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Aboriginal Cultural and Archaeological Assessment

Lot 22 DP 582824 and Lot 221 DP 823112,
Cnr Retreat Road and Bridgman Roads,
Singleton

Report to
Hunter Development Brokerage Pty Ltd
Maitland NSW. NSW
Thursday 17th March, 2011

By Len Roberts B.A. (Arch/Hist); Grad. Dip. Comp; Dip. Sp. Ed;
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Singleton

This report has been compiled at the request of Hunter development Brokerage to form part of the documentation for a rezoning Application to be considered by Singleton Council.

The report is compiled in three (3) parts:

- Community Consultation report (A)
- Aboriginal Cultural Assessment Report (B) in accordance with the 2010 Amendments to the NPWS Act, 1974
- Aboriginal Archaeological Heritage Assessment (Report (C).

Background

The study area was previously surveyed for a different proponent in January 2005 and several artefact scatters identified.

In 2008, because 3years had lapsed, DECCW advised Singleton Council, that an update of the community consultation needed to occur, before the rezoning application should be considered. This consultation was undertaken in July 2008.The Consultation Meeting was held on 11th July, 2008 at Singleton Services Club.

At the meeting the following recommendations were made:

1. That the previous recommendations be followed
2. That the proponent ensure that representatives of the Aboriginal community are present when earthworks occur to ensure due diligence regarding Aboriginal culture
3. That the proponent enter into a memorandum of understanding with the Aboriginal community over culture and heritage management and assessment
4. That if any Aboriginal Objects are to be impacted by any of the developments that a permit be obtained from DECC.

The recommendation from the original report was:
• That, as there is impact on Aboriginal Objects, there is impediment to the proposed development for Aboriginal Cultural reasons and an application to destroy be obtained from the DEC provided, that the proponent enters into negotiation with the Aboriginal community for compensation for the loss of Aboriginal objects.

The proponent is now lodging a new rezoning application over the study area. In order to do this the assessment needs to be considered in the light of the changes to the NPW&W Act 1974 as amended in 2010. This assessment requires consultation in accordance with the prescribed regulations and the development of an Aboriginal Cultural Heritage report in addition to the archaeological report. In addition the Aboriginal Community consultation Requirements need to be followed.

Aboriginal Heritage Impact

Under section 86 of the NPW Act, it is an offence to 'harm' an Aboriginal object. 'Harm' means any act or omission that:

- destroys, defaces, damages or desecrates the object
- moves the object from the land on which it had been situated, or
- causes or permits the object to be harmed.

There are now two types of offences for harming an Aboriginal object:

1. An offence of harming an object which a person knows is an Aboriginal Object (a 'knowing offence')
2. An offence of harming an object whether or not a person knows it is an Aboriginal Object (a 'strict liability offence').

Technically and legally a rezoning cannot harm an object. A rezoning however changes the existing landuse of an area. Developments within that new zone have the potential to harm Aboriginal Objects if such Objects exist upon or under the land.

Even if Aboriginal Objects exist on the land, future development may not necessarily harm such Objects as it may be possible to ensure harm does not occur by the way the development is structured and managed.

If the proposed development will or is likely to harm an Object then an Aboriginal Heritage Impact Permit (AHIP) needs to be obtained.

During the original archaeological assessment artefact scatters (Objects) were identified upon the land. As stated previously, a rezoning will not in itself impact upon those Objects. However any future development may have the potential to harm those Objects. Such possibility will depend on the masterplan for future development. Harm may be avoided through appropriate design and layout. If not then an AHIP will need to be applied for.

An AHIP will not be considered unless there is valid development consent.

Therefore an AHIP cannot be applied for until the rezoning is approved and a subsequent concept or masterplan is developed for the land and the potential impact on Aboriginal Objects is known.

Conclusion

This report has identified the areas of Aboriginal heritage upon the land, the cultural significance of the objects through extensive Aboriginal Community consultation and has concluded that it is possible to mitigate any future harm to Aboriginal Objects identified and that existence of such Objects is not a constraint to the rezoning approval.

The mitigation measure will more than likely require an AHIP to repatriate some or all of the objects to a keeping place on or off the land as determined by the Aboriginal Community once the rezoning

is approved. If the rezoning is not approved no further action is required by the Aboriginal community as the Objects will be left *in situ*

The report sets out various recommendations for future actions should the rezoning be approved and should be included in the conditions for any approval.

Len Roberts
BA; Grad Dip Comp; Dip Sp ED; TC
Archaeologist
17/03/2011

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PART A

Aboriginal Community Consultation

Lot 22 DP 582824 and Lot 221 DP 823112,
Cnr Retreat Road and Bridgman Roads,
Singleton

Report to
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Maitland. NSW
Thursday 17th March, 2011

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Myall Coast Archaeological Services

Part A Aboriginal Community Consultation

Lot 22 DP 582824 and Lot 221 DP 823112,
Cnr Retreat Road and Bridgman Roads,
Singleton

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Appendix
(A) Expression of interest Correspondence
(B) Presentation of project information and minutes
(C) Information Gathering correspondence

Aboriginal Community Consultation Process

The main phases of consultation with Aboriginal people are:

1. Informing Aboriginal people about the nature and scope of the proposal.
2. Understanding what might be present in the landscape and its cultural significance.
3. Determining the potential impacts and the proposed strategies to deal with them.
4. Reviewing the report.

All parties are expected to comply with and progress through the stages outlined in the Consultation Requirements in an efficient manner to ensure the successful achievement of the intended outcomes of these requirements.

