



Environmental & Heritage Management P/L



INDIGENOUS HERITAGE ASSESSMENT

CENTRAL WEST REGIONAL ROAD/RAIL FREIGHT TERMINAL

BATHURST, NSW

JULY 2005

REPORT PREPARED BY

OZARK ENVIRONMENTAL & HERITAGE
MANAGEMENT P/L

FOR

MELLOR GRAY ARCHITECTS

ON BEHALF OF

SLOBOBAX PTY LTD



Executive Summary

Environmental assessment for the proposed Central West Regional Freight Terminal in Bathurst, NSW is being undertaken by Mellor Gray Architects on behalf of Slobobax P/L.

The Indigenous heritage component of this process recorded no Aboriginal sites over the entire c. 30 ha study area, located on eastern fringes of Bathurst. Furthermore, the fairly extensive disturbance that the landscape has undergone in this area results in there being low potential for the presence of undetected, intact, sub-surface archaeological deposits.

Consequently, there are no constraints to the proposed freight terminal on the grounds of cultural heritage and no further archaeological investigation is considered necessary.

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1. INTRODUCTION

This report was commissioned by Mellor Gray Architects on behalf of Slobobax P/L. It details the results of a survey for Indigenous heritage at the location of the proposed Central West regional road/rail freight terminal in Bathurst, NSW (Figures 1 & 2).

This study comprises part of a Review of Environmental Factors.

1.1 Project Scope

The consultant was briefed to undertake survey and assessment of Indigenous heritage issues relating to the proposed construction of the Central West regional road/rail freight terminal (Figures 2).

This investigation included the following aspects:

- A search of the NSW DEC Aboriginal Heritage Information Management System (AHIMS) for any previously recorded sites;
- A review of relevant literature including previous consulting reports, academic theses and articles and published works on the history and ethnography of the Bathurst region;
- Consultation with the Bathurst Local Aboriginal Land Council;
- Pedestrian field survey to identify and record all cultural heritage sites and relics within the proposed 30 ha freight centre study area (Figures 2 and 3);
- Assessments of significance of the recorded sites and the formulation of appropriate management strategies; and
- Completion of documentary evidence (e.g. DEC Site Cards) for any sites/relics located during the survey for the notification of the relevant authorities.

1.2 Proposed Works

Mellor Gray Architects is managing development of the proposed Central West regional road/rail freight terminal project at Bathurst, NSW (Figures 1 - 3). The construction of this centre is proposed over a c. 30 ha area and will see fairly extensive impacts for the construction of the buildings, access roads and associated infrastructure.

1.3 Project Constraints and Limitations

Survey was limited to the study area outlined in yellow in Figure 2 and shown in its entirety in Figure 3. The study area was delineated by the client on site maps provided to OzArk EHM prior to survey.

1.4 Report Authorship

This investigation was undertaken by Jodie Benton and Phillip Cameron (OzArk Environmental & Heritage Management P/L), accompanied by Peter Jarrard, representative of the Bathurst Local Aboriginal Land Council. This report was written by Jodie Benton.

2. ABORIGINAL COMMUNITY INVOLVEMENT

The study area falls within the boundaries of the Bathurst Local Aboriginal Land Council (BLALC). The seeking of expressions of interest to be involved with the project was undertaken in accordance with the new DEC “*Interim policy for Aboriginal community consultation for part 6 approvals*” guidelines. No other groups responded to either advertisements placed in the local newspaper or letters sent out prior to survey and it is anticipated that other groups within the region that may have an interest in the current study area, could access information on this project through the BLALC.

Peter Jarrard (BLALC) took part in the field survey that took place on the 21st of April 2005. Discussions were held on-site regarding the findings of the assessment and the topics covered included land use disturbance, archaeological potential site management options and recommendations. The BLALC representative concurred with OzArk EHM that the study area was very disturbed and that it was unlikely that undetected, sub-surface deposits were present.

Correspondence from the BLALC regarding the survey results can be found in Appendix 2. A record of all consultation with the Aboriginal groups was kept during the course of the project and is presented in Appendix 3.

3. THE STUDY AREA

The study area for the current heritage assessment is comprised of c. 30 ha of land situated on the eastern boundaries of Bathurst in an area known as Kelso, NSW (Figure 2). The subject site is situated in the city of Bathurst within Evans Shire, in the County of Roxborough and Parish of Kelso. The subject land is bounded to the north by the Great Western Hwy, to the west by private property boundaries, to the south by the Main Western Railway line and to the east by the water treatment plant.

3.1 Climate, Topography and Hydrology

According to the DEC website (2005), the Bathurst study area lies within the South Western Slopes Bioregion which is an extensive area of foothills and isolated ranges comprising the lower inland slopes of the Great Dividing Range extending from north of Cowra through southern NSW into western Victoria with an area of 8,657,426 hectares. About 8,070,608 hectares or 93.22 per cent of this bioregion occurs in NSW, with the remainder in Vic. The NSW portion of the bioregion occupies about 10.1 per cent of the state.

Figure 1: Locality Map (Source: Robinsons Road Atlas 13th Ed).

