *Table 2.1* below.

**Table 2.1** *Key Legislation*

State Legislation
National Parks and Wildlife Act 1974 (NSW)
<p>All Aboriginal objects within the State of New South Wales are protected under Part 6, and particularly Section 90, of the NPW Act.</p> <p>Under section 5 of the Act, “Aboriginal Object” means any deposit, object or material evidence (not being a handicraft made for sale) relating to the Indigenous habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.</p> <p>Sites of traditional significance that do not necessarily contain archaeological materials may be gazetted as ‘Aboriginal places’ and are protected under section 84 of the Act. This protection applies to all sites, regardless of their significance or land tenure.</p> <p>Under section 90, a person who, without first obtaining the consent of the Director-General, knowingly destroys, defaces or damages, or knowingly causes or permits the destruction or defacement of or damage to, an Aboriginal object or Aboriginal place is guilty of an offence.</p> <p>The provisions of the now repealed Part 3A of the EP&amp;A Act overrule the requirement for an Aboriginal Heritage Impact Permit (AHIP) under Section 90 of the NPW Act, however all other provisions remain applicable to this project. This includes Sections 85A and 89A of the NPW Act which details the recording and management of any Aboriginal cultural heritage values located within the area likely to be impacted by development activity.</p>
Heritage Act 1977 (NSW)
<p>The NSW <i>Heritage Act 1977</i> establishes the NSW Heritage Council and the SHR. The aim of the Act is to conserve the heritage of New South Wales. The aim of heritage management is not to prevent change and development, but to ensure that the heritage significance of recognised heritage items is not harmed by changes.</p> <p>The SHR is a separate listing to the State Heritage Inventory and includes items which are accorded SHR listing through gazettal in the NSW Government Gazette. Nominated items are considered by the NSW Heritage Council which then makes a recommendation to the Minister for Heritage. The Minister is empowered to place Interim Heritage Orders (IHO) on an item of potential State significance on the basis of advice received from the Heritage Council. :</p> <ol style="list-style-type: none"> <li>a. An item is important in the course, or pattern, of NSW’s cultural or natural history.</li> <li>b. An item has strong or special association with the life or works of a person, or group of persons of importance in NSW’s cultural or natural history.</li> <li>c. An item is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in NSW.</li> <li>d. An item has strong or special association with a particular community or cultural group in NSW for social, cultural or spiritual reasons.</li> <li>e. An item has potential to yield information that will contribute to an understanding of</li> </ol>

## State Legislation

NSW's cultural or natural history.

- f. An item possesses uncommon, rare, or endangered, aspects of NSW's cultural or natural history.
- g. An item is important in demonstrating the principal characteristics of a class of NSW's a) cultural or natural places: or b) cultural or natural environments.

## Environmental Planning and Assessment Act 1979 (NSW)

The *Environmental Planning and Assessment Act 1979* (EP&A Act) and the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation) provide the statutory framework for the assessment of the activity. Section 79C of the EP&A Act requires the consent authority to take into consideration a range of matters when undertaking an assessment of a DA. The EP&A Act requires that environmental impacts are considered in land use planning, including impacts on Aboriginal and non-Aboriginal heritage. Various planning instruments prepared under the Act identify permissible land use and development constraints.

The NSW National Parks and Wildlife Services (NPWS) provide guidelines for Aboriginal heritage assessment, including those conducted under the EP&A Act.

## Commonwealth Legislation

### Aboriginal and Torres Strait Islander Heritage Protection Act 1984 (Commonwealth)

The *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* protects areas and/or objects which are of significance to Aboriginal people and which are under threat of destruction. The Act can, in certain circumstances override state and territory provisions, or it can be implemented in circumstances where state or territory provisions are lacking or are not enforced. A significant area or object is defined as one that is of particular importance to Aboriginal people according to Aboriginal tradition. The Act must be invoked by or on behalf of an Aboriginal or Torres Strait Islander or organisation.

## ABORIGINAL COMMUNITY CONSULTATION

Section 5.2 of the Due Diligence Code of Practice specifically states that:

*'Consultation with the Aboriginal community is not a formal requirement of the due diligence process' (DECCW 2010:3).*

No consultation with the local Aboriginal community has been undertaken for this due diligence assessment report although it is noted that consultation during the planning, design and approval phases of the Glades Estate included the proposed modification area and was undertaken in accordance with the *Guidelines For Aboriginal Cultural Heritage Impact Assessment and Community Consultation* (DECC 2005). This was considered best practice at the time and is consistent with current consultation requirements. As reported by ERM (2007), consultation and survey was undertaken with three groups representing Aboriginal people in the area:

- Coffs Harbour Local Aboriginal Land Council (CHLALC);
- Yarrawarra Aboriginal Corporation; and
- Garby Elders.

As recorded in the previous surveys of the Glades Estate Project Area (Collins 1994, Appleton 2003 and ERM 2007), the viewpoints of the Aboriginal community regarding the cultural importance and sensitivity of the area have been considered and all recommendations to date relating to the development of the Glades Estate have been discussed with representatives of the local community.

The results of this previous consultation have been considered in this due diligence assessment and ongoing consultation as per the existing project approval is further discussed in Section 7.

### 3.1

#### NATIVE TITLE

The Native Title search undertaken on 5 February 2018 has not identified any Native Title Claims within the Glades Estate Project Area or the proposed modification area (refer to *Annex A*).

Human behaviour is directly and indirectly influenced by the environmental setting in which people live. This is particularly true for hunter gatherer societies, in which availability and abundance of local resources influences movement within the landscape. Environmental factors may also influence the potential that archaeological sites will be preserved and visible. The physical setting of the Glades Estate and the proposed modification area is therefore discussed in terms of geology and landforms, and past land use and disturbance.

A determination of the former environmental context is essential to develop accurate models of cultural activity, site distribution patterns and the archaeological potential of any given area. The environmental setting of Glades Estate and the proposed modification area is discussed below.

#### 4.1

##### GEOLGY AND GEOMORPHOLOGY

The Glades Estate is situated on Quaternary alluvial, paludal and estuarine deposits associated with Moonee Creek. These deposits overlie the Upper Palaeozoic Coramba Beds, which contain greywacke, slate and siliceous argillite (Geological Survey of NSW 1969). Other stone types present in the area surrounding Coffs Harbour include high grade siltstones and cherts (Appleton 2003:5). Rock types such as argillite, chert and greywacke are suitable for the manufacture of stone artefacts. Soils belong to the Newport soil landscape, which consists of Yellow Podzolic Soils and Humic Gleys on low, level to gently undulating coastal back barrier floodplains. These soils are deep, poorly drained and strongly acidic (DLWC 1999).

The subsurface conditions interpreted from a test pit (TP104) undertaken at the southern boundary of the proposed modification area by Coffey Geotechnics in 2007 (Coffey 2007) show:

- **Topsoil:** 0 - 0.2 m. Silty clay, low plasticity, dark brown.
- **Estuarine/Alluvial Soil:** 0.2 - 0.9 m. Silty clay, low to medium plasticity, grey.
- **Residual Soil:** 0.9 - 1.7 m. Silty gravelly clay and gravelly clay, low to medium plasticity, grey, with some orange brown mottling, gravel is fine to coarse grained.
- **Extremely Weathered Siltstone:** >2 m. Clayey gravel, fine to coarse grained, white with orange mottle, clay is low plasticity.

Generally groundwater was observed to be at the surface in most test pit locations and soils were found to be acidic (Coffey 2007). The nature of this area is reflected in the dominance of alluvial soils, with less stable, waterlogged soils occurring on the alluvial plains and low-lying areas.

## 4.2 TOPOGRAPHY

The topography of the proposed modification area is gently sloping, located between two low ridges. Gentle slopes, open depressions, flats and ridges (refer to Speight 1990) are present across the broader Glades Estate Project Area (refer to *Figure 4.1*). The ridges are a maximum of 15 metres above sea level and are surrounded by gentle slopes that border flats along Moonee Creek and Skinners Creek.

## 4.3 WATER AVAILABILITY

Moonee Creek and Skinners Creek bound the Glades Estate Project Area in the east and north respectively and are the major watercourses in the local area. Both creeks are tidal and fresh water may have been obtained from Skinners Creek during periods of high rainfall only. Moonee Creek would have provided a range of estuarine food resources. Prior to draining of the area, freshwater may also have been available in low lying areas to the south of the proposed modification area.

## 4.4 PAST LAND USES AND DISTURBANCES

Past land use and associated disturbances impact upon the archaeological record in terms of both the presence or absence of cultural materials and the integrity of any remaining deposits.

As reported by ERM (2007) and Collins (1974), the majority of the broader Glades Estate Project Area has been significantly impacted by vegetation clearance and historical logging. This has involved the removal of mature trees and associated undergrowth and has resulted in significant disturbance within the upper soil unit (refer to *Photograph 4.1*). The felling and removal of large trees would have caused the exposure and dispersal of upper soil deposits in the clearance areas and the potential relocation of any artefacts that may have been present.

The proposed modification area now forms a small patch of regenerating vegetation in the centre of the Glades Estate Project Area. The historic felling and removal of large trees is clearly evident (refer to *Photographs 4.2 to 4.4*) and has resulted in significant disturbance within the upper soil unit and impact damage to the trees that have been retained. A vehicle access track crosses the proposed modification area and cattle grazing occurs across the entire Glades Estate Project Area, both of which typically increases rates of erosion (refer to *Photographs 4.5 and 4.6*).



*Photograph 4.1 Cleared pasture within the Glades Estate Project Area with the proposed vegetated modification area in the background.*



*Photograph 4.2 Evidence of vegetation clearing and a clear dominance of regenerating trees (not of an age to bear cultural scars) .*



*Photograph 4.3 Evidence that large trees have been felled and cleared from the proposed modification area.*



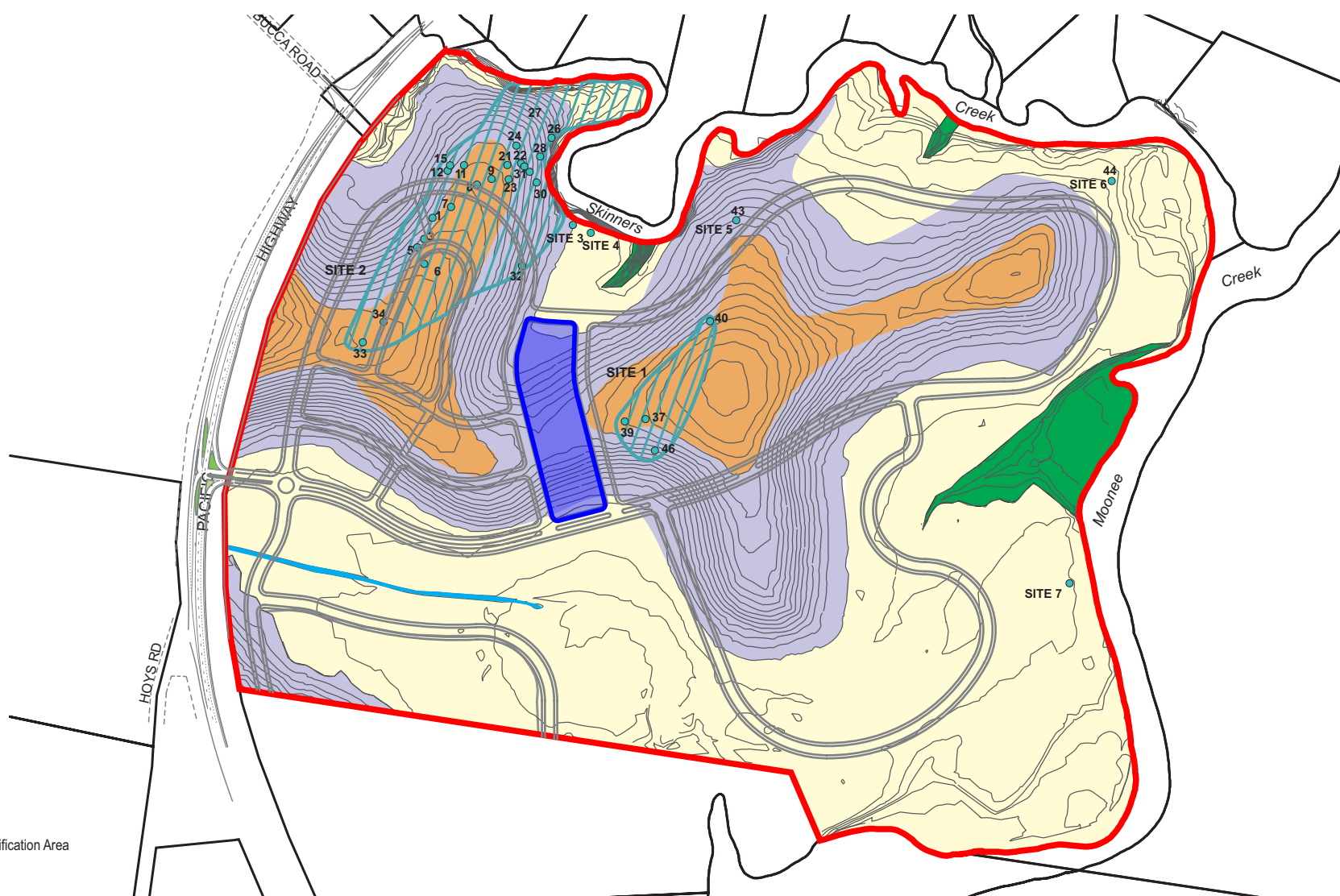
*Photograph 4.4 Evidence of vegetation clearing and disturbance of the topsoil layer.*