Stage 1 – Notification of project proposal and registration of interest (Appendix A)

a) 21/10/10 Ascertained the names of Aboriginal people who may hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or places by:
Writing to DECCW EPRG Northern regional office, Wannarua Local Aboriginal Land Council, the Registrar, Aboriginal Land Rights Act 1983, the National Native Title Tribunal, Native Title Services Corporation Limited Singleton Shire Council and Hunter River catchment management authority

Only DECCW were able to provide a list of possible stakeholders, which contained a list of individuals and organisations who had previously indicated to DECCW that they would like to be advised of cultural investigations within the upper Hunter Area. Native Title Services replied that they would contact and advise their constituents of the project.

b) 16/1/11/10 Wrote to the Aboriginal people whose names were obtained in (a) and the relevant Local Aboriginal Land Council to notify them of the proposed project and placed a notice in the local newspaper calling for expressions of interest in the project by 5pm 1/12/10 (Appendix B).

c) The following expressed an interest and were registered for the project.

Name	Type
WLALC	A. Org
Kathie Kinchela (Steward)	Individual
Arthur Fletcher	Individual
Des Hickey	Individual
Ungooroo	A. Org
Michelle Stair	Individual
WNAC	A. Org
Rhoda Perry	Individual
Tracey Skene	Individual
Tom Miller	Individual
Paulette Ryan	Individual
Mark Hickey	Individual
Rhonda Ward	Individual
Margaret Matthews	Individual
John Matthews	Individual
Victor Perry	Individual
Maree Waugh	Individual

Stage 2 – Presentation of information about the proposed project (Appendix B)

a) Initiated arrangements for presenting the proposed project information to the registered Aboriginal parties (from Stage 1) by holding meeting for stakeholders at Singleton Library 13th December 2010.

b) Presented, the proposed project information as required to the stakeholders. The presentation and discussion was minuted.

c) 18/12/2010 Copy of project information and minutes of meeting forwarded to all stakeholders to ensure that all necessary information about the project was provided and to enable registered Aboriginal parties to provide information about the cultural significance of Aboriginal object(s) and/or place(s) that may be present on the proposed project area. Closing date to provide that information was 15th January, 2011 but extended to 22nd January, 2011.

d) Opportunity for registered Aboriginal parties to visit the project site. Rhonda Ward and Arthur Fletcher expressed an interest in attending a site view. Visit was arranged for 20/1/11.

No additional information regarding potential cultural items or significance was received from the stakeholders. Noel Downes of WLALC corresponded that he had not received the maps he had requested at the meeting and that he needed more time. Noel was advised that in the email sent to him on the 18th December, he was asked to confirm if he still required the maps. He had overlooked that request and the maps were hand delivered to him the next day. He also believed that the information he provided at the meeting regarding a potential men's area was not being taken seriously and that he needed more time to investigate the matter with his members.

Noel was advised that the deadline of the 22nd was to provide additional information regarding cultural potential of the area so that all stakeholders could be provided with the information to commence stage 3 of the consultation process and that he would have more time than he requested to undertake discreet investigations during stage 3. The worry was that unless that information was clarified it would be inappropriate to determine who could undertake the field survey. He was advised that the field survey would only occur after stage 3 and that he could clarify the information during the feedback time for stage 3 which would commence at the close of stage 2 (22nd January) and that there would be a feedback period of 28 days minimum before the close of stage 3.He was advised that his request for additional time for the stage 2 could not be agreed and that he was probably misunderstanding the process stages.

Stage 3 – Gathering information about cultural significance (Appendix C)

Aim

To facilitate a process whereby registered Aboriginal parties can:

- Contribute to culturally appropriate information gathering and the research methodology
- provide information that will enable the cultural significance of Aboriginal objects and/or places on the proposed project area to be determined
- have input into the development of any cultural heritage management options.

a) 31/1/2011 provided the proposed methodology(s) for the cultural heritage assessment to the registered Aboriginal parties and given the opportunity to review and provide feedback to the proponent within a minimum of 28 days (28/2/2011)

b) Provided cultural information pro forma to registered Aboriginal parties to identify:

1. Any protocols to be included in the assessment methodology.
2. Determine whether there are any Aboriginal objects of cultural value to Aboriginal people in the area of the proposed project
3. Determine whether there are any places of cultural value to Aboriginal people in the area of the proposed project
4. Determine ways to hold and source sensitive information
5. Suggest ways of managing any Objects found (to avoid or mitigate harm and/or conserve known Aboriginal object(s) and/or place).

c) Provided opportunity to present and discuss feedback at a meeting on Wednesday March 2nd at 6.30pm at Singleton Library. The timing of the meeting was to give those who may be working opportunity to attend.

d) Received feedback in the form of written advice from WLALC and verbal advice at a meeting made available to all stakeholders.

Stage 4 – Compilation of Final Cultural Heritage Report

a) Final report sent to all stakeholders (PART B of this report)

Signed

(Archaeologist)
16/03/2011

Myall Coast Archaeological Services

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PART B

Aboriginal Cultural Assessment

Lot 22 DP 582824 and Lot 221 DP 823112,
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Report to
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Myall Coast Archaeological Services

Aboriginal Cultural Assessment

Lot 22 DP 582824 and Lot 221 DP 823112,
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Singleton

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(A) WLALC Response
(B) Feedback meeting minutes
(C) WLALC Response final
(D) AHIMS Search

1. Introduction

1.1 Background

This report has been prepared at the request of Hunter Development Brokerage (HDB) Maitland NSW, to assess possible impact a proposed residential rezoning/subdivision of Lot 22 DP 582824 and Lot 221 DP 823112, Cnr Retreat Road and Bridgman Roads, Singleton, may have on Aboriginal Cultural Heritage by:

1. Identifying whether or not Aboriginal objects are, or are likely to be, present in an area;
2. Determining whether or not their activities are likely to harm Aboriginal objects (if present); and
3. Determining whether an Aboriginal heritage Impact Permit (AHIP) application is required.