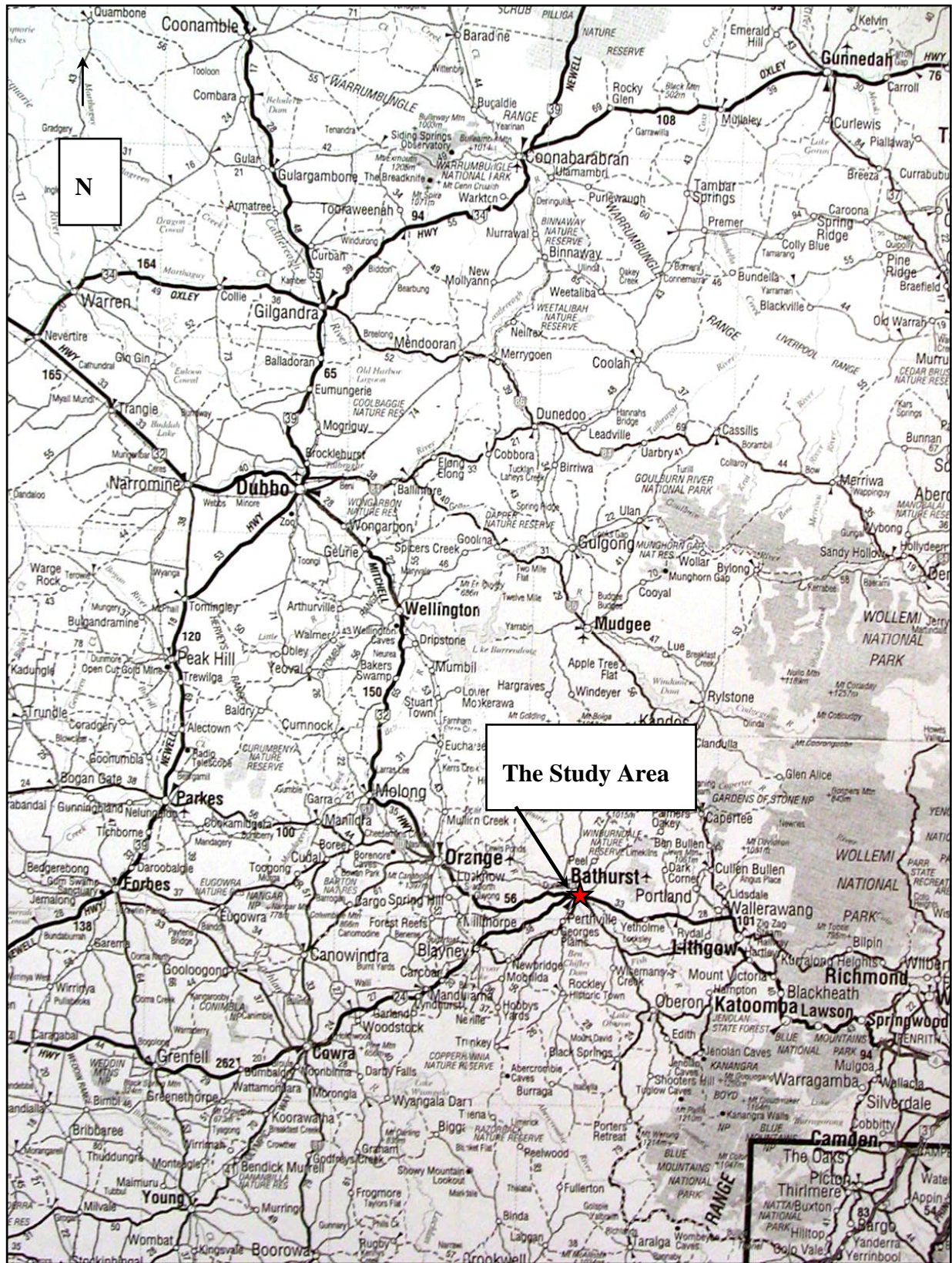


Figure 2: Map showing the study area in yellow outline. (Source: Bathurst 1:25 000 8831-3-S).