*Photograph 4.5 Erosion noted immediately west of the Proposed modification area.*



*Photograph 4.6 Vehicle track running east west through the centre of the Proposed modification area.*



- Legend**
- Site Boundary
  - Proposed Modification Area
  - Ridge
  - Gentle Slopes
  - Open Depression (natural)
  - Open Depression (artificial)
  - Flats
  - 39  Identified Site (ERM 2007 and Collin 1994)
  - Identified Site (ERM 2007 and Collin 1994)

**Source:**  
Auspacific Engineers, November 2006.

Recorded Heritage Sites and Associated Landforms			4.1
Drawing No: 0446641s_HDDA_C002_R0.cdr	Glades Estate Moonee		
Date: 13/02/2018	Drawing size: A4	Heritage Due Diligence Assessment	
Drawn by: GC	Reviewed by: JP	Client: Winten Property Group	
<div style="display: flex; align-items: center;"> <div style="margin-right: 10px;">0 50 100m</div> <div style="text-align: center;"> <div style="border: 1px solid black; width: 10px; height: 10px; margin: 0 auto;"></div> <div style="font-size: 8px; margin: 2px 0;">N</div> <div style="border-top: 1px solid black; width: 10px; margin: 0 auto;"></div> </div> </div>	This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.		



A review of the environmental context of the Glades Estate Project Area demonstrates that the proposed modification area contains (and would have contained in the past) a range of resources that were used by Aboriginal people. Fresh water would have been available in the low-lying areas to the south of the proposed modification area and may have been obtained from Skinners Creek during periods of high rainfall. Both Skinners and Moonee Creek would have provided a range of estuarine food resources.

The vegetation communities within the Glades Estate Project Area would also have contained plants suitable for consumption and other uses and would have supported a variety of animal species. A number of types of stone present in the local area are also suitable for the manufacture of stone artefacts. The disturbances to the broader Glades Estate Project Area including the proposed modification area from historic land use have impacted the archaeological record.

The Glades Estate is situated in a region rich in Aboriginal cultural heritage. Numerous archaeological sites have been recorded within the Glades Estate Project Area and in the surrounding areas. These sites are of particular value to the local Aboriginal community as well as to the broader community (ERM 2007).

The following information provides the context in which Aboriginal cultural heritage in the proposed modification area can be understood. It includes a review of early historic records relating to Aboriginal people within the region.

### 5.1

#### *ETHNOHISTORIC CONTEXT*

As reported by ERM (2007) early historic records provide information about the Coffs Harbour region during the period of early European settlement. These records include ethnohistoric accounts that can be used to obtain information about the way in which Aboriginal people in the area lived at the time of early European contact and may be used to make inferences regarding the pre-contact period.

Ethnohistoric records indicate that the Coffs Harbour region was part of the territory of the Kumbaingiri or Gumbaynggir language group. The Gumbaynggir lands extended south-east from the lower Nymboida River to Urunga and Bellingen, along the coast from Nambucca Heads to Woolgoolga and inland to South Grafton (Tindale 1974). Populations were comparatively dense on the coast, with reference made to gatherings of up to 500 men (Bellshaw 1978:72). Inland riverine and 'rainforest' areas were reportedly less densely occupied due to lower resource availability (Bellshaw 1978:74). Ethnohistoric records describe a population already significantly affected by the introduction of European diseases and therefore population estimates are likely to considerably under represent the numbers of Aboriginal people in the region prior to 1788 (Butlin 1982).

There were quite a number of Aboriginals camping in the Moonee area during early European settlement, where they had built shelters near the sand dunes on the north end of Moonee Beach. Their main camps were back towards the hills. One camp was near where the Coffs Harbour Gun Club is now (2 km north of the Glades Estate Project Area), which is typical of the low hills and slopes used for main camps. Many other sites are known in the Moonee Creek area. Soon after the settlement of Moonee, the Aboriginals slowly began fading out of the area, and by the 1890's stopped returning altogether, except for the odd short stay of two or three families at various times (Thomas 2013).

As reported by ERM (2007), ethnohistoric accounts describe the use of a broad variety of animal resources including kangaroo, possum, snake, lizard, a variety of birds, echidna, flying foxes, fish (marine, estuarine and saltwater species) and shellfish. Plants were also used for food and medical purposes and as a source of raw materials for the manufacture of items such as string, fishing line, canoes, shelters, weapons and storage implements (Ryan 1964:142-147). Stone artefacts are occasionally mentioned in the early accounts and early explorer Dawson referred to the use of stone artefacts in the pre-contact period as follows:

*With such inefficient implements as stone tomahawks, flint knives, shell scrapers and pointed sticks, imagine the infinite patience required to cut most of their living out of hardwood trees and logs, to strip bark for their shelters, and to shape and fashion their weapons of war and for the chase.*

Dawson (in Ryan 1964:162)

Thomas (2013) presents an Aboriginal history of the Coffs Harbour region and notes that the Gumbaynggirr people had it 'pretty good' around the Moonee area. During the winter months huge schools of sea mullet moved along the coast. Sharks drove them close to the shore where they were easily speared by men and boys. Pipis in countless thousands could be found in the sand of the beaches, while along the rocky headlands many kinds of shellfish could be obtained easily by good swimmers (Dawn and New Dawn magazine 1952-1975, cited in Thomas 2013).

Kangaroos, pademelons and wallabies were easily trapped by being driven into the triangle formed by the creek and the surf. At high tide Moonee Creek presented a long swim for those animals which tried to escape by swimming across. While a few youths patrolled the far side of the creek, any animals which attempted to escape by swimming could be cut off and killed while still in deep water as their swimming movements were slow. The animals were driven into the stream near the entrance of the creek where they were killed and a good supply of food obtained (Dawn and New Dawn magazine 1952-1975, cited in Thomas 2013).

In the sandy soils along the bank of the creek, a number of corkwood trees attracted large numbers of pigeons in the autumn when the berries were ripe. By waiting beneath the low branching trees the hunters were able to kill the pigeons as they fed a few feet above them. The seed pods of the mangrove trees also provided much food in the winter-spring period. These cotyledons were cooked in a pit in which stones had been heated. The berries were covered with bark and soil and after half an hour or so they were ready to eat. In lesser quantities were lillipillies, pigface, strawberries, and the native plum (Dawn and New Dawn magazine 1952-1975, cited in Thomas 2013).

## 5.2

### LOCAL ARCHAEOLOGICAL CONTEXT & PROJECT AREA

A number of archaeological investigations have been undertaken in the local Moonee Beach area. The results of these investigations provide an indication of the range, nature and distribution of archaeological sites within the local area and therefore provide essential background information for the present study. The Project Area, including the proposed modification area has also been previously assessed in its entirety by Collins (1994b) and ERM (2007). Appleton (2003) also undertook targeted investigations within the Project Area.

### 5.2.1

#### OEH AHIMS Register

Aboriginal heritage sites recorded in NSW are generally reported to the OEH and registered on the AHIMS database. An updated search of the AHIMS database on 2 February 2018 revealed that 79 sites have been recorded within 6km of the centre of the proposed modification area (refer to *Table 5.1*, *Figure 5.1* and *Annex A*).

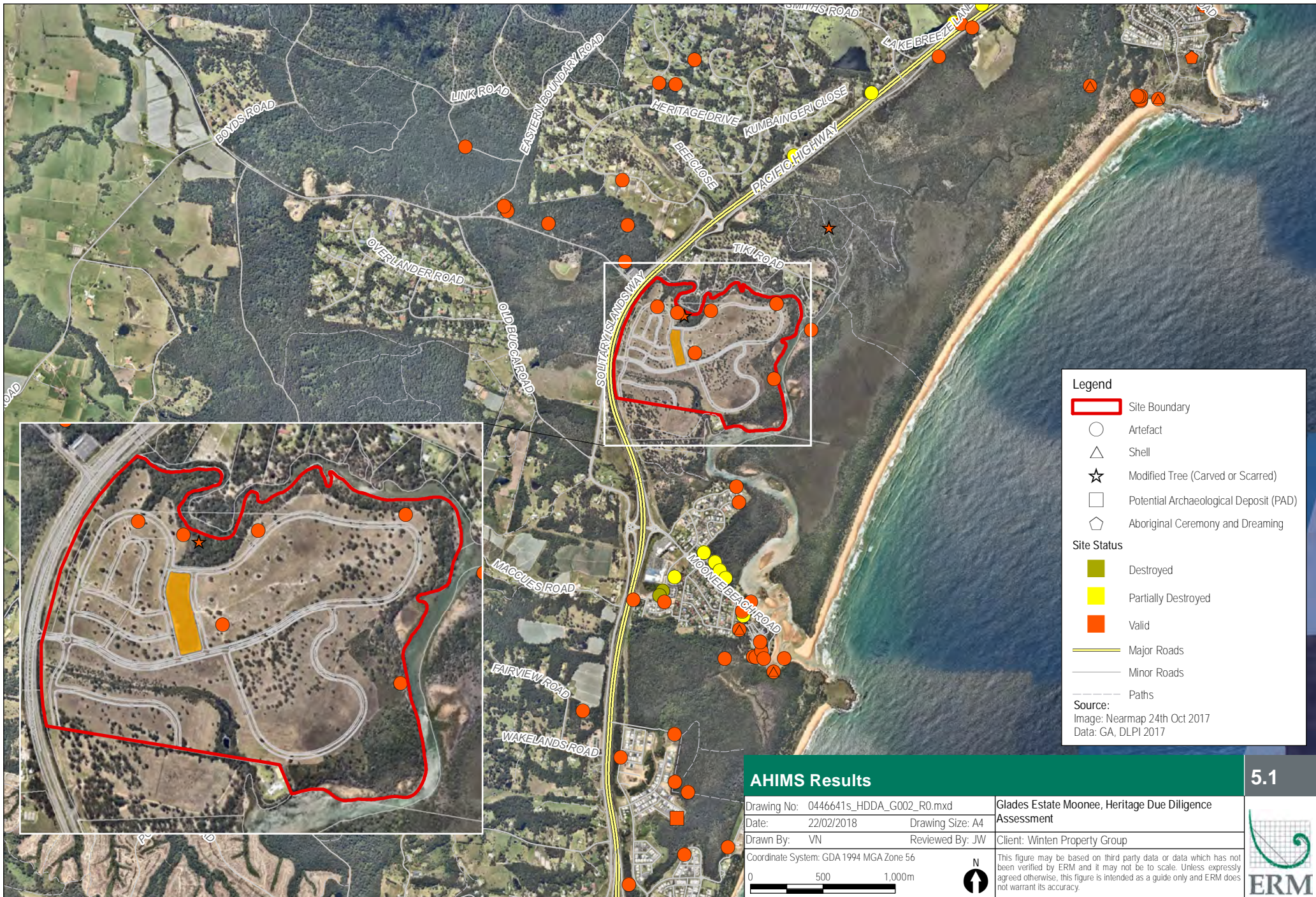
**Table 5.1** AHIMS Registered Sites

Site feature	Number of sites	Percentage
Aboriginal ceremony and dreaming	1	1.5%
Artefact	32	40%
Artefact (Aboriginal Resource and Gathering)	2	3%
Artefact (Open Camp Site)	8	10%
Art (Pigment or Engraved)	1	1.5%
Burial	3	4%
Isolated Find	15	18%
Midden	9	12%
Modified Tree (Carved or Scarred)	2	3%
PAD (potential archaeological deposit)	6	8%
<b>Total</b>	<b>79</b>	<b>100%</b>

*Source: AHIMS Extensive Search (ID: 325684) for the following area at Lat, Long From: -30.2355, 153.098 - Lat, Long To : -30.1645, 153.2106. Search date 2/02/2018*

It is noted that sites, as reported in *Table 5.1* above, may include several different features. 'Artefact', for example, refers to the presence of artefactual material and may include stone, bone, ceramic, metal or shell artefacts. However, sites listed with this feature are typically stone artefact scatters or isolated artefacts.