Topographical map reference: Singleton 9132-4N 2nd Edition 328500 E: 6401500 N

The property is zoned rural. The proposal is for a rezoning to rural residential which would allow small rural allotments, containing housing envelopes and associated infrastructure. The design concept will be based around constraints identified by this and other studies. Figure 2 shows the study area. The overall site has an area of about 32.5 ha and is bounded by Retreat and Bridgeman Roads.

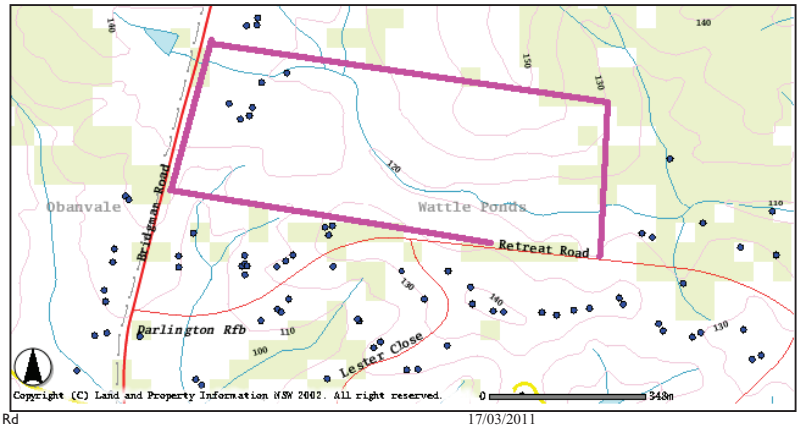

Figure 1 Study Area

The study area was previously surveyed for a different proponent in January 2005 and several artefact scatters identified.

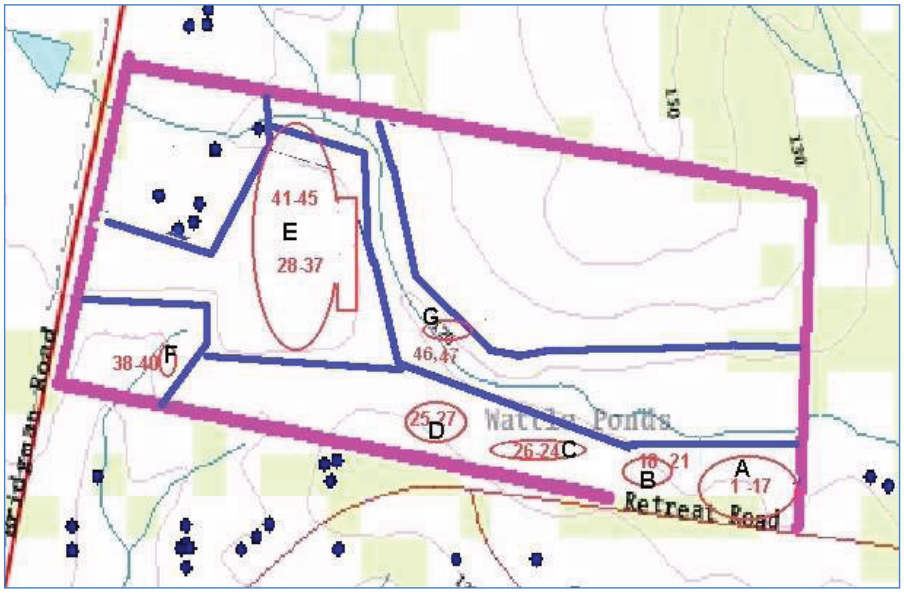

Figure 2 Identified artefact scatters (A-G)

Survey unit	**Topography**	***Surface slopes***	**Visibility**	***Area available for detection***	**finds**	***Archaeological Survey constraints***
Upper Hillslope Unit 1	East facing slope, grass cover cropped short. Disturbed through cut and fill and buildings.	<5%	Fair	70%	nil	Disturbed house paddock and horse arena
Slope Unit 2	Well grassed, East facing slope, sloping towards creek.	<5%	Very good	100%	Open campsite E	Soil disturbance. Profile compromised
Gully Unit 3	Steep incised gully. Not well covered in grass highly eroded with soil exposure	>10%	Very good	100%	Artefact scatter and potential to conceal artefacts	Soil erosion
Slope Unit 4	grassed gentle slope to the north with exposure from sheet erosion and woodlands in places	<5%	Very good	100%	Campsites A, B, C, D	Pasture cover, soil integrity from erosion
Creek Unit 5	Gentle shallow creek very eroded with fill and ballast in places	N/A	Very good	100%	Artefact Scatter G	Fill and modifications
Hillslope Unit 6	South facing well grassed hillslope with intermittent tree coverage regrowth.	10%	good	80%	nil	Slope, highly susceptible to fast run off. Pasture cover

Table 1 Assessment analysis

1.2 Additional Assessment

In 2008, because 3years had lapsed, DECCW advised Singleton Council, that an update of the community consultation needed to occur, before the rezoning application should be considered. This consultation was undertaken in July 2008.The Consultation Meeting was held on 11th July, 2008 at Singleton Services Club.