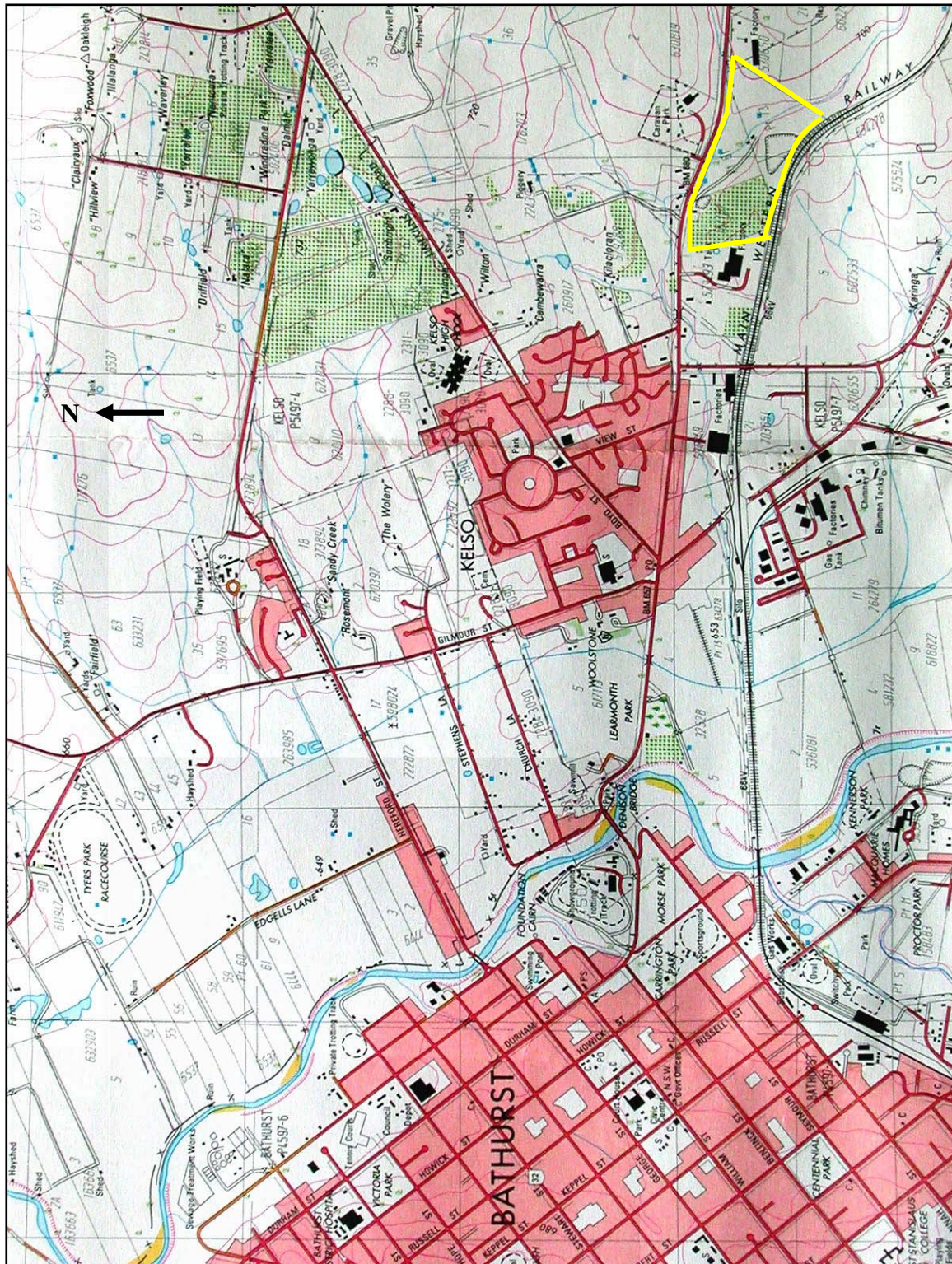
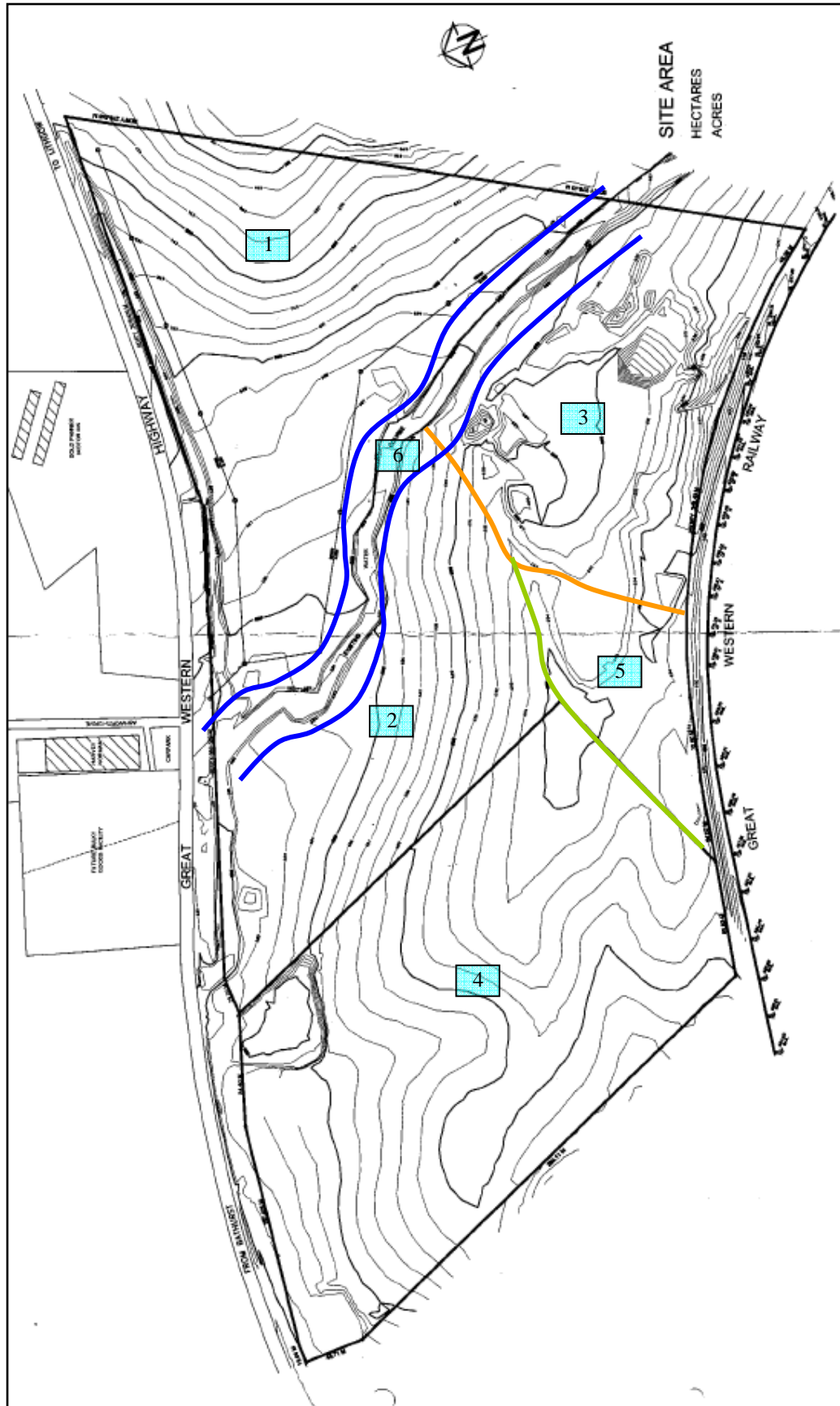


Figure 3: Detailed map showing the study area and the numbering system of the surveyed areas (Source: Mellor Gray Architects P/L).



This bioregion is dominated by a sub-humid climate characterised by hot summers and no dry season. A temperate climate, with warm summers, occurs at higher elevations along the eastern boundary of the bioregion adjacent to the South Eastern Highlands Bioregion. Mean annual temperature increases across the bioregion from low temperatures in the south and east to higher temperatures in the north and west.

Rainfall is distributed across the South Western Slopes Bioregion with high (up to around 1200 mm) mean annual rainfall in the east, and lower values (around 400 mm) for mean annual rainfall in the west.

More specifically Bathurst experiences an average daily minimum temperature of 6.4°C (the lowest recorded extreme of temperature being -10.6°), an average daily maximum temperature of 21°C (the highest recorded extreme of temperature being 44.7°C) and receives an average of 622.1 mm of rainfall per year (Bureau of Meteorology 2005).

The climate of this area, however, may not have been the same in the past. Pearson (1981: 26) states that areas with higher elevation may have been subject to peri glacial conditions at the height of the last ice age which could have discouraged occupation. For the last 10,000 years the climate in Australia seems to have remained relatively stable with marginally higher temperatures between 8,000 – 5,000 years ago with occasional bouts of cooler temperatures (Bowler 1983).

The study area is situated in undulating land dissected by the un-named creek line, which drains in a north-westerly direction and would have flowed into the Macquarie River c. 2.5 kms west of the current study area. This drainage line has incised a relatively deep channel, although this is likely to be the result of European land use practices, and may not have been so deep in pre-European times.