Artefact scatters and isolated artefacts are the most common site type in the area and are typically located in close proximity to drainage lines and creeks and are clustered near the mouth of Moonee Creek (refer to *Figure 5.1*).



**Legend**

- Site Boundary
- Artefact
- Shell
- Modified Tree (Carved or Scarred)
- Potential Archaeological Deposit (PAD)
- Aboriginal Ceremony and Dreaming

**Site Status**

- Destroyed
- Partially Destroyed
- Valid

Major Roads  
 Minor Roads  
 Paths

**Source:**  
 Image: Nearmap 24th Oct 2017  
 Data: GA, DLPI 2017

AHIMS Results		5.1
Drawing No: 0446641s_HDDA_G002_R0.mxd	Glades Estate Moonee, Heritage Due Diligence Assessment	
Date: 22/02/2018	Drawing Size: A4	
Drawn By: VN	Reviewed By: JW	
Client: Winten Property Group		
Coordinate System: GDA 1994 MGA Zone 56		
This figure may be based on third party data or data which has not been verified by ERM and it may not be to scale. Unless expressly agreed otherwise, this figure is intended as a guide only and ERM does not warrant its accuracy.		

### 5.2.2 *Heritage Register Listings*

As of the 6 February 2018 there were no Aboriginal sites within the proposed modification area listed on the State Heritage Register, State Heritage Inventory or Coffs Harbour Council Local Environmental Plan 2013.

### 5.3 *PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS*

A number of archaeological investigations have been conducted in the Moonee Beach area over the last twenty years. The available studies give a broad picture of the wider cultural landscape and the site types, frequencies and distribution patterns that have contributed to the current understanding of the archaeological record in the region. The findings from these investigations echo those of the regional studies and define the archaeological context of the broader Glades Estate Project Area. The most relevant of these reports are summarised in *Table 5.2*.

**Table 5.2 Summary of Previous Archaeological Investigations within the Project Area and Moonee Beach area**

Author of Report	Relation to Project Area	Details of sites recorded/recommendations
Collins (1994b)	<p>Extensive survey within the Glades Estate Project Area. Survey transects also traversed the proposed modification area.</p> <p><u>No sites or areas of sensitivity were recorded within the proposed modification area</u></p>	<p>The Glades Estate Project Area, including the proposed modification area has been previously assessed in its entirety by Collins (1994b) and ERM (2007). Collins' (1994b) study was conducted when the Glades Estate Project Area was heavily vegetated and focussed on areas of exposure, namely logging tracks and dumps. Seven sites were recorded within the Glades Estate and are listed in <i>Table 5.3</i>. Despite numerous, extensive surveys, no sites have been recorded within the proposed modification area.</p> <p>The sites recorded by Collins were concentrated on the northerly slope above Skinners Creek and on the banks of Skinners Creek and Moonee Creek. Collins (1994b:26) argued that this was not a factor of the survey strategy as all landform units were surveyed (including the proposed modification area) and visibility was greater than 30 percent on the ridge and southerly slopes. She therefore proposed that Aboriginal people focussed their activities along Skinners Creek.</p> <p>The artefacts were all made of locally available raw materials and a comparatively high proportion of cores and cortex-bearing artefacts were present. Collins (1994b:26) therefore suggested that raw materials were plentiful and that primary manufacture of artefacts occurred on site. However, none of the sites were extensive or concentrated and it was suggested that the occupation of the area may have been on an itinerant basis and focussed on the area surrounding Site 2 (refer to <i>Figure 4.1</i>).</p> <p>Collins (1994b:16) also noted that whilst the Aboriginal community did not feel that the Glades Estate Project Area had any particular significance, it is known as a traditional travel route. Bucca Road was described as part of 'a traditional Dreaming route connecting with the Kangaroo Flat area further northwest, and that Aborigines from inland areas used this route to travel to Look-At-Me-Now Headland for seafood.' (Collins 1994b:16).</p> <p><u>Despite extensive surveys, no sites or areas of sensitivity were recorded within the proposed modification area.</u></p>

Author of Report	Relation to Project Area	Details of sites recorded/recommendations
Appleton (2003)	<p>Survey within the Glades Estate Project Area.</p> <p><u>No sites or areas of sensitivity were reported within the proposed modification area</u></p>	<p>Appleton (2003) conducted a re-investigation of Site 2 previously recorded by Collins (1994b) overlooking Skinners Creek. With the exception of an area of remnant vegetation, Site 2 had been cleared and the ground surface had been graded or 'levelled' resulting in the removal of part of the upper soil horizon and significant disturbance to the archaeological material visible on the surface (Appleton 2003:7). Five artefacts were found in four separate exposures within the ridge and slopes in which Site 2 was originally recorded. Appleton (2003) argued that the artefacts identified during the survey were in a disturbed context and that it was unlikely that test excavations would result in the recovery of significant numbers of artefacts. He defined an area of archaeological sensitivity surrounding Site 2 to include the area of remnant vegetation along Skinners Creek and a portion of the ridge and slope to the west of the remnant vegetation.</p> <p><u>No sites or areas of sensitivity were reported within the proposed modification area.</u></p>
ERM (2007)	<p>Extensive survey within the Glades Estate Project Area. Survey transects also traversed the proposed modification area.</p> <p><u>No sites or areas of sensitivity were recorded within the proposed modification area</u></p>	<p>Seven sites were recorded by ERM 2007 (one scarred tree, four artefact scatters and two isolated finds) and all were concluded to have been previously recorded by Collins 1994b. The most common artefact raw material recorded by ERM was mudstone, followed by coarse grained igneous stone. Siltstone and quartzite were also present in the assemblage. The most common artefact types recorded were flakes and broken flakes with some retouched artefacts present. In addition to the surface evidence four areas of PAD and one area of cultural sensitivity were identified on the northern and north-eastern margins of the Glades Estate project area.</p> <p>It was recommended that where possible all impacts to sites, PADs and the area of cultural sensitivity recorded during the survey be avoided especially where remnant vegetation remained. It was further recommended that all sites outside the impact footprint should be protected during construction and the two sites with surface evidence inside the impact area undergo surface collection by an archaeologist and the Aboriginal stakeholders prior to construction.</p> <p><u>No sites or areas of sensitivity were recorded within the proposed modification area.</u></p>
Byrne (1987) <i>(cited in Collins 1194b and Collins 2007)</i>	<p>North and north west of the Glades Estate Project Area</p> <p>No sites recorded within landforms (gently sloping and alluvial plains)</p>	<p>Byrne (1987) assessed a large land parcel that extends west across the highway from the Moonee Creek estuary to encompass low-lying alluvial plains and bedrock-soil knolls and spurs. The field inspection focussed on the bank of Moonee Creek and the more elevated landforms. A scatter of stone artefacts was detected on a level spur crest. Various sections of Byrne's (1987) study area were later inspected in more detail, resulting in the recording of a scarred swamp mahogany tree (#22-1-053) near Moonee Creek (Navin 1991), a small artefact scatter (#22-1-071) on the bank of Skinners Creek, an isolated artefact on a minor spur, and two larger scatters (#22-1-069 and #22-1-070) on the crest of a more substantial spur (Collins 1994a,1995). The survey areas were dominated by alluvial plains, but no archaeological evidence was found in such a context.</p>

Author of Report	Relation to Project Area	Details of sites recorded/recommendations
Collins (1994a)	North west of the Glades Estate Project Area	<p>Proposed rural residential subdivision at Moonee, N.S.W. North Coast</p> <p>This survey involved the assessment of a 10 per cent sample of a proposed rural residential subdivision of a 156 hectare development area located on the northern side of Skinners Creek (to the north west of the proposed modification area). Four sites were located in the study area and consisted of one isolated find and three artefact scatters. The two larger artefact scatters (35 and 15 artefacts) may be a continuous site and were located on a ridgeline that passes from the coastal lowlands to the inland ranges and is approximately 150 metres from the nearest permanent creek. As there were no notable resources within the study area, Collins (1994a:27) suggested that the recorded sites represent transitory and itinerant use of the area.</p>
Collins (2002)	Western boundary of the Glades Estate Project Area	<p>Coffs Harbour Highway Planning Sapphire to Woolgoolga Aboriginal Heritage Assessment</p> <p>This study involved the assessment of four options for the proposed upgrade to the Pacific Highway, adjacent to the Glades Estate Project Area. Four artefact scatters were identified in close proximity to the study area. All were situated in elevated locations and contained artefacts composed of chert, siltstone and greywacke. Collins (2002:14) also reported that Yellow Waterholes is an unmodified women's site linked to other women's sites within the area and is a significant cultural site for local Aboriginal people.</p>
Collins (2007)	Western boundary of the Glades Estate Project Area	<p>Woolgoolga to Sapphire Highway Upgrade</p> <p>This study identified seven archaeological sites and eight areas of potential archaeological deposit (PADs). The confirmed sites comprise four scatters of stone artefacts (S2W-2, 4, 7 and 12) and three isolated artefact finds (S2W-3, 5 and 6). The study also identified a potential historic Burial near Moonee (Portion 41) which is outside of the Glades Estate Project Area. Whilst the overall sample (number) of recorded sites was small the results provide an indication of the types of sites which would be expected within the landscape: open stone artefact scatters and open campsites on elevated landform.</p>