At the meeting the following recommendations were made:

1. That the previous recommendations be followed
2. That the proponent ensure that representatives of the Aboriginal community are present when earthworks occur to ensure due diligence regarding Aboriginal culture

3. That the proponent enter into a memorandum of understanding with the Aboriginal community over culture and heritage management and assessment
4. That if any Aboriginal Objects are to be impacted by any of the developments that a permit be obtained from DECC.

The recommendation from the original report was:

- That, as there is impact on Aboriginal Objects, there is impediment to the proposed development for Aboriginal Cultural reasons and an application to destroy be obtained from the DEC provided, that the proponent enters into negotiation with the Aboriginal community for compensation for the loss of Aboriginal objects.

The proponent now intends to lodge a new rezoning application over the study area. In order to do this the assessment needs to be considered in the light of the changes to the NPW&W Act 1974 as amended in 2010. This assessment requires consultation in accordance with the prescribed regulations and the development of a Aboriginal Cultural Heritage report in addition to an archaeological report.

2. Aboriginal Community Consultation Process

The main phases of consultation with Aboriginal people are:

1. Informing Aboriginal people about the nature and scope of the proposal.
2. Understanding what might be present in the landscape and its cultural significance.
3. Determining the potential impacts and the proposed strategies to deal with them.
4. Reviewing the report.

- **Stage 1 – Notification of project proposal and registration of interest**

a) Ascertained the names of Aboriginal people who may hold cultural knowledge relevant to determining the significance of Aboriginal objects and/or places by writing to the relevant authorities as per the Consultation requirements.

b) Wrote to the Aboriginal people whose names were obtained in (a) and the relevant Local Aboriginal Land Council to notify them of the proposed project and placed a notice in the local newspaper calling for expressions of interest in the project.

c) The following expressed an interest and were registered for the project.

Name	Type
WLALC	A. Org
Kathie Kinchela (Steward)	Individual
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Tracey Skene	Individual
Tom Miller	Individual
Paulette Ryan	Individual
Mark Hickey	Individual
Rhonda Ward	Individual
Margaret Matthews	Individual
John Matthews	Individual
Victor Perry	Individual
Maree Waugh	Individual

Table 2 Registered Stakeholders

- **Stage 2 – Presentation of information about the proposed project**

a) Initiated arrangements for presenting the proposed project information to the registered Aboriginal parties (from Stage 1) by holding meeting for stakeholders at Singleton Library 13th December 2010.

b) Presented, the proposed project information as required to the stakeholders. The presentation and discussion was minuted.

c) Matters raised at 13th December 2010, information meeting:

  - Noel Downes advised there was oral knowledge of a men's sight in the "district" of the study area but known location was not known. Permission would be required from the knowledge holder to release such knowledge.

- What about living culture, such as fruit trees, birds etc.? They technically cannot be protected but they add to the "atmosphere" of an area and add to the cultural assessment information to be considered.

- Wetlands are in the vicinity which would have been a good resource area

- Victor Perry Advised that he had been involved in the original fieldwork and what was found was stone artefacts that are typical throughout the area. He felt there was little likelihood of subsurface artefacts.

d) 18/12/2010 Copy of project information and minutes of meeting forwarded to all stakeholders including those not in attendance to ensure that all necessary information about the project was provided and to enable registered Aboriginal parties to provide information about the cultural significance of Aboriginal object(s) and/or place(s) that may be present on the proposed project area. Opportunity for registered Aboriginal parties to visit the project site. Rhonda Ward and Arthur Fletcher expressed an interest in attending a site view. Visit was arranged for 20/1/11.

e) No additional information was provided by the stakeholders. Noel Downes had as yet been unable to confirm the presence of a men's site. Such information would be confirmed during the comment period on the draft cultural report. The concern was that unless that information was clarified it would be inappropriate to determine who could undertake the field survey.

Stage 3 – Gathering information about cultural significance

Draft cultural report was forwarded to the stakeholders seeking their comments and feedback within 28 days. The report contained information with respect to the known issues within and around the study area as well as the information provided at the meeting and during the initial feedback stage. The outline of information provided follows.

Known information

Despite the abundance of artefacts across the study area, the potential for finding stratified deposits was considered low due to the erosion and shallow nature of the soil particularly on the slopes.

The artefacts in general were typical of sites throughout the region. It would appear by the material composition of the artefacts, the parent material was probably exported on site. The majority of the artefacts were basically tools to aid hunting and food preparation and not tools for implement manufacture or reduction. The cores were used to make flakes for spears and scrapers; and tools such as hammers etc were not found in association with the cores which is problematic and poses the question why? Cores are used for the creation of stone pieces (flakes) for specific purposes. Some type of hammer/striker is required to manufacture the flakes. Several reasons can be postulated. First, the more apparent tools have been collected over the years since European occupation. Second, perhaps cores and parent material were readily available, but precise flake manufacture instruments were not so easily obtainable and therefore more valuable and carried by the user from place to place. Third, specific stone working tools would never be as plentiful as flakes and cores and proportionally have a greater chance of remaining hidden or undetected.

Generally the artefacts visible on eroded soil surfaces within the study area tend to suggest widespread occupation of the area on either a recurrent basis, or over a long period of time. The stone flaking debris is interpreted as representing a continuum of occupation debris deriving from repeated occupation events probably on a seasonal basis. The visibility of the amalgamated artefact assemblages depends on the balance between vertical movement within the soil profile and erosion. The artefacts were observed on areas of moderate erosion, where artefacts are present as a 'gravel' lag on the eroded surface and are clearly subject to both vertical and lateral reworking. There is neither reason to assume that they are a result from any single activity or repeated activity type, particularly as no stone working tools were observed, nor knapping floors or hearths. Further up the slope toward the southern boundary and parallel to the line of finds, electrical or communication trenching was observed and had similar exposure. However, no artefacts were observed. Whilst many reasons could be advanced for the lack of artefacts there is the strong possibility that the 40-50 metre mark from the creek was the normal occupation pattern.