The lowest portion of the study area is associated with the immediate environs of Raglan Creek (Figure 2 and 3), and study area elevations range from 670 to 700 m AHD. The landforms within the study area are primarily gentle, undulating slopes.

3.2 Geology

According to the DEC website (2005) the bioregion lies wholly in the eastern part of the Lachlan Fold Belt which consists of a complex series of north to north-westerly trending folded bodies of Cambrian to Early Carboniferous sedimentary and volcanic rocks. Granites are common and mostly located in large scale upfolded bodies of rock. Granite landscapes occur either as central basins (as in the Bathurst area) surrounded by steep hills formed on contact metamorphic rocks, or as high blocky plateau features with rock outcrops and tors.

Hilly landscapes developed on the sedimentary and volcanic rocks are controlled by structural features (bedding and faults) and typically form lines of hills extended along the strike of more resistant rocks such as quartzite. The valleys between ranges are either in granite or generally softer rocks such as shale, phyllite or slate.

Limited areas of Tertiary basalt with underlying river gravels and sands occur, and as the country becomes lower to the west and north, wide valleys filled with Quaternary alluvium and occasional lakes become the dominant landscape form.

A range of mineral deposits occur in the region which has supported the mining industry over the past 150 years.

More specifically, the study area is situated entirely within an extensive Palaeozoic unit of the Bathurst Batholith group known as the Bathurst Granites which were formed in the Carboniferous period. This is comprised of coarse grained porphyritic biotite granite. Soils in the area are essential gravely and quartz rich, being the result of decaying granite.

3.3 Vegetation and Fauna

The study area has been predominantly modified for agriculture. Prior to European occupation the area would have supported *Southern Tableland Grassy Woodland* as defined by Keith (2004). Characteristic species would have included red stringybark (*Eucalyptus macrorhyncha*) and apple box (*E. goniocalyx*) on higher slopes, with, kurrajong (*Brachychiton populneum*), white gum (*E. rossi*), yellow box (*E. melliodora*) and Blakely's red gum (*E. blakelyi*) occupying the lower slopes.

3.4 Existing Levels of Disturbance

Using the study area divisions depicted in Figure 3, Table 1 provides an overview of site disturbance according to study area unit. The drainage feature through the centre of the study area (unit 6) has undergone considerable disturbance from mining impacts to the south and west and from limited earthworks, grazing and cropping to the north and east (Figure 3).

European land use practices have heavily impacted most of the land within the study area resulting in varying degrees of surface disturbance. As such, native trees and other vegetation have been predominantly cleared. Due to the clearance levels, water run-off speed has increased predisposing sensitive areas such as minor gullies to soil (sheet) erosion. This is particularly prevalent in the previously mined areas (Plates 1 and 2).

Vehicle tracks have been recently graded all over the site exposing significant areas and increasing the otherwise very low surface visibility (Plates 3 – 7).

Table 1: Observed disturbance over the Bathurst study area.

Location (See Figure 3)	Observed disturbance	Comment
Survey area 1	Cleared, grazed, and ploughed.	Recently used for grazing, recently graded track around the extremity.
Survey area 2	Cleared, grazed, and ploughed. Remains of houses, buildings and dumped agricultural rubbish	Recently used for grazing, recently graded track around the extremity.
Survey area 3	Cleared and mined. Serious erosion evident.	No topsoil remains over much of this area.
Survey area 4	Cleared, grazed, and ploughed. Last used as an orchard	Recently used for grazing, recently graded track around the extremity.
Survey area 5	Cleared, grazed, used for minor industrial activities – tile production.	
Survey area 6 - Riparian area	Limited impact from machinery (bulldozers / graders), natural disturbance associated with hydrological activities and flooding.	

3.5 Effective Survey Coverage

Ground surface visibility across the majority of the study area was low - moderate (see Table 2) hence, effective survey coverage was also low - moderate (approximately 15.2 %). Ground visibility varied widely (Plates 1 – 8) from being high in previously disturbed areas (mined land - survey unit 3) and along the extremities of the paddocks where tracks had been graded.

Table 2: Estimated effective survey coverage of the Bathurst study area.

Landform	Dimensions	Exposure %	Visibility within exposures	Estimated effective coverage	Sites
Riparian Zone – Survey Unit 6 (Alluvial flats)	approximately 2 ha	5 % Machine disturbance and tracks.	80%	0.08 ha	0
Cleared land	approximately 28 ha	20% Ploughed paddocks (areas 2, 4, 7, 14 and a portion of 5) natural exposures and vehicle access tracks.	80%	4.48 ha	0
Totals	30 ha			4.56 ha	0

4. ARCHAEOLOGICAL CONTEXT

4.1 Regional Context

According to Tindale's map of tribal boundaries (1974), the current study area falls within the boundaries of Wiradjuri country, as defined by the limits of the Wiradjuri language group. This territory is said to include all lands between Dubbo and Lithgow on an east-west axis and as far south as the Hay Plains and Ivanhoe, and north to Tallangatta. According to Horton (1980), however, the boundary of the Wiradjuri extends somewhat further to the north and west to encompass Gilgandra, Nyngan and most of the Bogan River. It is important to note here that the use and meaning of the term 'tribe' and the designation of lines on a map as 'tribal boundaries' have been a controversial issue (Bowdler 1983: 22). There is no doubt that there were distinctive groups which can be defined by their linguistic traits, but the designation of lines on a map as boundaries, although useful, must also be accepted as problematic. Unlike Tindale's map, the map (from NSW NPWS) reproduced in Bowdler (1983: 17, Figure 2) shows a more general relationship of the language groups known to exist in NSW.

A study undertaken by White (1986) divides Wiradjuri territory into three primary physiographic divisions:

- The riverine plains in the west;
- The transitional western slopes in between; and,
- The highlands or central tablelands in the east.

The current study area falls within the eastern division, being the central tablelands.