Author of Report	Relation to Project Area	Details of sites recorded/recommendations
Myall Coast Archaeological Services (2013)	Immediately south of the Glades Estate Project Area.	<p>Aboriginal Heritage and Archaeological Assessment Lot 1 DP 1097743 and Lot 6 DP 252223 Pacific Highway, Moonee Beach.</p> <p>This study included a site inspection with representative from the LALC, Yarra group and Garby Elders, An artefact scatter (n~4) was identified on the gravel driveway. The site had been levelled and appeared to have been used in the past as a log dump for timber getting. The artefacts were located within in a very disturbed context. There was very little topsoil, if any at all and the underlying soil composition appeared to be bedrock. The fact that the artefacts were in a context of spread gravel it is likely that the artefacts were imported with the gravel form a quarry on Bucca Road some 2km to the west. An examination of that quarry indicates that it overlooks the headwaters of Skinners Creek and the landform indicates probable extensive Aboriginal Occupation.</p> <p>No in situ evidence of Aboriginal occupation was recorded and no potential for subsurface deposits was identified This assessment does however highlight that local Aboriginal heritage is centred on Moonee Creek, its tributaries particularly the confluence with Skinners Creek and more importantly Yellow Waterholes.; a substantial occupation area for Aboriginal people.</p>
Navin (1991)	North of the Glades Estate Project Area	<p>An archaeological survey of a proposed development area at Moonee, north of Coffs Harbour, New South Wales</p> <p>This assessment of 90 hectares of land approximately 350 metres north of the Glades Estate Project Area and extending along Moonee Creek included land previously surveyed by Piper (1986). Tony Perkins of the CHDLALC reported at the time that he was not aware of any significant sites in the study area, but acknowledged the importance of the Look At Me Now Headland. A scarred tree was identified within an area of mixed regrowth and old forest. The tree is a swamp mahogany with a large (220 centimetres by 140 centimetres) sub-oval scar. The site was assigned high social and scientific significance and it was recommended that the tree be retained within a 50 metre buffer zone.</p>
Piper (1986)	West of the Glades Estate Project Area	<p>An archaeological survey for Aboriginal sites and relics in the Moonee Beach area, Coffs Harbour, NSW</p> <p>This assessment focussed on two areas, which Piper refers to as Site 2 and Site 5A. Site 2 is located to the north-east of the proposed modification area within the stabilised dune band that includes a large pond and is subject to regular flooding. Site 5A is situated directly opposite the study area on the western side of the Pacific Highway. This area is named 'Yellow Waterholes' and consists of a swamp formation surrounded by gentle slopes. No artefacts were present at either location.</p>

Author of Report	Relation to Project Area	Details of sites recorded/recommendations
Umwelt (2006)	North of the Glades Estate Project Area	<p>Aboriginal and Archaeological Survey and Assessment of Lot 66 DP 551005, Moonee Beach, NSW</p> <p>Moonee Creek, which is situated just north of the Glades Estate Project Area forms a geographic boundary between the traditional land of the Gumbalar Julipi Elders and the Garby Elders to the north of the creek. Both ethno-historic records and the present Elders relay stories of periods when people would travel north and south through this general area. The proximity of the Glades Estate Project Area to a social boundary and the available resources could indicate it was used as a temporary camp area for groups travelling across the boundary to ceremonies, such as corroborees.</p> <p>During the survey, two new sites (artefact scatter n~2 and a PAD) was identified and two other sites - assessed as being extensions of previously recorded sites (NPWS # 22-1-0051 and NPWS #22-1-0198) were recorded.</p>

**Table 5.3 Sites recorded within the Glades Estate Project Area**

Site name	AHIMS No.	Location (centre point) refer to Figure 4.1	Site type	Landform unit	Description	Additional Comments
Site 1	22-1-0299	514573 6659660	Artefact scatter	Simple slope and central ridge.	ERM recorded nine artefacts on the central ridge and identified this site as a continuation of Site 1 (isolated artefact) recorded by Collins (1974b). The site has been disturbed by the clearance of vegetation, use of the vehicle tracks and erosion. Visibility within the exposure was high at 50 % and it is unlikely that substantial quantities of additional artefacts are present at this site.	Located 60m east of the proposed modification area, over-looking Skinners Creek to the north. This site is located on the central ridge on a slightly higher elevation than the proposed modification area.  This site will be subject to surface collection as per the approved project design. No additional impacts would occur as a result of the proposed modification.
Site 2	22-1-0072	514314 6659977	Artefact scatter	Ridge, gentle slopes, flats	Site 2 consists of a low density artefact scatter (n~36) surrounding an area of remnant vegetation along a ridge and adjoining slope and flats leading to the creek. Vegetation clearance and associated heavy machinery activity has caused significant disturbance, resulting in the exposure of the upper soil unit. The artefacts in Site 2 are disturbed and have been moved both laterally and horizontally. However, the area of remnant vegetation has not undergone significant disturbance and potentially contains further archaeological deposits.	Located 60m west of the proposed modification area, extending towards Skinners Creek to the north. Again, this site is located on the central ridge on a slightly higher elevation than the proposed modification area.  This site will be subject to surface collection as per the approved project design. No additional impacts would occur as a result of the proposed modification.

Site name	AHIMS No.	Location (centre point) refer to Figure 4.1	Site type	Landform unit	Description	Additional Comments
Site 3		514500 6659990	Isolated artefact	Creek flat	Siltstone 'pebble piece' recorded by Collins (1974b). This site was not located by ERM (2007).	Located 130m north of the proposed modification area and associated with Skinners Creek.  This site will not be impacted by the approved project design. No additional impacts would occur as a result of the proposed modification.
Site 4	22-1-0073	514520 6659980	Scarred trees	Creek flat	Two blackbutt trees with scars of 'potential Aboriginal origin' recorded by Collins (1974b). This site was not located by ERM (2007).	Located 115 m north of the proposed modification area and associated with Skinners Creek.  This site will not be impacted by the approved project design. No additional impacts would occur as a result of the proposed modification.
Site 5	22-1-0074	514682 6659949	Artefact scatter	Gentle slope	4 artefacts (siltstone) recorded by Collins (1974b). A single artefact was recorded at this location by ERM (2007) on a gentle slope overlooking Skinners Creek. Minor erosion due to disturbance associated with vegetation clearance and vehicle activity has resulted in the exposure of the upper soil horizon. This area is considered to have the potential to contain archaeological deposits.	Located 200 m north east of the proposed modification area.  This site will be subject to surface collection as per the approved project design. No additional impacts would occur as a result of the proposed modification.

Site name	AHIMS No.	Location (centre point) refer to Figure 4.1	Site type	Landform unit	Description	Additional Comments
Site 6	22-1-0294	515180 6660008	Artefact scatter	Creek flat	7 artefacts (flakes, flaked piece, core and 'micro-debitage' of siltstone) recorded by Collins (1974b) on the creek flat near the junction of Skinners Creek and Moonee Creek. ERM (2007) recorded two artefacts in an exposure associated with a vehicle track on the creek flat. It is likely that further archaeological deposits will be present, hence this site is considered to have high archaeological potential.	Located 730 m north east of the proposed modification area near the junction of Skinners Creek and Moonee Creek.  This site will not be impacted by the approved project design. No additional impacts would occur as a result of the proposed modification.
Site 7	22-1-0075	515120 6659480	Isolated artefact	Creek flat	Greywacke 'pebble core tool' recorded by Collins (1974b). This site was not located by ERM (2007).	Located 600 m east of the proposed modification area and associated with Moonee Creek.  This site will not be impacted by the approved project design. No additional impacts would occur as a result of the proposed modification.

### 5.3.1

#### *Implications for the Proposed Modification Area - Predictive Model*

It is important to note that the level of archaeological potential relates to the likelihood of discovering an Aboriginal object or site, within a location. Further description should then be made as to the potential condition and integrity of the soil matrix and potential site itself. Only once all these factors have been considered, can scientific value start to be assessed for an area with potential. Therefore, whilst scientific value and potential are linked, it must be noted that these values and potentials are not the same and can differ substantially for any single site or area with potential.

Areas with archaeological potential were assessed according to the definitions in *Table 5.4*. Due to the scope for variation that comes with human choice, it cannot be assumed that all areas of predicted sensitivity will contain a high density of archaeological sites, or for that matter, any sites at all. Archaeological models predict 'typical' site locations and apply only to those sites that are representative in terms of their environmental setting.

**Table 5.4** *Definitions of Archaeological Potential*

Rank	Definition	Example
Very Low potential	Artefacts are very unlikely to occur in situ.	Eroded landforms, reconstructed landscapes, hazardous landscape, developed areas.
Low potential	Artefacts are not normally found in comparable contexts but could occur in low densities making detection unlikely.	Landforms with no specific focus for use, i.e. areas not associated with or in proximity to water sources.
Moderate potential	Artefacts are known to occur in comparable landforms in detectable densities (~1artefact/m <sup>2</sup> ) and there is an unknown possibility for detection.	Landforms with an environmental focus which may have seen seasonal visitation.
High potential	Artefacts are consistently found in comparable landforms or similar environmental contexts and thus will certainly be found in any ground breaking works.	Landforms with known environmental focus encouraging repeat visitation to specific locale, i.e. margins of swamp or near high order creeks.

Proximity to a permanent water supply and landform are the primary factors appearing to determine the location of Aboriginal campsites within the region. Scar trees can occur anywhere that trees of a suitable age remain.

*Table 5.5* below provides predictive statements based on the extensive studies already undertaken within the Glades Estate Project Area (including the proposed modification area), background research and the AHIMS data. Stone artefact scatters are likely to be concentrated on the slopes above Skinners Creek and the banks of Skinners Creek and Moonee Creek and not within the proposed modification area. Scarred trees may be present although few trees of suitable age to bear cultural scars are likely to remain based on previous land clearing activities.

**Table 5.5 Landforms in which Site Types Usually Occur**

Site Types	Landform in which this Site Type is Usually Found	Assessment	Potential
Artefact Scatters	<p>Stone artefact concentrations are collections of stone, frequently brought from other areas, which demonstrate evidence for Aboriginal working, use and/or discard of the stone at a single location. These sites may be found in any landforms particularly in association with hillslopes and water courses.</p> <p>This site type may be within several hundred metres of water, either on the low hill slopes / toe slopes, on terraces of the Richmond River or on low spurs leading down to water, with the highest concentrations occurring near the confluences.</p> <p>These sites are likely to have been impacted by European agricultural practices as landforms favoured for prehistoric occupation were also often favoured for the European occupation or agriculture.</p>	Artefact scatters have been recorded within the broader Glades Estate Project Area, on northerly slope above Skinners Creek and on the banks of Skinners Creek and Moonee Creek. Evidence to date suggests that Aboriginal people focussed their activities along Skinners Creek and artefact scatters are unlikely to be found within gentle slope and low lying areas of the proposed modification area.	Low
Isolated finds	<p>Sites consisting of only one identified stone artefact, isolated from any other artefacts or archaeological evidence. They are generally indicative of sporadic past Aboriginal use of a location.</p> <p>A distinction should be drawn between isolated finds which are a component of the background distribution and objects such as axes, hammer stones, grinding dishes, etc which would have been used repeatedly.</p>	Isolated finds may occur anywhere, especially in disturbed locations near water sources or on travel routes. They are known to occur in comparable landforms and there is an unknown possibility for detection.	Moderate
Scarred trees	Scarred trees bear the marks of bark and wood removal for utilisation as canoes, shields, boomerangs or containers. It is commonly very difficult to confidently distinguish between Aboriginal scars and natural scars or those made by Europeans. Scars may also originate as 'foot-marks', small pockets cut into the bark of a tree enabling the tree to be climbed.	Regenerating vegetation is present within the proposed modification area although previous land clearing activities reduce the likelihood that trees of sufficient age to bear cultural scars of Aboriginal origin may be located.	Low

Site Types	Landform in which this Site Type is Usually Found	Assessment	Potential
Grinding grooves	Grooves resulting from the grinding of stone axes or other implements are found on flat areas of suitable sandstone. They are often located near waterholes or creek beds as water is necessary in the sharpening process. In areas where suitable outcrops of rock were not available, transportable pieces of sandstone were used.	Grinding grooves may be present, although picking up the small exposed bedrock that may be used for grinding grooves is difficult at the desktop level and no outcrops were observed during the site inspection.	Low
Stone arrangements, and ceremonial grounds	<p>These site types are often interrelated. Stone arrangements vary from simple cairns or piles of rocks to more elaborate arrangements; patterns of stone laid out to form circles and other designs, or standing slabs of rock held upright by stones around the base.</p> <p>Carved trees may have intricate geometric or linear patterns or representations of animals carved into their trunks. Ceremonial grounds and graves were often marked by such trees.</p> <p>Bora grounds are a common type of ceremonial site and they are generally associated with initiation ceremonies. They comprise two circles, generally edged with low banks of earth but sometimes of stone, a short distance apart and connected by a path.</p> <p>Bora grounds were generally situated near a camping ground large enough to accommodate all the tribes invited, and close to a river, creek or lagoon to provide sufficient water and food for all those attending the ceremonies (OEH 2013).</p>	No evidence to support the existence of a ceremonial site has been found despite extensive surveys and reported consultation already undertaken in 1994, 2003 and 2007.	Low
Middens	Middens predominantly consist of accumulations of shell that represent the exploitation and consumption of shellfish by Aboriginal people. Shell species may be marine, estuarine or freshwater depending on the environmental context. Middens frequently also include faunal remains, stone artefacts, hearths and charcoal.	Shell middens are known to occur within alluvial plains although if they do occur, they are likely to be closer to the estuary of Moonee Creek.	Low