It would appear that although there were areas of distinct concentration of artefacts across the study area, they were but microcosms of a larger enmeshed occupation area. 'They appeared to be rooms of a much larger house used over a long period of time.' Placing the study area in today's perspective it would appear to be a substantial guest house used by generations of the same family for their annual holiday.

There are a high proportion of relatively large fragments of stone cores in the overall number of artefacts, and the cores also retain relatively large amounts of cortex on dorsal and lateral surfaces, and on the platform. This characteristic suggests proximity to a source of suitable raw materials in cobble form. Silcrete cobbles could have come from the Hunter River, but also from outcrops which are within reasonable distance of the study area. What seems certain is that the study area did not contain the source of the raw material and therefore not a continuous manufacture area or "stone tool factory".

The evidence seems to suggest an intermittent but frequent occupation site perhaps a favoured area for visiting groups or an overnight stay for a local group on the journey to the Barrington's. Unfortunately the analysis of the stones is unable to reveal the complete picture.

What does emerge however is the pattern of occupation 40-50 metres from a creek line. No artefacts were observed higher up the slope, despite good visibility and similar erosional characteristics. Artefacts were observed within the creek margins but very few and were obvious by their position to have been washed down to their position. One would have expected artefacts in survey unit 1, but as it was the house paddock, with a horse arena and altered landscape through cut and fill it is understandable that no artefacts were observed. The location of the house has a very favourable aspect and position and it would have been interesting to determine if Aboriginal occupation occurred at the house site or was limited to the 40-50 metre mark from the creek. Artefacts were observed over the fence on the neighbouring property along the creek margins.

The location of the deposits suggested they were basically in-situ although the stratigraphical integrity was compromised.

Issues to be addressed from Initial Meeting

Is there a men's site that may affect the study area? What is the atmosphere/background to the study area that needs to be taken into account when determining significance? To what extent do the wetlands of the area affect the study area?

Proposed methodology

1. As it has been over 5 years since the original survey, rather than attempt to just relocate the previous artefacts, undertake a fresh survey in accordance with the archaeological code.
2. Discreetly obtain relevant information regarding Men's area to determine if it affects the study area. This information to be provided preferably by the closing date or orally at the meeting within protocols.
3. Community to advise of "cultural atmosphere" that may affect the study area.
4. Hold a stakeholder meeting in the first week of March to discuss the feedback and determine who should be involved in the survey within proponent's budget.
5. Community to suggest preferred ways of managing cultural evidence likely to be observed. Such management will be adjusted according to what is actually observed.

Study Area Assessment Context

Previous archaeological studies have been undertaken on adjacent land and near the study area.