Prior to 1979, no systematic, regional based archaeological studies had been undertaken in the Bathurst area. The only sites recorded within the region were generally done so by interested locals or amateurs. In the 1960's, Gresser, an amateur site recorder noted that the hilly land from Bathurst to the north was covered with camp sites, all of which were located on the low ridges that lead down the creeks and springs. He also notes that although sites are usually close to the creeks, they can also, albeit rarely, be found in other locations, such as elevated ridge tops.

In 1979 Pearson undertook a pilot survey targeting two creek valleys north of the Mitchell Hwy between Lucknow and Bathurst – Lewis Ponds and Browns Creeks. Forty-two sites were recorded, with artefacts numbering between 1 and 92 at each site (Pearson 1979: 8). Analysis was undertaken on 18 sites that had 10 or more artefacts. The results of this study fed into Pearson's subsequent broad regional study, summarised below.

In (1981), Pearson¹ analysed the patterns of Aboriginal and early European settlement within the Upper Macquarie Region. This study included a small excavation component, which saw three shelters excavated, providing occupation dates of around 7,000 BP. Following is a summary of the salient points learned from these studies:

- ⇒ According to Pearson archaeological sites could be divided into two main categories, occupation sites and non-occupation sites (which included grinding grooves, scarred or carved trees, ceremonial and burial sites etc.).
- ⇒ An analysis of the location of these sites led him to build a model for site prediction which saw occupation sites occurring in places that had:
 - access to water – site size decreased with distance from water;
 - good drainage and views over watercourses or river flats;
 - level ground;
 - adequate fuel; and,
 - appropriate localised weather patterns for summer or winter occupation.
- ⇒ Such places were most frequently found on low ridge tops, creek banks, gently undulating hills and river flats and usually in open woodland vegetation (Pearson 1981: 101 as quoted in Koettig 1985: 47).
- ⇒ The location of non-occupation sites was dependent on various factors relating to site function. For example:
 - grinding grooves only occur where there is appropriate outcropping sandstone, but as close to the occupation site as possible;
 - scarred trees were variably located with no obvious patterning, other than proximity to watercourses, where camps were more frequently located, hence these provided a focus of human activity;
 - burial grounds were as close to occupation sites as geological formations would permit;

¹ M. Pearson's 1981 study is an unpublished PhD thesis from the ANU. I have been unable to directly access this work and rely heavily on summaries presented in Koettig (1985) and to a lesser extent Kelton (1996) and Navin Officer (2003).

- ceremonial sites such as bora rings and stone arrangements were located away from occupation sites.

⇒ As a result of collected ethnographic information, Pearson indicates that Aboriginal campsites may not have been used for longer than three consecutive nights and those large sites may be the result of repeated short visits rather than long stays.

Although a useful study, Koettig (1985: 49-50) considers Pearson's findings as preliminary, mainly due to the unsystematic nature of the recording of most sites used in the analysis. In her view, this would have skewed both site type (obvious manifestations) and location (areas of disturbance), therefore biasing the sample. Further the sample size of both the Wellington and other areas were considered too small to yield significant results.

Further north, a study undertaken by Balme (1986)² has contributed to our knowledge of the archaeology of the region by looking at site location with reference to preservation, both in the face of natural and incursive processes. Findings concluded that apart from the effect of historic impacts on sites, the greatest influence on the distribution of sites is that of geomorphic processes affecting site preservation and subsequent processes leading to site exposure (Balme 1986: 182 as quoted in Jo McDonald CHM: 1998: 17). Balme also found there was little scope for the assessment of the chronology of prehistoric sites in the area as so few datable contexts have been located.

A 1987 study undertaken to install a pipeline between Oberon and Bathurst recorded six sites (five open camp sites and one isolated find) while noting that four previously recorded sites may be impacted by the proposal. In terms of site location, the report concludes that sites were found where they were expected based on Pearson's 1981 distribution patterns (Lance and Truscott 1987: 18).

In 1992, a study was carried out on the eastern outskirts of Bathurst for an electricity sub-station. Four sites were recorded as a result of this project, all open camp sites, within a maximum of 350 m from water sources. Quartz and volcanics were the dominant raw materials and bi-polar stone knapping techniques were recorded indicating a late Bondaian date (Williams 1992: 10)

Further work in 1993 (Barber and Williams) again on the eastern outskirts of Bathurst recorded four sites and one isolated find. These were all located adjacent to creeklines, primarily on low spurs heading down to the creeks or at the base of slopes, with smaller sites on higher ridges. Raw materials were again dominated by quartz and volcanics, but chert and silcrete were also present.

In general, the more recent development driven studies have conformed to the site prediction model outlined by Pearson for the Bathurst area, with the more complex site foci close to water supplies, on elevated landforms and either one-off site evidence or specialised sites being found on higher elevations such as ridge tops.

² J. Balme's 1986 study has also been inaccessible and I rely heavily on summaries presented in Jo McDonald CHM (1998).

4.2 Local Context

A search of the DEC AHIMS (13.4.2005) reveals only two recorded sites within a 10 x 10 km square zone centred on the current study area. These sites are both open artefact scatters located on the southern side of the Western Railway line, one of which is only several hundred metres southeast of the current study area. It appears these two sites were recorded as a result of a 1990 study for a proposed electricity easement that connected Mt Panorama, Raglan and Bathurst. The location of these two sites is thought to relate to either the headwaters of the un-named watercourse that dissects the current study area or a similarly ephemeral watercourse running to the south.

It is important to remember that the distribution of recorded sites across this landscape reflects more the pattern of development, the ad-hoc nature of incidental recordings and factors of visibility, rather than providing a true picture of Aboriginal site distribution within the local environment.

4.3 Predictive Model for Site Location

Predictive modelling aims to establish a theoretical model for site location / distribution within a given area. This model provides a comparative situation against which the results of the investigation can be discussed, taking into account the effects of post formation processes, such as visibility, land use etc.