Site Types	Landform in which this Site Type is Usually Found	Assessment	Potential
Quarries	These are areas where stone was obtained for flaked artefacts or ground-edge artefacts, or where ochre was obtained for rock paintings, body decoration or decorating wooden artefacts.	Quarries are only located where appropriate stone or ochre resources are present although modelling for these resources is difficult at the desktop level and no evidence was observed during the site inspection.	Low
Burial sites	Burials may be of isolated individuals, or they may form complex burial grounds. Often associated with other site types such as middens, or mounds.	These sites are not expected to be found in the Project Area although they cannot be discounted.	Low
Art sites	Aboriginal paintings, drawings and stencils are commonly to be found where suitable surfaces occur in sandstone shelters and overhangs. These sites are often referred to as rock shelters with painted art.  Rock engravings, carvings or peckings are also to be found on sandstone surfaces both in the open and in shelters. These are referred to as rock engraving sites.	It is unlikely that the Project area contains suitable rock platforms or shelters.	Very Low
Shelter sites	Sandstone shelters and overhangs were used by Aboriginal people to provide habitation areas sheltered from the rain and sun. The deposits in such sites are commonly very important because they often contain clearly stratified material in a good state of preservation.  The geomorphology of the New England Region to the west of the Project area lends itself to the occurrence of rock shelters along deeply incised gullies or near creek lines where sandstone is exposed.	The alluvial (floodplain) landform and gentle slopes are very unlikely to contain any rock shelters, overhangs or gullies.	Very Low

The due diligence site inspection was undertaken on Wednesday 6 February 2018 and was considered appropriate to the proposed modification area. The results are believed to be generally representative of the archaeological record in the Glades Estate Project Area based on extensive surveys already undertaken.

The conditions encountered in the proposed modification area during the site inspection resulted in limited ground surface visibility due to leaf litter, which defined the opportunistic nature of the survey. Observations were recorded using digital photography, GPS recording, as well as field notes. In accordance with OEH guidelines, photographic recording was undertaken of landforms, Aboriginal cultural material, areas of archaeological or cultural sensitivity, levels of disturbance, as well as other areas/items of interest.

The ground surface visibility was very poor to poor over most of the survey area (refer to *Table 6.1*). Where the ground surface was visible, it was in the form of vehicle tracks and erosion associated with the existing use of the Project Area for cattle grazing.

**Table 6.1** *Ground Surface Visibility Rating*

	Description	GSV Rating %
<b>Very Poor</b>	Heavy vegetation, scrub foliage or debris cover, dense tree or scrub cover. Soil surface of the ground very difficult to see.	0-9%
<b>Poor</b>	Moderate level of vegetation, scrub, and / or tree cover. Some small patches of soil surface visible in the form of animal tracks, erosion, scalds, blow outs etc., in isolated patches. Soil surface visible in random patches.	10-29%
<b>Fair</b>	Moderate levels of vegetation, scrub and / or tree cover. Moderate sized patches of soil surface visible, possibly associated with animal, stock tracks, unsealed walking tracks, erosion, blow outs, etc. Soil surface visible as moderate to small patches across a larger section of the Project area.	30-49%
<b>Good</b>	Moderate to low level of vegetation, tree or scrub cover. Greater amount of areas of soil surface visible in the form of erosion, scalds, blow outs, recent ploughing, grading or clearing.	50-59%
<b>Very Good</b>	Low levels of vegetation / scrub cover. Higher incidence of soil surface visible due to recent or past land-use practices such as ploughing, grading, mining, etc.	60-79%
<b>Excellent</b>	Very low to non-existent levels of vegetation/scrub cover. High incidence of soil surface visible due to past or recent land use practices, such as ploughing, grading, mining, etc.	80-100%

The site inspection traversed the proposed modification area and no evidence of Aboriginal heritage sites were recorded.

Archaeological assessments undertaken to date over the Glades Estate have clearly identified the richness of the archaeological record in the area and more specifically demonstrated the archaeological sensitivity is concentrated on the slopes above Skinners Creek and the banks of Skinners Creek and Moonee Creek (and not within the proposed modification area).

This area of remnant vegetation has been subject to previous land clearing activities and most of the large trees old enough to bear cultural scars have been felled. A large number of trees did bear scars as recorded on the photolog below, however none of the scars inspected are likely to be of Aboriginal or cultural origin. This is also supported by the results of previous surveys which traversed the proposed modification area with the participation of local Aboriginal representatives (Collins 1994b and ERM 2007) and no areas of sensitivity or identification of potential cultural scars were identified.

Based on the extensive assessments already undertaken (Collins 1994b and ERM 2007) and the results of the due diligence site inspection, it is considered unlikely that further archaeological survey or controlled archaeological excavation would add any additional information to the archaeological record of the Project Area. The Aboriginal archaeology record is well represented within the previous studies and identified heritage values and areas of increased sensitivity have been protected along Moonee and Skinners Creeks.

The mitigation measures contained in the existing project approval and statement of commitments are also appropriate to the proposed modification area as summarised in *Section 7*. This includes ongoing consultation with the projects Aboriginal stakeholders. The involvement of the identified Aboriginal stakeholders should commence during the preparation of the Construction Environmental Management Plan (CEMP) and continue throughout the duration of construction.

**Table 6.2** *Photo log showing damage to trees within the proposed modification area*

<p><i>Non symmetrical scar extending to the ground. No axe marks or other signs to suggest any Aboriginal origin. Evidence of both fire and insect activity.</i></p>	<p><i>Tree shows signs of impact damage and is located adjacent to a much larger tree stump showing evidence of previous disturbances and potential sources of such damage.</i></p>
<p><i>Tree shows signs of impact damage.</i></p>	<p><i>Tree shows signs of recent impact damage.</i></p>



*Rubbing on the adjacent tree has resulted in damage and scarring on the smaller tree.*



*Evidence of damage from previous land clearing activities.*



*Tree immediately adjacent to the vehicle track. This small scar is less than 10cm wide and shows evidence of both fire and insect activity. No axe marks or other signs to suggest any Aboriginal origin. Location on the edge of the track suggests that it may be the result of vehicle movement or land clearing activities.*



*Non symmetrical scar extending to the ground. No axe marks or other signs to suggest any Aboriginal origin. Evidence of both fire and insect activity.*

The Aboriginal archaeology record is well represented within previous studies and identified heritage values have been protected along Moonee and Skinners Creeks. The proposed modification area does not have any increased likelihood of Aboriginal heritage values or archaeological sensitivity and the results of this due diligence assessment shows that the proposed modification would be unlikely to result in any increased impacts to those already approved.

The mitigation measures contained in the existing project approval and statement of commitments (summarised in *Table 7.1* and *Sections 7.1 to 7.3*) are also appropriate to the proposed modification area and should be included within the CEMP.

**Table 7.1** *Management and Mitigation Measures as per Project Approval*

Mitigation Measure	Timing/ Frequency	Source
Heritage Induction and Training (also refer to <i>Section 7.1</i> )		
Employees and contractors undertaking earthworks on the site must be instructed that they are working close to a culturally sensitive area. It is possible that their works may uncover cultural material. Employees and contractors must be instructed to exercise caution when working on the site and must be instructed how to identify this cultural material and that, in the event that they do find any, they are to stop work immediately and follow the procedures set out in Condition D14 of this approval.	Prior to construction	Condition of Approval C8 (2)
Protection of Heritage Sites During Construction - Site 2 (partial), Site 3, Site 4, Site 6 and Site 7.		
A semi-permanent high visibility fence shall be built at least 10 metres from the known boundary of Site 2 (areas of remnant vegetation which are not to be disturbed), Site 3, Site 4, Site 6 and Site 7 prior to commencement of any work on the site, in order to protect these sites from any inadvertent harm by workers developing the site. The fence shall be built under the supervision of a qualified archaeologist and representatives of the local Aboriginal community (including representative/s of the Local Aboriginal Land Council/s). The fence is to be kept in place for the duration of the construction period.	Prior to construction	Condition of Approval C8 (1) Statement of Commitments
Surface collection/salvage of artefacts - Site 1, part Site 2 and Site 5.		
A surface collection of artefacts must be undertaken by representatives of the Aboriginal community and an archaeologist in Site 1, the portion of Site 2 to be disturbed and Site 5.	Prior to any impact to Site 1, Site 2 or Site 5.	Condition of Approval D13

Mitigation Measure	Timing/ Frequency	Source
A locked and secure temporary storage facility will be provided on site for the temporary storage of artefacts collected from the site. A timeframe for the temporary storage of artefacts will be provided and a program developed in consultation with the local Aboriginal community for the long term care and control of all Aboriginal Cultural material collected from the development site.	Prior to any impact to Site 1, Site 2 or Site 5.	Statement of Commitments
Unexpected Finds Procedure (also refer to <i>Figures 7.1 and 7.2</i> )		
If any archaeological relics are uncovered during the course of the work in any stage of the project, then all works shall cease immediately in that area and the NSW Heritage Office contacted. Depending on the possible significance of the relics, an archaeological assessment may be required before further works can continue in that area.	As required	Condition of Approval D12
In the event that future works during any stage of the project disturb Aboriginal artefacts or relics, works at or adjacent to the material must stop immediately. Temporary fencing must be erected around the site and the material must be identified by an independent and appropriately qualified archaeological consultant. OEHL, the Coffs Harbour Local Aboriginal Land Council (LALC), the Yarrowarra Aboriginal Corporation and the Garby Elders must be informed. These groups will advise on the most appropriate course of action to follow. Works must not resume at the location without the prior written consent of the OEHL.	As required	Condition of Approval D13
Any modifications to the project that may be required arising from findings of any additional archaeological ground surveys may require further approval of the Minister.	As required	Condition of Approval C8
Ongoing Consultation with Aboriginal stakeholders		
Representatives of the local Aboriginal community will be given an opportunity to participate in all additional archaeological ground surveys and to participate in the proposed mitigation/ management measures. Aboriginal community representatives will also be given the opportunity to be present during subsurface exploratory test pitting, to halt works if significant cultural material is found and to participate in the decision making for such finds.	During preparation of the CEMP and ongoing during construction.	Statement of Commitments

Mitigation Measure	Timing/ Frequency	Source
<p>Any activity likely to involve any level of ground disturbance (including elevated boardwalks) in the following areas will require additional archaeological assessment and consultation with the Aboriginal community:</p> <ul style="list-style-type: none"> <li>• any area of remnant vegetation to be retained along Skinners and Moonee Creeks (identified in Figure 4.2 of the EA as a PAD);</li> <li>• any area outside of the proposed development footprint which has not been previously surveyed; and</li> <li>• the area of cultural significance identified on Figure 4.2 of the EA.</li> </ul>	Ongoing	Statement of Commitments

## 7.1 *ABORIGINAL HERITAGE INDUCTION*

A cultural heritage induction should be provided to major contractors and site workers. The purpose of the induction is to assist in raising awareness of, and provide information to assist initial identification of Aboriginal cultural heritage. The induction should include advice on the identification of Aboriginal cultural heritage material and the contingency plans contained within this report. The site induction should take place prior to the commencement of any soil disturbance. Should Aboriginal cultural heritage material be found during the course of construction then appropriate actions outlined in *Section 7.2* and *Section 7.3* should be followed.