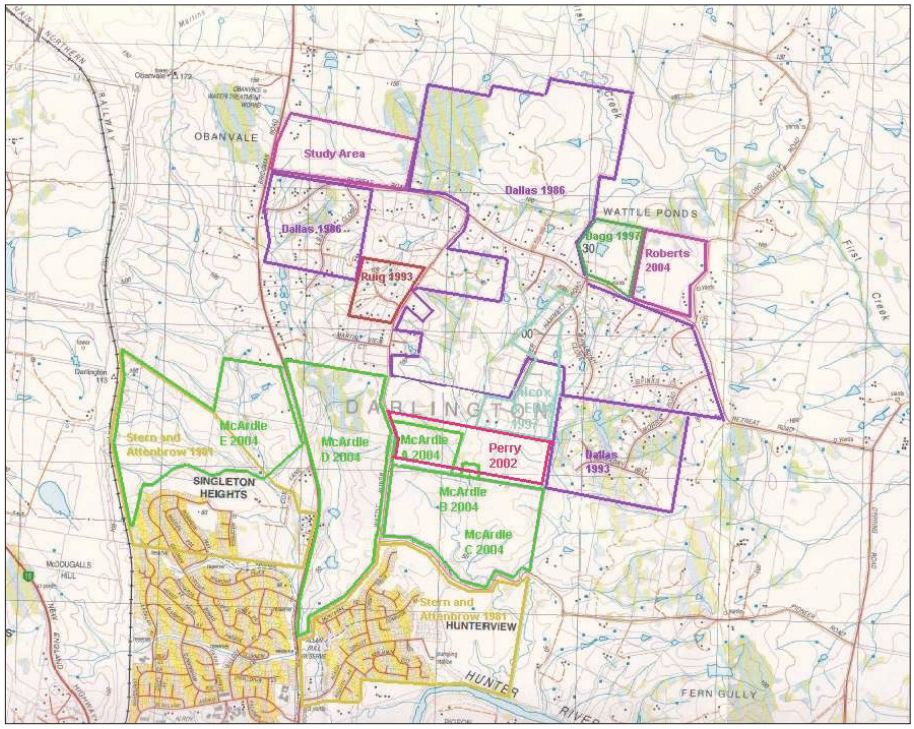


Figure 3 Previous studies undertaken in the area

Report	Location	Author and date	Type of survey	Area Surveyed	Finds
North Singleton Proposed Housing Subdivision: Survey for Archaeological Sites	2km SW of Study Area	Stern N Attenbrow V 1981	area	3sq.km	86 sites 52 open campsites incl. 1 scarred tree 34 isolated finds
Archaelogical Reconnaissance of Singleton Shire Council Land Developments known as Wattle Ponds and the Retreat	South of Study area, opposite side of road	Dallas M 1986	area	3sq. km	36 sites 20 open campsite 14 isolated finds 2 scarred trees
Appendix111: Report on additional Survey and Complete Site Management Requirements for the Retreat and Wattle Ponds at Singleton Heights, Singleton	South of Study Area, opposite side of Road	Dallas M 1986	area	40ha	11 Sites
Archaeological Survey of Singleton Shire at Morris Rd Singleton Heights	3km SE of Study Area	Dallas M 1993	area	600sq metres	2 open artefact scatters
An Archaeological Survey of Proposed Rural Subdivision Development on Portion 68 Wattle Ponds Rd Singleton	0.5km south of Study Area	Ruig J 1993	area	16ha	2 open campsite
The Retreat Area Rural Residential Subdivision, Singleton Heights, Archaeological Assessment	1.5km SE of Study Area	Silcox 1997 & ERm 1997	area	42ha	17 open campsites 5 isolated Finds
Archaeological Assessment Proposed Rural Residential Subdivision Portion 119 Retreat Rd, Singleton NSW	1.5km SE of Study Area	Dagg l Feb 1997	area	16.2ha	1 open campsite 2 isolated Finds
Archaeological Assessment Lot 120, DP 752 455 (Retreat Road, Singleton	3km west of study area on same Road	Roberts, L 2004	area	25ha	nil
Archaeological assessment of Singleton Councils remaining lands (completed but not registered by DEC)	2km south of study area	McCardle, P 2004	area	3 sq km (approx)	Numerous, conservation zone proposed

Table 3 Previous studies

3.0 Community Feedback

Aim

To facilitate a process whereby registered Aboriginal parties can:

(a) Contribute to culturally appropriate information gathering and the research methodology

(b) Provide information that will enable the cultural significance of Aboriginal objects and/or places on the proposed project area to be determined

(c) Have input into the development of any cultural heritage management options.

In order to achieve appropriate feedback the following information to be addressed was forwarded to the stakeholders. Only Wonnaruah Local Aboriginal Land Council responded in writing whilst those who attended the feedback meeting in March endorsed the comments from WLALC.

Cultural Assessment response sheet for Lot 22 DP 582824 and Lot 221 DP 823112, Cnr Retreat Road and Bridgman Roads, Singleton

(Please fill in your comments and return by 28/2/2011. You may use your own comment sheet. You may respond to any point with no comment or no further information to add.

Protocols you may wish to have included in the assessment methodology	
Are there any Aboriginal objects of cultural value to Aboriginal people in the area of the proposed project	
Are there any places of cultural value to Aboriginal people in the area of the proposed project	
Ways to hold and source sensitive information	
Ways of managing any likely Objects found	

Do you have knowledge of any special sites that may affect the study area?	
Any Comments on “cultural atmosphere”	
Any Comments on wetlands resource	
Any comments on rarity of objects likely to be found	
Any comments on proposed field survey methodology	
Any other comments	

Response

Whilst the WLALC response is attached as appendix (A) and the minutes of the feedback meeting as appendix (B) it is pertinent to summarise the findings as follows:

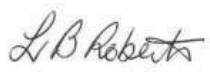
1. There was concern regarding the consultation process, particularly as it seemed to put too much emphasis on consultation for the sake of consultation and missed the importance of Aboriginal people just "knowing" about an area.
2. Aboriginal people's time is just as valuable as consultants and proponents and there seemed to be too much time spent on talking, reading and responding rather than doing and assessing.
3. Consultation and advice ought not to be free.
4. Extreme concern was expressed over the fact that what was there was already known to the community, archaeologist and others and consultation was being overdone. In the words of the WLALC ...you must be joking... you know what is there as you have told us several times. Or as another expressed in the initial meeting ... the archaeologist should just tell us what they believe to be there based on their research as they are the professionals... we will tell you if you are correct.
5. There are known artefacts on site that have been previously assessed and are neither rare nor of scientific value. A permit to salvage or repatriate should be applied for in consultation with the stakeholders.
6. There is no men's area within 500m of the study area.
7. The "Wattle Ponds" wetlands do not affect the study area.
8. The Aboriginal community should be compensated for the loss of their culture irrespective of the low scientific value.
9. The Aboriginal community should be subcontracted to undertake any salvage, collection or repatriation of the artefacts.
10. Difficult to assess protocols as it is a rezoning and no development footprint or master plan is available. If the known development was available what happens to the artefacts would depend on the level of impact if any.

4. Recommendations

The following recommendations are based on the applicable legislation and the Aboriginal Community consultation and feedback.

1. There is no scientific or archaeological significance to the known artefacts within the study area.
2. All artefacts are of cultural significance, but the Aboriginal community has no objection to the rezoning proceeding provided any impact is managed through an AHIP or management plan.
3. All Aboriginal objects and sites will need to be, if harm cannot be avoided, at least salvaged and consultation undertaken with the Aboriginal Community to determine a safe keeping place or reburial for them
4. Because the proposal is for a rezoning further consultation and field assessment may be required once the impact of the development is known.
5. As an Aboriginal Heritage Impact Permit (AHIP) can only be applied for when a development is approved, it is recommended that an application for an AHIP be submitted to DECCW if the proposed rezoning is approved.
6. This report and previous reports and if necessary any additional assessments be used to support the AHIP application.
7. An Aboriginal Cultural Education Program should be developed by the proponent for the induction of personnel involved in the construction activities in the project area. The Local Aboriginal Land Council or Aboriginal community businesses may be able to assist in delivery of such induction.