Proximity to a permanent water supply is generally considered the primary factor determining the location of Aboriginal camp sites. In the Sydney region, stream ordering has been used to predict the potential for site occurrence, and further to indicate the possible nature of these sites in terms of their complexity. Results of an integrated series of studies including a serious excavation component (Jo McDonald CHM 1997), suggests a high correlation between the permanence of a water source and the permanence and/or complexity of the areas' Aboriginal occupation. This was further reflected in the lithic assemblages from sites close to permanent water, which suggested that a greater range of activities were represented (e.g. tool use, manufacture and maintenance, food processing and quarrying). Sites near ephemeral water sources had evidence for one-off occupation (e.g. isolated knapping floors or tool discard), and creek junctions were also proven to be foci for site activity.

Using the concept of stream ordering, previous research within the general area (Section 4.1) and the knowledge gained from a review of the local context in Section 4.2, the following general predictions can be made regarding the nature of sites and their location in the current study area:

- In the vicinity of second order creeks, archaeological evidence may be sparse, but may indicate focussed activity (one-off camp sites and knapping events). As the un-named tributary that dissects the study area appears to be of second order status (according to the 1:25k topographic map hydrology), this type of evidence that has the potential to be present.

From the known sites outlined previously in Section 4.2, it is possible to say that the most likely sites to be encountered in the current study area are:

- Open camp sites, and

- Scarred or carved trees (frequently close to creeks but also found further afield);
- Isolated finds may occur anywhere, especially in disturbed locations near water sources or in areas close to ephemeral water – i.e. headwaters.

For the purposes of the current study site type definitions can be found in Appendix 4.

5. SURVEY METHODOLOGY

The study area was traversed using both pedestrian transects and through driving all areas. The majority of the study area was assessed on foot, with the surveyors no more than approximately 10 - 15 m apart. All areas of significant ground surface visibility were surveyed. There were no mature trees of an age or species likely to have been scarred.

The more densely grassed components of the survey area were traversed using a 4-wheel drive vehicle, with surveyors stopping and using pedestrian transects in select locations (including all areas of ground surface visibility).

6. SURVEY RESULTS

No Aboriginal sites were located during the current inspection of the proposed Regand Park subdivision study area.

7. DISCUSSION

The current study area is comprised of two landform units: the undulating slopes and the riparian creek corridor, both of which are extensively disturbed and significantly altered as a result of European practices. The entire removal of survey area 3 through quarrying has removed any potential for this area to retain evidence of Indigenous occupation. Agricultural practices have disturbed the remaining survey areas and the creekline appears to have altered through both machine operations along its banks and as a result of changed hydrology that stems from vegetation clearance and European farming practices.

No Aboriginal artefacts were detected during survey and it is considered unlikely that **intact**, sub-surface archaeological deposits remain undetected. .

In terms of the model for site prediction outlined in Section 4.3, the lack of sites recorded during the current survey may be explained by the interrelation of a number of factors:

- The extensive disturbance the site has undergone;
- The fairly ephemeral nature of the creek in pre-European times; and
- The relatively small size of the study area and the fact that no prehistoric sites may have ever existed within this area.

7.1 Aboriginal Site Assessment

The appropriate management of cultural heritage items is usually determined on the basis of their assessed significance as well as the likely impacts of any proposed developments.

Scientific, cultural and public significance are currently identified as baseline elements of this assessment, and it is through the combination of these elements that the overall cultural heritage values of a site, place or area are resolved.

As no sites were recorded as part of the current survey, no application of the significance assessment process is required.

7.2 Likely Impacts of the proposed Central West Regional freight terminal.

Construction of the proposed freight handling facility will doubtless see extensive re-modelling of the existing landscape and will include the construction of buildings, paved areas and associated infrastructure placement.

7.3 Relevant Legislation

Base line principles for the conservation of heritage places and relics can be found in the Burra Charter³, which recognizes that there are places worth keeping because they can enrich our lives on many levels. The significance of such places may be embodied in fabric (physical material), environmental setting, contents, use or its meaning to people, and should be assessed through methodical data collection. Since its adoption in 1979, The Burra Charter has become the standard of best practice in the conservation of heritage places in Australia, and heritage organisations and local government authorities have incorporated the inherent principles and logic into guidelines and other conservation planning documents. The Burra Charter generally advocates a cautious approach to changing places of heritage significance. This conservative notion embodies the basic premise behind legislation designed to protect our heritage, which operates primarily at a State level.

A number of Acts of parliament provide for the protection of Aboriginal heritage at various levels of government⁴. The three most important statutes in New South Wales are:

- *The Environmental Planning and Assessment Act (EP & A Act) 1979*
- *The National Parks and Wildlife Act 1974*
- *The Heritage Act 1977*

The Environmental Planning and Assessment Act 1979 require that environmental impacts, including cultural heritage, are considered at a land-use planning and decision making level.

Under this Act, and for the type of development proposed, Aboriginal heritage is protected through planning instruments such as Regional Environmental Plans (REP's) and Local

³ The Burra Charter defines the basic principles and procedures to be followed in the conservation of all kinds of places such as monuments, buildings, Aboriginal sites, roads, archaeological sites, whole districts or even regions. It was first adopted in 1979, based on the Australian ICOMOS (International Council on Monuments and Sites) review (1977) of the 1966 Venice Charter (Australian ICOMOS Inc. 1998).

⁴ NSW Heritage Office 1998: Living with Aboriginal Culture, p. 3

Environmental Plans (LEP's). Such plans outline permissible land use as well as identifying potential constraints. S79c of the EP&A Act states that consent authorities are required to take into account the likely impacts of development, including impacts on both the natural and built environments, and social and economic impacts in the locality.

The National Parks and Wildlife Act 1974 (as amended; particularly sections 83-91A) provides statutory protection for all Aboriginal relics and places, regardless of significance, land tenure or whether they have been previously recorded in the DEC Aboriginal Sites Register. Areas may be gazetted as Aboriginal 'places' when the Minister is satisfied that sufficient evidence exists to demonstrate that the area is or was of special significance to Aboriginal people.

Under this Act it is an offence to knowingly damage, deface or cause or permit the destruction of an Aboriginal relic or place without the prior written consent of the Director-general of the NSW DEC. Prosecution for such offences may include the imposition of financial penalties and/or imprisonment. Reporting the discovery of previously unknown Aboriginal sites to the DEC within a reasonable time of discovery is also obligatory.