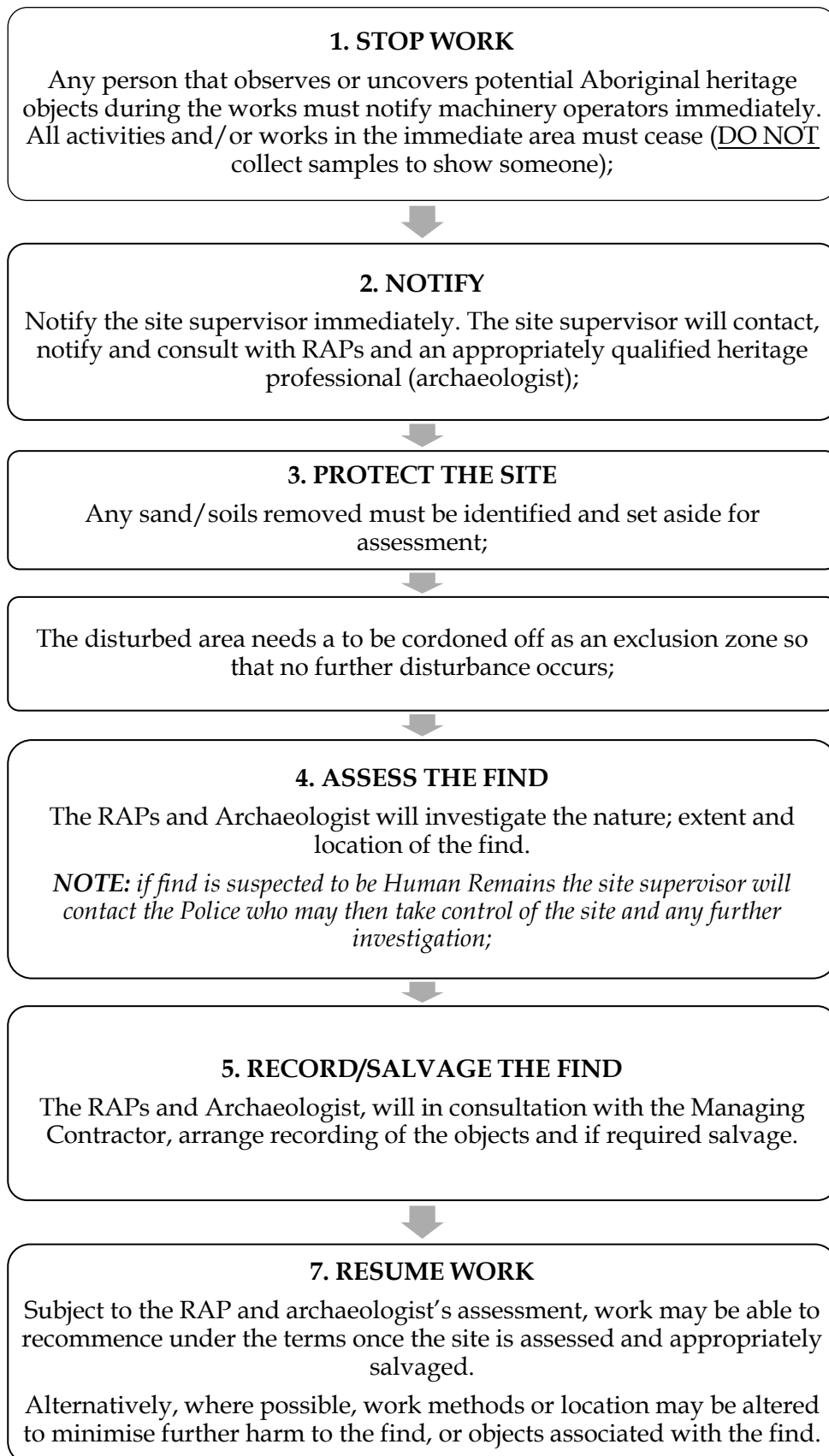
Printed material should be provided to work crews to enable them to recognise the major site types that could be encountered (open site, isolated finds and Aboriginal hearths).

## 7.2 *PROTOCOL FOR DISCOVERY OF UNEXPECTED SITES*

The gently sloping landform that encompasses the proposed modification area is not considered to contain the potential for any high density Aboriginal occupational evidence. There was no evidence during the various field surveys (Collins 1994, Appleton 2003 or ERM 2007) that this landform contained any Aboriginal archaeological artefacts and there is no archaeological requirement for any further survey work or monitoring within this landform.

If previously unrecorded Aboriginal heritage evidence is identified within the proposed modification area (or the broader Glades Estate Project Area), this evidence will be subject to temporary protection, recorded and appropriate management strategies implemented, in consultation with RAPs as depicted in *Figure 7.1*

Figure 7.1 Protocol For Discovery Of Unexpected Sites

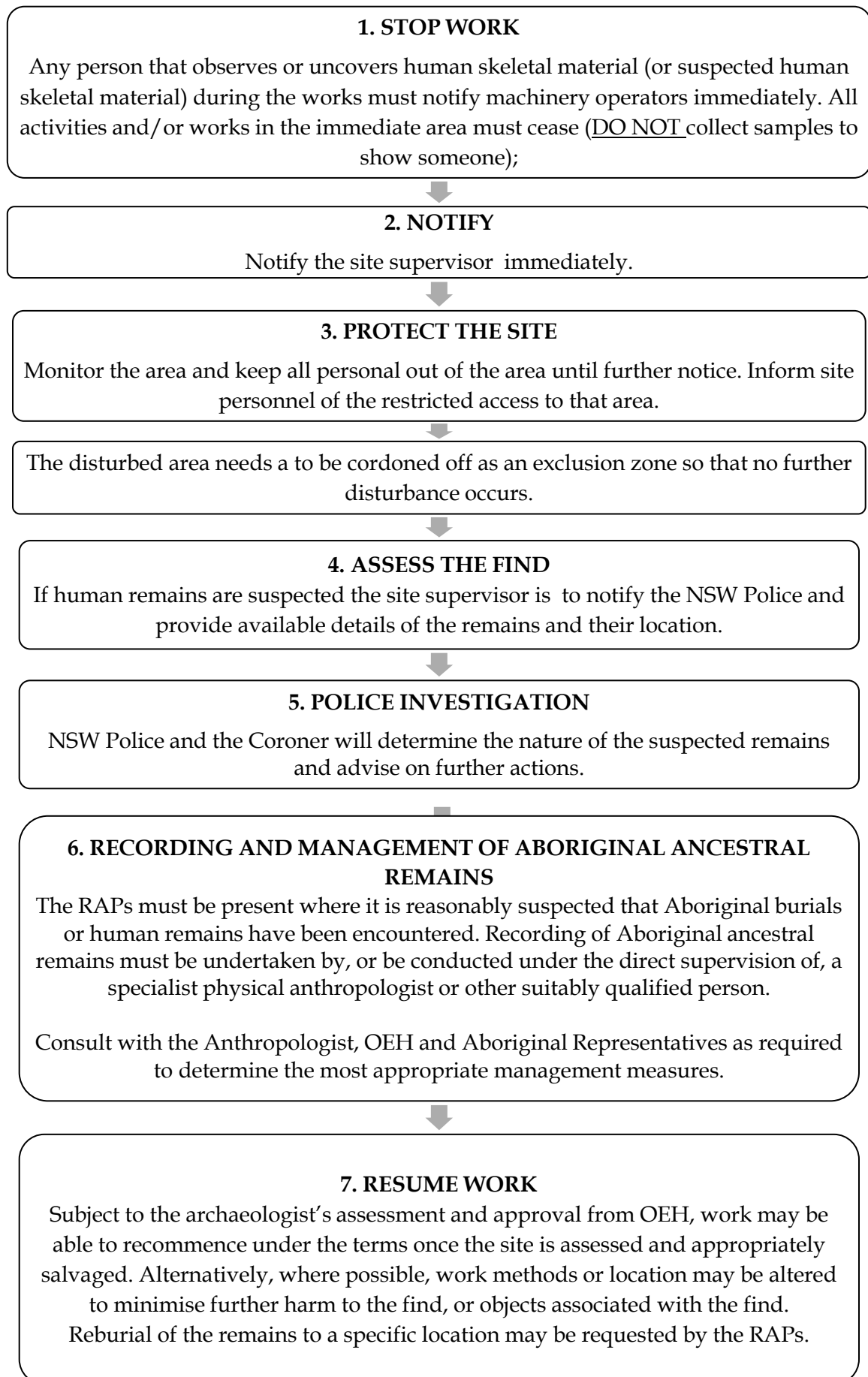


***PROTOCOL FOR DISCOVERY OF SKELETAL REMAINS***

Should any human skeletal remains be identified, the landowner will comply with statutory obligations and will consider the special needs of the Aboriginal community should those remains be identified as Aboriginal.

In the event of discovery of skeletal material all works should cease, and the police, relevant local Aboriginal community groups and a suitably experienced archaeologist or physical anthropologist should be contacted to assess the material before determining the correct management action. Works should not resume until the Police and/or OEHL have given authority in writing and approved a management plan as depicted in *Figure 7.2*:

Figure 7.2 Protocol for Discovery of Skeletal Remains



## *CONCLUSION*

Due diligence is not an assessment of Aboriginal cultural heritage values although this high level of assessment has confirmed that the Aboriginal archaeology record of the Glades Estate Project Area is well represented within previous studies undertaken to support the existing project approval and that identified heritage values have been protected along Moonee and Skinners Creeks. The Due Diligence site inspection traversed the proposed modification area and no evidence of Aboriginal heritage sites were recorded. This supports the previous studies already undertaken within the Glades Estate Project Area and the proposed modification area does not have any increased likelihood of Aboriginal heritage values or archaeological sensitivity.

The mitigation measures contained in the existing project approval and statement of commitments are also appropriate to the proposed modification area. This includes ongoing consultation with the projects Aboriginal stakeholders. The involvement of the identified Aboriginal stakeholders should commence during the preparation of the Construction Environmental Management Plan (CEMP) and continue throughout the duration of construction.

Appleton (2003) The archaeological re-investigation of an open artefact scatter, Site No. #22-1-0027, "DH 2:Moonee". Report to Resource Design & Management Pty Ltd.

Bellshaw J (1978) Population distribution and the pattern of seasonal movement in northern New South Wales. In I McBryde (ed.) Records of times past: ethnohistorical essays on the culture and ecology of the New England tribes. Australian Institute of Aboriginal Studies, Canberra. pp 65-81.

Butlin N (1982) Close encounters of the worst kind: modelling Aboriginal depopulation and resource competition 1788-1850. Australian National University, Canberra.

Coffey Geotechnics (2007) Acid Sulphate Soils Assessment for Residential Subdivision Lot 1 DP725785 Pacific Highway Moonee Beach NSW. Report prepared for Resource Design and Management Pty Ltd.

Collins J (1994a) Proposed rural residential subdivision at Moonee, N.S.W. North Coast: Archaeological survey for Aboriginal sites. Report to Gutteridge Haskins & Davey Pty Ltd.

Collins J (1994b) Proposed 12 Lot subdivision at Moonee, N.S.W. North Coast: Archaeological survey for Aboriginal sites. Report to Resource Design and Management Pty Ltd.

Collins J (1997) Proposed upgrading Coffs Harbour Airport. Cultural heritage assessment. Report to GHD Pty Ltd.

Collins J (2002) Coffs Harbour Highway Planning Sapphire to Woolgoolga Aboriginal Heritage Assessment. Report to Connell Wagner Pty Ltd.

DECCW (2010). Due Diligence Code of Practice for the Protection of Aboriginal Objects in New South Wales.