Signed



(Archaeologist)
13/3/2011

Appendix A LALC Response

Myall Coast Archaeological Services

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PART C

Aboriginal Archaeological Assessment

Lot 22 DP 582824 and Lot 221 DP 823112,
Cnr Retreat Road and Bridgman Roads,
Singleton

Report to
Hunter development Brokerage Pty Ltd
Maitland. NSW
Thursday 17th March, 2011

By Len Roberts B.A. (Arch/Hist); Grad. Dip. Comp; Dip. Sp. Ed;
("Tall Pines", Tea Gardens. 2324 Ph: 49 971011)

Myall Coast Archaeological Services

Aboriginal Heritage Assessment

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1. Introduction

1.1 Background

This report and study has been prepared at the request of Hunter Development Brokerage, to assess possible impact a proposed residential rezoning may have on Aboriginal Cultural Heritage on land at Bridgeman and Retreat Roads Singleton (Study area). A preliminary archaeological and Aboriginal Heritage assessment is required to address any potential opportunities and constraints to future development of the study area.

Figure 1 shows the regional location of the study area.

Map 1 Regional Location

Topographical map reference: Singleton 9132-4N 2nd Edition 328500 E: 6401500 N

The property is zoned rural. The proposal is for a rezoning to rural residential which would allow small rural allotments, containing housing envelopes and associated infrastructure. The design concept will be based around constraints identified by this and other studies. Figure 2 shows the study area. The overall site has an area of about 32.5 ha and is bounded by Retreat and Bridgeman Roads.

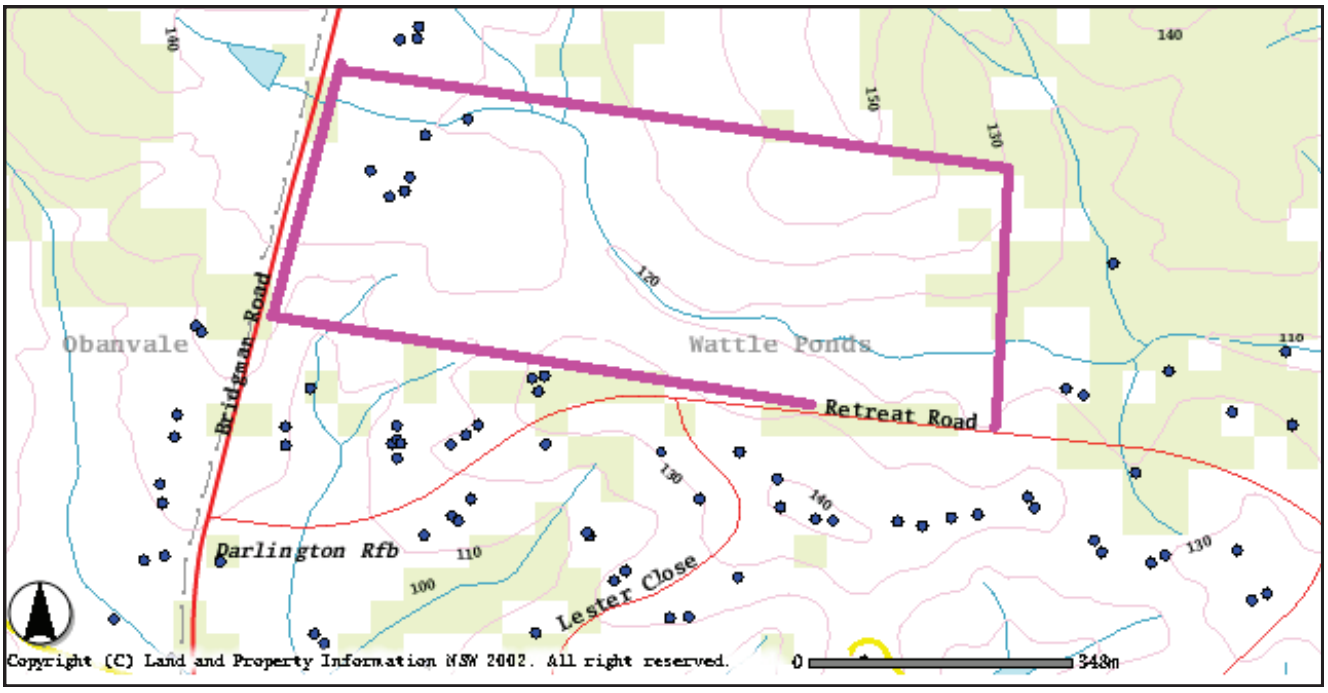


Figure 2 Study Area

1.2 Legislative Context

There are three pieces of NSW legislation, which provide the legislative context for Aboriginal heritage management in the state. They are:

- *National Parks and Wildlife Act* 1974 (NPW Act) provides statutory protection for all Aboriginal objects and Aboriginal places in NSW.

The NPW Act requires that reasonable precautions are taken and due diligence is exercised to determine whether an action would, or would be likely to, impact on an Aboriginal object or Aboriginal place. Without being able to demonstrate due diligence a person risks prosecution if Aboriginal objects or Aboriginal Places are impacted upon and a Heritage Impact Permit has not been issued.

It is also an offence under Section 86 of the NPW Act to disturb or excavate land for the purpose of discovering an Aboriginal object, or disturb or move an Aboriginal object on any land, without first obtaining a permit under Section 87 of the NPW Act.