The Heritage Act 1977 (as amended) protects the State's natural and cultural heritage and contains measures to protect archaeological remains. Generally, Aboriginal sites are protected by the NP&W Act, but if certain sites are deemed as having great significance, they can be further protected by a heritage order, issued by the Minister, on the advice of the Heritage Council.

6. RECOMMENDATIONS

Under Section 91 of the NP & W Act (1974 as amended) it is mandatory that all Aboriginal sites recorded under any auspices be registered with the NSW DEC Aboriginal Heritage Information and Management System (AHIMS). As a professional in the field of cultural heritage management it is the responsibility of OzArk EHM to ensure this process is undertaken. To this end it is noted that no Aboriginal sites were recorded as part of the current survey.

The following recommendations are made on the basis of:

1. Legal requirements under the terms of the *National Parks and Wildlife Act of 1974* (as amended) whereby it is illegal to damage, deface or destroy an Aboriginal relic/object without the prior written consent of the Director, DEC;
2. The findings of the current investigations undertaken within the study area; and,
3. The interests of the Bathurst Local Aboriginal Land Council.

It is recommended that:

1. No Aboriginal sites were recorded as a result of the survey of the current study area and the potential for intact, undetected, sub-surface deposits is considered low. As a result no further archaeological assessment is required and there are no constraints to the proposed freight terminal on the grounds of cultural heritage;

2. Should any 'relics' or other Aboriginal sites be identified anywhere in the study area during the course of construction, work in that area should cease and the DEC Western Region Office and the Bathurst LALC be contacted to discuss how to proceed;

1. One copy of this report should be sent to:

Mr Warwick Peckham
Coordinator Bathurst Local Aboriginal Lands Council
PO Box 1500
Bathurst NSW 2795

Manager, Western Aboriginal Heritage Unit
Cultural Heritage Division,
NSW DEC
PO Box 2111
Dubbo, NSW, 2830.

NB: This report has been sent to the BLALC by OzArk EHM P/L on behalf of the client.

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Appendix 1 – Plates



Plate 1: View east showing the high levels of ground surface disturbance associated with the primary area of previous mining activity -survey unit 3.



Plate 2: View to the northeast of the disturbances in survey area 3.



Plate 3: View north of survey area 2 which has been cleared, grazed and ploughed.



Plate 4 and 5: View of the drainage line in the centre of the study area (unit 6) showing the disturbance to banks and the rubbish that has been dumped in it.



Plate 6: View southwest in survey area 1 demonstrating the very low ground visibility outside the recently bulldozed track. The drainage line (Raglan Creek) can be seen in the mid-ground on the left where the line of trees is situated. The line of trees along the right side is lining the Great Western Hwy.



Plate 7: View of the high ground surface visibility on survey area 4.



Plate 8: View of the high ground surface visibility on survey area 4.

Appendix 2 – Aboriginal Community Correspondence



**BATHURST
LOCAL ABORIGINAL LAND COUNCIL**

149 Russell Street
Bathurst NSW 2795

PO Box 1500
Bathurst NSW 2795

Phone: 02 6332 6835
Fax: 02 6332 3623

Jodie Benton
Ozark Cultural Heritage Management P/L
Po Box 2069
Dubbo NSW 2830

Dear Jodie,

Bathurst Freight Terminal

A survey was conducted for the proposed Bathurst on Thursday 21st April 2005 for the proposed monitoring of the Bathurst Freight Terminal.

No Aboriginal sites were located due to the whole area being in a highly disturbed state, visibility was zero it was impossible to find anything of Aboriginal significance.

I am satisfied that No Aboriginal sites exist within the designated area, and I have no concerns with the proposed development proceeding.

Present:

Jodie Benton
Phil Bryant
Peter Jarrard

Ozark Cultural Heritage Management
Ozark Cultural Heritage Management
Bathurst Local Aboriginal Land Council


Peter Jarrard
Sites Officer



BATHURST LOCAL ABORIGINAL LAND COUNCIL

149 Russell Street
Bathurst NSW 2795

PO Box 1500
Bathurst NSW 2795

Phone: 02 6332 6835
Fax: 02 6332 3623

Jodie Benton
OzArk Environmental & Heritage Management
Po Box 2069
Dubbo NSW 2830

Dear Jodie,

This is confirmation that the Bathurst Local Aboriginal Land Council has received the draft report for the proposed Central West Regional Freight Terminal, Bathurst NSW.

The Bathurst Local Aboriginal Land Council has no objection and endorses the recommendations in this report.

Yours Sincerely,

W. Peckham

Warwick Peckham
Co-ordinator
8th July 2005

Appendix 3 – Log of Aboriginal Community Consultation

Consultation Database

1. Notification & registration of interest

Letters (min 10 working day response)

	Branch / Person	Date sent	Reply date requested	Method
BLALC		7.4.05		Mail
DEC		7.4.05		Mail
Nutritive Title Service		7.4.05		Mail
Register of Ab owners		7.4.05		Mail
Local Council		7.4.05		Mail

Advertisement

	Date of Ad commissioned	Date appearing	Closing date Ex of I
Bathurst Newspaper	7.4.05	9-14.4.05	2.5.05

Community Responses

	Name	Date	Details	Method
BLALC	Warwick Peckham	8.4.05	Participation in survey requested	Phone
Bathurst City Council				
Register of Ab owners				
DEC				

2. Preparation for the assessment (design)

Stakeholder (21 day response)

	Person	Date sent	Reply date requested	Method
BLALC	Warwick Peckham	17.4.05		phone

3. Drafting & Review

Invite stakeholders to review draft (set own date)

	Person	Date sent	Reply date requested	Method
BLALC	Warwick Peckham	17.5.05		e-mail

Draft requested by

	Person	Date sent	Reply date requested	Method
	Warwick Peckham	17.5.05 and 4.7.05	11705	e-mail

Community Responses on Draft

	Name	Date	Details	Method
	Warwick Peckham	8.7.5	supported Recommendations	fax

4. Final Report

		Date sent		Method
Sent to	BLALC	10.7.05		hard copy

Appendix 4 – Site Type Definitions

Open camp sites

Often called stone artefact scatters, these sites (for the purposes of the DEC AHIMS database) were in the past defined by the presence of two or more stone artefacts located within 50 m of one another. Current guidelines, however, delineate no hard and fast determinations on requisite artefact numbers, more loosely describing these campsites as places exhibiting evidence of past human activity. This can be, and is most frequently, in the form of stone artefacts, but may also include other evidence such as hearths or midden material. Such sites provide evidence for the range of activities that may have been undertaken at a particular place, including the production of stone tools and the preparation of food including the butchering of animals or grinding of seeds. However, the distinction between a single, isolated artefact versus a place where numerous artefacts have been recorded together provides a necessary division in terms of the possible information that a site can reveal about past activities. Further information recorded about open sites includes assessments of the sites' integrity (how intact the site is) and subsequently whether sub-surface deposits are thought to be present.