Department of Land and Water Conservation (1999) Coffs Harbour 1:100,000 soil landscape series sheet 8537. Department of Land and Water Conservation Resource Information Unit, Grafton.

Environmental Resources Management (Australia) Pty Ltd (2007). Aboriginal Cultural Heritage Assessment for the "Glades' Residential Development Moonee Beach NSW. Report prepared for the Rothwell Boys Pty Ltd

Geological survey of New South Wales and Geology Department, University of New England (1969) Dorrigo-Coffs Harbour 1:250,000 Geological Series Sheet SH56-10&11. New South Wales Department of Mines.

Long A (2005) Aboriginal scarred trees in New South Wales: a field manual. Department of Environment and Conservation, Sydney.

McBryde I (1967) Coffs Harbour District: Moonee Beach Site 1 Report on work April 1967. Report to Cudgen Rutile.

Myall Coast Archaeological Services (2013) Aboriginal Heritage Assessment Lot 1 DP 1097743 and Lot 6 DP 252223 Pacific Highway, Moonee Beach, NSW. Report to JW Planning, Newcastle NSW.

Navin K (1991) An archaeological survey of a proposed development area at Moonee, north of Coffs Harbour, New South Wales. Report to Darcy Costorphan & Associates Pty Ltd.

NSW DECCW 2010 Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW

Piper A (1986) An archaeological survey for Aboriginal sites and relics in the Moonee Beach area, Coffs Harbour, NSW Report to NSW National Parks and Wildlife.

Ryan J S (1964) The Land of Ulitarra: early records of the Aborigines of the Mid-North Coast of New South Wales. University of New England, Grafton.

Speight J.G (1990) Landform. In McDonald R C, Isbell R F, Speight J G, Walker J, and Hopkins M.S. (eds.) Australian Soil and Land Survey Field Handbook, Second Edition. Inkata Press, Australia.

Thomas, L. (2013) Aboriginal history of the Coffs Harbour region. Compiled by Coffs Harbour City Library, January 3013.

Tindale N B (1974) Aboriginal Tribes of Australia. Australian National University, Canberra.

Umwelt (Australia) Pty Ltd. 2006. Aboriginal and Archaeological Survey and Assessment of Lot 66 DP 551005, Moonee Beach, NSW.

Annex A

## Database Searches

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
22-1-0117	Crown reserve	AGD	56	518080	6662050	Open site	Valid	Artefact : -, Shell : -	Midden,Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>	Deidre Murphy					<u>Permits</u>		
22-1-0118	Moonee Caravan Park 2	AGD	56	514780	6657550	Open site	Valid	Artefact : -	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>	Unknown Author,Deidre Murphy					<u>Permits</u>		
22-1-0119	Moonee Caravan Park 3	AGD	56	514900	6657880	Open site	Valid	Artefact : -	Isolated Find	
	<u>Contact</u>	<u>Recorders</u>	Unknown Author					<u>Permits</u>		
22-1-0051	Moonee Beach Midden	GDA	56	515221	6657649	Open site	Valid	Shell : -, Artefact : -	Midden	
	<u>Contact</u>	<u>Recorders</u>	Pamela O'Neill					<u>Permits</u>	1142,4151,4162	
22-1-0053	Moonee Creek 1;Moonee;	AGD	56	515500	6660520	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	1981
	<u>Contact</u>	<u>Recorders</u>	Kerry Navin					<u>Permits</u>		
22-1-0069	MS 1	AGD	56	514440	6661510	Open site	Valid	Artefact : -	Open Camp Site	2809
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins					<u>Permits</u>		
22-1-0070	MS 2	AGD	56	514325	6661520	Open site	Valid	Artefact : -	Open Camp Site	2809
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins					<u>Permits</u>		
22-1-0071	MS 3	AGD	56	514110	6660540	Open site	Valid	Artefact : -	Open Camp Site	2809
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins					<u>Permits</u>		
22-1-0072	DH 2;Moonee (Site 2)	AGD	56	514314	6659977	Open site	Valid	Artefact : -	Open Camp Site	100810
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins,Miss.Nicola Roche					<u>Permits</u>		
22-1-0073	DH 4;Moonee;	AGD	56	514520	6659980	Open site	Valid	Modified Tree (Carved or Scarred) : -	Scarred Tree	
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins					<u>Permits</u>		
22-1-0074	DH 4;Moonee (Site 5)	AGD	56	514682	6659949	Open site	Valid	Artefact : -	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins,Miss.Nicola Roche					<u>Permits</u>		
22-1-0075	DH 6;Moonee;	AGD	56	515120	6659480	Open site	Valid	Artefact : -	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins					<u>Permits</u>		
22-1-0078	MS 4;	AGD	56	514570	6661680	Open site	Valid	Artefact : -	Isolated Find	
	<u>Contact</u>	<u>Recorders</u>	Ms.Jacqueline Collins					<u>Permits</u>		
22-1-0083	Moonee Beach Workshop;	AGD	56	514960	6657940	Open site	Valid	Artefact : -	Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>	Mrs.Lisa Southgate					<u>Permits</u>		
22-1-0019	Moonee Beach Site 1;Rocky Bluff;	AGD	56	517300	6661500	Open site	Valid	Shell : -, Artefact : -, Aboriginal Ceremony and Dreaming : -	Midden,Natural Mythological (Ritual)	1478
	<u>Contact</u>	<u>Recorders</u>	Isabel McBryde					<u>Permits</u>		

Report generated by AHIMS Web Service on 02/02/2018 for Joanne Woodhouse for the following area at Lat, Long From : -30.2355, 153.098 - Lat, Long To : -30.1645, 153.2106 with a Buffer of 0 meters. Additional Info : Due Diligence Assessment. Number of Aboriginal sites and Aboriginal objects found is 79

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
22-1-0020	Moonee Beach;Rocky Bluff;	AGD	56	518000	6661700	Open site	Valid	Aboriginal Ceremony and Dreaming : -	Natural Mythological (Ritual)	
	<b>Contact</b>	<b>Recorders</b>	J.A Starling					<b>Permits</b>		
22-1-0137	CHSS-12	AGD	56	514420	6660200	Open site	Valid	Artefact : 5		103091
	<b>Contact</b>	<b>Recorders</b>	Ms.Jacqueline Collins					<b>Permits</b>		
22-1-0138	CHSS-11	AGD	56	516554	6662063	Open site	Partially Destroyed	Artefact : 16, Art (Pigment or Engraved) : 1		103091
	<b>Contact</b>	<b>Recorders</b>	ADISE Pty Ltd,Ms.Jacqueline Collins					<b>Permits</b>	3778	
22-1-0143	CHSS-2	AGD	56	513800	6657190	Open site	Valid	Artefact : 3		103091
	<b>Contact</b>	<b>Recorders</b>	Ms.Jacqueline Collins					<b>Permits</b>		
22-1-0130	Moonee Caravan Park 1	AGD	56	514880	6657750	Open site	Valid	Artefact : 2, Shell : -		
	<b>Contact</b>	<b>Recorders</b>	Deidre Murphy					<b>Permits</b>	3724	
22-1-0131	Moonee Reserve Car Park	AGD	56	515050	6657550	Open site	Valid	Artefact : 1		
	<b>Contact</b>	<b>Recorders</b>	Yarrawarra Aboriginal Corporation					<b>Permits</b>	1936,2028	
22-1-0147	A1_Bucca Rd	AGD	56	513270	6660660	Open site	Valid	Artefact : 12		
	<b>Contact</b>	<b>Recorders</b>	Ms.Jacqueline Collins					<b>Permits</b>		
22-1-0148	A2_Bucca Rd	AGD	56	512990	6661080	Open site	Valid	Artefact : 4, Aboriginal Resource and Gathering : -		
	<b>Contact</b>	<b>Recorders</b>	Ms.Jacqueline Collins					<b>Permits</b>		
22-1-0166	ISF 2 + PAD	AGD	56	514435	6656700	Open site	Valid	Artefact : 1, Potential Archaeological Deposit (PAD) : 1		99028,99032,100149,101089
	<b>Contact</b>	<b>Recorders</b>	Mary Dallas Consulting Archaeologists					<b>Permits</b>	1809,2014	
22-1-0167	ISF 1	AGD	56	514800	6656250	Open site	Valid	Artefact : 1		99032
	<b>Contact</b>	<b>Recorders</b>	Mary Dallas Consulting Archaeologists					<b>Permits</b>	2014	
22-1-0168	MSB2 + PAD	AGD	56	514450	6656450	Open site	Valid	Artefact : 6, Potential Archaeological Deposit (PAD) : 1		99028,99032,100149,101089
	<b>Contact</b>	<b>Recorders</b>	Mary Dallas Consulting Archaeologists					<b>Permits</b>	1809,2014	
22-1-0169	MSB1 + PAD	AGD	56	514500	6656200	Open site	Valid	Artefact : 15, Potential Archaeological Deposit (PAD) : 1		99028,99032,100149,101089
	<b>Contact</b>	<b>Recorders</b>	Mary Dallas Consulting Archaeologists					<b>Permits</b>	1809,2014	
22-1-0170	Moonee Beach O3	AGD	56	517770	6661410	Open site	Valid	Shell : -, Artefact : -		

Report generated by AHIMS Web Service on 02/02/2018 for Joanne Woodhouse for the following area at Lat, Long From : -30.2355, 153.098 - Lat, Long To : -30.1645, 153.2106 with a Buffer of 0 meters. Additional Info : Due Diligence Assessment. Number of Aboriginal sites and Aboriginal objects found is 79

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	<b>Contact</b>	<b>Recorders</b>	Ms.Rebecca Edwards-Booth,Claude McDermott					<b>Permits</b>	1801	
22-1-0194	MSB4 Moonee Beach	AGD	56	514250	6656200	Open site	Valid	Potential Archaeological Deposit (PAD) : -		99028,99032
	<b>Contact</b>	<b>Recorders</b>	Coffs Harbour and District LALC,Davies Heritage Consultants Pty Ltd					<b>Permits</b>	2014	
22-1-0192	Sapphire One	AGD	56	514145	6655639	Open site	Valid	Artefact : 4		
	<b>Contact</b>	<b>Recorders</b>	Coffs Harbour and District LALC					<b>Permits</b>	1986	
22-1-0215	MBI	AGD	56	514363	6657942	Open site	Valid	Artefact : 6		
	<b>Contact</b>	<b>Recorders</b>	Mary Dallas Consulting Archaeologists					<b>Permits</b>	4053	
22-1-0198	Moonee Beach_03	AGD	56	514434	6657029	Open site	Valid	Aboriginal Resource and Gathering : -, Artefact : -		
	<b>Contact</b>	<b>Recorders</b>	Miss.Nicky Owner					<b>Permits</b>		
22-1-0216	MBS1	AGD	56	513563	6660551	Open site	Valid	Artefact : 2		
	<b>Contact</b>	<b>Recorders</b>	ERM Australia Pty Ltd- Sydney CBD					<b>Permits</b>		
22-1-0217	MBS2	AGD	56	513279	6660637	Open site	Valid	Artefact : 5		
	<b>Contact</b>	<b>Recorders</b>	ERM Australia Pty Ltd- Sydney CBD					<b>Permits</b>		
22-1-0218	MBS3	AGD	56	513258	6660672	Open site	Valid	Artefact : 2		
	<b>Contact</b>	<b>Recorders</b>	ERM Australia Pty Ltd- Sydney CBD					<b>Permits</b>		
22-1-0219	MBS4	AGD	56	514091	6660288	Open site	Valid	Artefact : 1		
	<b>Contact</b>	<b>Recorders</b>	ERM Australia Pty Ltd- Sydney CBD					<b>Permits</b>		
22-1-0212	S2W-2	GDA	56	514083	6655959	Open site	Destroyed	Artefact : 4		103091
	<b>Contact</b>	<b>Recorders</b>	Ms.Jacqueline Collins,Ms.Jacqueline Collins					<b>Permits</b>		
22-1-0220	Emerald Beach 1	AGD	56	517277	6662464	Open site	Destroyed	Artefact : 5		100223
	<b>Contact</b>	<b>Recorders</b>	Ian Brown					<b>Permits</b>	2587	
18-1-0024	Sugar Mill Creek 1 (SMC1)	AGD	56	515188	6657552	Open site	Valid	Artefact : 20		100424
	<b>Contact</b>	<b>Recorders</b>	Umwelt (Australia) Pty Limited					<b>Permits</b>		
22-1-0296	Sugar Mill Creek 2 (SMC 2)	AGD	56	514526	6656631	Open site	Valid	Artefact : 20		100424
	<b>Contact</b>	<b>Recorders</b>	Umwelt (Australia) Pty Limited					<b>Permits</b>		
22-1-0297	Pad 2 Sugar Mill Creek	AGD	56	515188	6657552	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		100424
	<b>Contact</b>	<b>Recorders</b>	Umwelt (Australia) Pty Limited					<b>Permits</b>		
22-1-0299	Site 1 Rothwell Boys	AGD	56	514573	6659660	Open site	Valid	Artefact : 9		
	<b>Contact</b>	<b>Recorders</b>	Miss.Nicola Roche					<b>Permits</b>		
22-1-0294	Site6	GDA	56	515480	6660008	Open site	Valid	Artefact : 2		

Report generated by AHIMS Web Service on 02/02/2018 for Joanne Woodhouse for the following area at Lat, Long From : -30.2355, 153.098 - Lat, Long To : -30.1645, 153.2106 with a Buffer of 0 meters. Additional Info : Due Diligence Assessment. Number of Aboriginal sites and Aboriginal objects found is 79

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.



SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	<a href="#">Contact</a> Searle	<a href="#">Recorders</a>						<a href="#">Permits</a>		
22-1-0372	S2W-13 PAD 8	GDA	56	517000	6662750	Open site	Valid	Burial : 1		103091
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
22-1-0374	S2W-15	GDA	56	514167	6657059	Open site	Valid	Artefact : 1		103091
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
22-1-0379	S2W-12:PAD 8	GDA	56	517275	6662670	Open site	Valid	Potential Archaeological Deposit (PAD) : 1		103091
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
22-1-0383	S2W-19	GDA	56	516465	6662125	Open site	Partially Destroyed	Artefact : 1		103091
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>	3778	
22-1-0407	S2W 23	GDA	56	514457	6658206	Open site	Destroyed	Artefact : 1		103091
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
22-1-0406	S2W 13	GDA	56	517250	6662700	Open site	Valid	Artefact : 1, Burial : 1		103091
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
22-1-0426	Moonee Beach Tidal Cresc Res	GDA	56	514966	6658926	Open site	Valid	Artefact : 1		
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
22-1-0427	House Lots - Lot 60 DP 1168248	GDA	56	514981	6658819	Open site	Valid	Artefact : 1		
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
22-1-0413	Moonee Beach Road Seddon 2	GDA	56	514817	6658405	Open site	Partially Destroyed	Artefact : 3		
	<a href="#">Contact</a> Mr.Mark Flanders	<a href="#">Recorders</a>						<a href="#">Permits</a>	3576	
22-1-0414	Moonee Beach Road Seddon 3	GDA	56	514850	6658346	Open site	Partially Destroyed	Artefact : 1		
	<a href="#">Contact</a> Mr.Mark Flanders	<a href="#">Recorders</a>						<a href="#">Permits</a>	3576	
22-1-0415	Moonee Beach Road Seddon 4	GDA	56	514888	6658298	Open site	Partially Destroyed	Artefact : 2		
	<a href="#">Contact</a> Mr.Mark Flanders	<a href="#">Recorders</a>						<a href="#">Permits</a>	3576	
22-1-0416	Moonee Beach Road Seddon_1	GDA	56	514740	6658471	Open site	Partially Destroyed	Artefact : 1		
	<a href="#">Contact</a> Mr.Mark Flanders	<a href="#">Recorders</a>						<a href="#">Permits</a>	3576	
22-1-0419	S2W-19 Re-deposit	GDA	56	516515	6662116	Open site	Valid	Artefact : -		103091
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		
22-1-0420	S2W-24	GDA	56	516360	6661890	Open site	Valid	Artefact : -		103091
	<a href="#">Contact</a>	<a href="#">Recorders</a>						<a href="#">Permits</a>		

Report generated by AHIMS Web Service on 02/02/2018 for Joanne Woodhouse for the following area at Lat, Long From : -30.2355, 153.098 - Lat, Long To : -30.1645, 153.2106 with a Buffer of 0 meters. Additional Info : Due Diligence Assessment. Number of Aboriginal sites and Aboriginal objects found is 79

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
22-1-0423	Sullivans Road Moonee	GDA	56	514537	6658302	Open site	Partially Destroyed	Artefact : 10		
	<b>Contact</b> Mr.Ian Brown									
	<b>Recorders</b> Mr.Mark Flanders, Everick Heritage Consultants Pty Ltd, Mr.Tim Hill								<b>Permits</b> 3738	
22-1-0405	S2W-13	GDA	56	517250	6662700	Open site	Partially Destroyed	Artefact : 1, Burial : 1		103091
	<b>Contact</b>									
	<b>Recorders</b> ADISE Pty Ltd								<b>Permits</b> 3778	
22-4-0138	Moonee Beach RD Seddon1	GDA	56	514740	6658471	Open site	Partially Destroyed	Artefact : -		
	<b>Contact</b> Mr.Mark Flanders									
	<b>Recorders</b> Mr.Mark Flanders								<b>Permits</b> 3576	
22-1-0437	S2W-2 Redeposit	GDA	56	514221	6656185	Open site	Valid	Artefact : -		103091
	<b>Contact</b>									
	<b>Recorders</b> Ms.Jacqueline Collins								<b>Permits</b>	
22-1-0438	S2W-4 Redeposit	GDA	56	516591	6662091	Open site	Valid	Artefact : -		103091
	<b>Contact</b>									
	<b>Recorders</b> Ms.Jacqueline Collins								<b>Permits</b>	
22-1-0449	S2W-12 Redeposit	GDA	56	517263	6662694	Open site	Valid	Artefact : -		103091
	<b>Contact</b>									
	<b>Recorders</b> Ms.Jacqueline Collins								<b>Permits</b>	
22-1-0450	S2W-13 Redeposit	GDA	56	517023	6662720	Open site	Valid	Artefact : -		103091
	<b>Contact</b>									
	<b>Recorders</b> Ms.Jacqueline Collins								<b>Permits</b>	
22-1-0430	MB Midden 5	GDA	56	517752	6661586	Open site	Valid	Shell : 25, Artefact : 20		
	<b>Contact</b>									
	<b>Recorders</b> Mr.EJ Williams								<b>Permits</b>	
22-1-0431	MB Midden 6	GDA	56	517752	6661594	Open site	Valid	Artefact : 20, Shell : 40		
	<b>Contact</b>									
	<b>Recorders</b> Mr.EJ Williams								<b>Permits</b>	
22-1-0455	Pacific Highway Site 2	GDA	56	515360	6661207	Open site	Partially Destroyed	Artefact : -		103429
	<b>Contact</b>									
	<b>Recorders</b> Ms.nat redman								<b>Permits</b> 3778	
22-1-0456	Pacific Highway Site 3	GDA	56	515896	6661642	Open site	Partially Destroyed	Artefact : -		103429
	<b>Contact</b>									
	<b>Recorders</b> Ms.nat redman								<b>Permits</b> 3778	
22-1-0428	MB Midden 3	GDA	56	517756	6661619	Open site	Valid	Shell : 20		
	<b>Contact</b>									
	<b>Recorders</b> Mr.Emmanuel Fewquandie								<b>Permits</b> 3680	
22-1-0429	MB Midden 4	GDA	56	517742	6661615	Open site	Valid	Shell : 7		
	<b>Contact</b>									
	<b>Recorders</b> Mr.Emmanuel Fewquandie								<b>Permits</b> 3680	
22-1-0442	Emerald Headland Temporary Track	GDA	56	517727	6661622	Open site	Valid	Artefact : -		
	<b>Contact</b>									
	<b>Recorders</b> Mr.EJ Williams								<b>Permits</b>	
22-1-0433	S2W-23 Redeposit	GDA	56	514253	6658148	Open site	Valid	Artefact : -		103091
	<b>Contact</b> Mr.Mark Flanders									
	<b>Recorders</b> Ms.Jacqueline Collins								<b>Permits</b>	

Report generated by AHIMS Web Service on 02/02/2018 for Joanne Woodhouse for the following area at Lat, Long From : -30.2355, 153.098 - Lat, Long To : -30.1645, 153.2106 with a Buffer of 0 meters. Additional Info : Due Diligence Assessment. Number of Aboriginal sites and Aboriginal objects found is 79

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.



# AHIMS Web Services (AWS)

## Extensive search - Site list report

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports	
22-1-0464	AHMPCP01	GDA	56	515014	6658039	Open site	Partially Destroyed	Artefact : 1			
	<u>Contact</u>	<u>Recorders</u>	Everick Heritage Consultants Pty Ltd, Everick Heritage Consultants Pty Ltd, Mr. Matt								<u>Permits</u>
22-1-0465	AHMBPC02	GDA	56	515080	6657753	Open site	Valid	Artefact : 1			
	<u>Contact</u>	<u>Recorders</u>	Mr. Matt Alexander								<u>Permits</u>
22-1-0466	AHMBCP03	GDA	56	515096	6657752	Open site	Valid	Artefact : 1			
	<u>Contact</u>	<u>Recorders</u>	Mr. Matt Alexander								<u>Permits</u>
22-1-0467	AHMBCP04	GDA	56	515136	6657794	Open site	Valid	Artefact : 4			
	<u>Contact</u>	<u>Recorders</u>	Mr. Matt Alexander								<u>Permits</u>
22-1-0468	AHMBCP05	GDA	56	515129	6657857	Open site	Valid	Artefact : 4			
	<u>Contact</u>	<u>Recorders</u>	Mr. Matt Alexander								<u>Permits</u>
22-1-0497	Heritage Drive_Sullivans Road Moonee Reburial site	GDA	56	514176	6661039	Closed site	Valid	Artefact : -			
	<u>Contact</u>	<u>Recorders</u>	Everick Heritage Consultants Pty Ltd, Mr. Tim Hill								<u>Permits</u>
18-1-0029	SRM2	GDA	56	514433	6658177	Open site	Destroyed	Artefact : -			
	<u>Contact</u>	<u>Recorders</u>	Everick Heritage Consultants Pty Ltd, Everick Heritage Consultants Pty Ltd, Mr. Tim								<u>Permits</u> 4053

Report generated by AHIMS Web Service on 02/02/2018 for Joanne Woodhouse for the following area at Lat, Long From : -30.2355, 153.098 - Lat, Long To : -30.1645, 153.2106 with a Buffer of 0 meters. Additional Info : Due Diligence Assessment. Number of Aboriginal sites and Aboriginal objects found is 79

This information is not guaranteed to be free from error omission. Office of Environment and Heritage (NSW) and its employees disclaim liability for any act done or omission made on the information and consequences of such acts or omission.

**ERM** has over 100 offices  
across the following  
countries worldwide

Australia	Netherlands
Argentina	New Zealand
Belgium	Peru
Brazil	Poland
China	Portugal
France	Puerto Rico
Germany	Singapore
Hong Kong	Spain
Hungary	Sri Lanka
India	Sweden
Indonesia	Taiwan
Ireland	Thailand
Italy	UK
Japan	USA
Korea	Venezuela
Malaysia	Vietnam
Mexico	

### **Environmental Resources Management**

PO Box 803  
Newcastle NSW 2300  
Watt Street Comercial Centre  
45 Watt Street  
Newcastle NSW2300

T: +61 2 49 035500  
F: +61 2 49 295363  
[www.erm.com](http://www.erm.com)