Isolated Finds

An artefact, usually of stone, but possibly of other materials, that is located but has no relationship to other identifiable archaeological features.

Scarred Trees

This site type results from the deliberate removal of bark (and sometimes wood) from trees, for the purpose of obtaining raw material for the manufacture of various items of material culture – i.e. shields, coolamons, shelters, canoes, and cradles. They may also result from foraging and hunting - for instance, toe holes cut in trees to allow access to upper branches and hollows, and axe marks around natural hollows for the extraction of small tree-living fauna (such as possums or birds) or honey.

The identification and interpretation of a scar as being Aboriginal in origin can often be difficult, as bark can be removed from trees by a variety of means e.g. animal and bird foraging, the natural breaking off of tree limbs, lightning strikes to the tree, the result of machinery damage to trunks and the removal of bark by Europeans to define land boundaries. To assist archaeologists in the accurate identification of Aboriginal scarred trees, the DEC Western region provides a set of criteria against which each scar must be assessed.

These diagnostic criteria are as follows:

1. *The scar must not touch the ground* - (scars resulting from fire, fungal attack or lightning nearly always reach the ground). Such a termination does not necessarily preclude an Aboriginal origin. Ethno-historic accounts of canoe manufacture occasionally demonstrate scarring to ground level. If the scar does run to the ground, the sides must be relatively parallel (i.e. not triangular). It must be noted that discussion with Native Title from other areas suggests that scars may indeed extend to the ground, especially when the bark is planned for use in a shelter. This information is derived from oral histories recorded in Dubbo and observations from further afield;

2. *The ends of the scar should be squared off or evenly tapered* - Different shapes at the top and bottom (e.g. pointed at top, squared at bottom; round at top, flaring at bottom) are suggestive of natural processes (e.g. branch loss);

3. *The sides of the scar should be parallel or symmetrical* - Few natural scars are likely to have these properties, with the possible exception of fire scars which may be symmetrical but are usually wider at their base. Modern surveyors' marks are typically triangular, and often adzed. These also (regardless of shape) usually have a number carved in the wood, within the scar;

4. *The length of the scar must be on the same axis as the tree and not oblique or slanting across the tree or the branch* - Scars which are natural in origin tend to have irregular outlines, sometimes have irregular regrowth and may occur against the axis of the tree.

5. *The tree should be reasonably old – i.e. over 100 years* - The tree upon which the scar is found should be old enough (i.e. of sufficient age) to have been used by Aboriginal people in (at least) a semi-traditional manner. This means the tree should be at least approximately 100 years old. The age of the scar should also be reflected in the thickness of the regrowth. Young scars (e.g. some natural scars caused by branches falling or birds or horses gnawing, have characteristically thin regrowth);

6. *There must be no obvious natural or other artificial cause* such as a branch rip, lightning strike, cockatoo chewed bark or healed bark tears from machinery damage or car impact – Any signs that the scar may not be Aboriginal should be carefully assessed; and,

7. *The tree must not be an introduced species* – For obvious reasons, the tree upon which the scar is found should be endemic to the region, i.e. this excludes historic (exotic) plantings.

Also helpful in scarred tree identification, but not within the DEC criteria are the following points:

8. *Axe or adze marks* - A scar with cut marks on the original wood is likely to be anthropogenic in nature (i.e. as a result of human actions). The location and shape/size may lend support to the scar's origin. For example stone axe marks would indicate an Aboriginal origin, while steel axe marks post-date the arrival of Europeans. These of course could still have been made by an Aboriginal person in the post-contact era; and,

9. *The presence of epicormal growth* – Many scars of Aboriginal origin tend to have an epicormal shoot originating at the base of the scar. This is a new branch shooting from the point of damage and is part of the trees self preservation mechanism.

As noted in the DEC criteria, any tree that does not fit these rules cannot be accepted as likely to be of Aboriginal origin. This may mean that a few authentic scars are omitted from the Aboriginal Sites register, but it is the only means to establish consistency in identification.

However, even when applied, the above criteria cannot always provide a definitive classification, and a natural origin for the scar cannot be ruled out. For this reason interpretations of Aboriginal origin are qualified by the recorder's degree of certainty. The following categories are used:

- DEFINITE ABORIGINAL SCAR

This is a scar which conforms to all of the criteria stated above and/or has in addition a feature or characteristic that provides definitive identification, such as diagnostic axe or adze marks, or a historical identification. All conceivably natural causes of the scar can be reliably discounted.

- ABORIGINAL SCAR

This is a scar which conforms to most of the criteria, and where an Aboriginal origin is considered to be the most likely. Despite this, a natural origin cannot be completely ruled out.

- POSSIBLE ABORIGINAL SCAR

This is a scar which conforms to most of the criteria but where an Aboriginal origin would appear unlikely⁸.

For the purposes of the current study, on the advice of Allan Hutchins (DEC Western Region), only scars of the first two categories have been recorded as sites to be entered into the DEC ASR. As a general rule, the "Aboriginal scar" and "Probable Aboriginal scar" categories have been collapsed into one, called "Aboriginal scar".

Natural Mythological or Cultural / Ceremonial sites

Natural mythological sites can be any natural feature and like a cultural / spiritual are not detectable without the traditional knowledge of specific areas. Lindsey Moran from the BLALC is a keeper of such knowledge and was present in an effort to establish the presence of any such site type.