Under Section 91 of the NPW Act, it is a requirement to notify the Director-General of the NPWS of the location of an Aboriginal object. Failure to do this within reasonable time is an offence under the Act.

The NPW Act also provides for stop-work orders under Section 91AA if an action is likely to significantly affect an Aboriginal object or Aboriginal place. The order may require that

an action is to cease or that no action is carried out in the vicinity of the Aboriginal object or Aboriginal place for a period of up to 40 days.
Under the Act:

An Aboriginal object is any deposit, object or material evidence (not being a handicraft made for sale) relating to Aboriginal habitation of the area that comprises NSW, being habitation before or concurrent with the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains (as defined within the meaning of the NPW Act).

Aboriginal objects are confined to physical evidence and may also be referred to as 'Aboriginal sites', 'relics' or 'cultural material'. Aboriginal objects can include pre-contact features such as scarred trees, middens and artefact scatters, as well as physical evidence of post-contact use of the area such as Aboriginal built fencing or stockyards, fringe camps).

An "Aboriginal place" is a place which has been declared so by the Minister administering the NPW Act because he or she believes that the place is or was of special significance to Aboriginal culture. It may or may not contain Aboriginal objects.

It should be noted that the NPW Act does not provide protection for spiritual areas or natural resource areas that have no physical evidence of Aboriginal occupation or use, unless they have been declared an 'Aboriginal place'.

- *Environmental Planning & Assessment Act* 1979 (EP&A Act) establishes the requirement for formal assessment of Aboriginal heritage values in land use planning and development approval.

Part 4 also requires that in reaching a decision to grant development consent, a consent authority is to take into consideration the likely impacts of that development, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality. This requires the consent authority to consider the impact on all Aboriginal heritage values, including natural resource uses or landscape features of spiritual importance, as well as the impact on Aboriginal objects and Aboriginal places.

- *Heritage Act* 1977 provides statutory protection for items listed on the State Heritage Register and allows for the making of Interim Heritage Orders to protect items until an assessment of their heritage values can be undertaken.

Aboriginal heritage is primarily protected under the NPW Act but may be subject to the provisions of the Heritage Act if the item is listed on the State Heritage Register or subject to an Interim Heritage Order (IHO).

Development proposals that require specified approvals from State agencies are referred to as integrated development approvals (IDA). The IDA process has been established to coordinate approvals according to these three pieces of state legislation (where required). The IDA process requires applicants to provide agencies with sufficient information to allow them to provide general terms of approval, prior to the grant of any development consent.

The NPWS is an approval body in the IDA process when a **development will impact on an Aboriginal object or Aboriginal place,** thereby requiring a Heritage Impact Permit pursuant to Section 90 of the NPW Act. Under the Act, impact is defined as "knowingly destroy, deface or damage…"

The Heritage Council is one of the State government agencies included in the IDA process in relation to its responsibilities for heritage items under Section 58 of the Heritage Act.

The *Native Title Act* 1993 (Commonwealth) provides the framework for recognising native title rights that may exist on certain types of land.

The Commonwealth's *Aboriginal and Torres Strait Islander Heritage Protection Act* 1984 may also be relevant if an item of Aboriginal heritage significance to an Aboriginal community is under threat of injury or desecration and state-based processes are unable to protect it.

The Commonwealth Government's heritage and environmental assessment legislation may also be relevant to some proposals, particularly where there are heritage values of national significance present.

1.3 Aboriginal Heritage Impact Assessment Process

For the purposes of obtaining a Section 90 Heritage Impact Permit or General Terms of Approval from NPWS, an assessment of the likely impacts (both direct and indirect) of a proposal on Aboriginal objects and Aboriginal places is required.

The assessment process includes:

- Consulting with Aboriginal people with cultural knowledge or responsibilities for country in which the proposal occurs;
- Identifying the Aboriginal heritage values associated with the area through both written and oral research and field investigations;
- Understanding the significance of the identified Aboriginal heritage values;
- Assessing the impact of the proposed development on Aboriginal objects and Aboriginal places;
- Describing and justifying the proposed outcomes and alternatives;
- Reporting on the Aboriginal heritage impact assessment process and its findings.

2.0 The Study

2.1 Aboriginal Community Involvement

Under section 90 of the NPW Act (2001), developers and consent authorities need to undertake due diligence when they assess the impacts of a development proposal on Aboriginal heritage. The DEC has developed draft Aboriginal Heritage Impact Assessment Guidelines to consider the full range of Aboriginal heritage values, rather than focusing only on pre-contact archaeological sites and objects. This is a response to emerging landscape-based understandings of Aboriginal heritage, and requires formal Aboriginal involvement as well as consultation in the assessment process.

The DEC acknowledges that it is primarily Aboriginal people who should determine the significance of their heritage. The DEC recognises that Aboriginal heritage includes traditional, historical and contemporary associations of Aboriginal people with the environment as well as physical items within the environment. In assessment processes, the DEC requires the applicant to demonstrate that Aboriginal people have been involved (or have had reasonable opportunity to be involved) in the identification, assessment and management decisions relating to their heritage.

The project lies within the boundaries of the Wannaruah Local Aboriginal Land Council (LALC) based at Muswellbrook and the Upper Wannaruah Tribal Council, (WTC) located

at Singleton. Both of these community groups participated in formulating this assessment.

This study aims to integrate archaeological and Aboriginal significance and management recommendations for sites, features or the landscape.

2.2 Study objectives

The study was commissioned to:

- determine whether any Aboriginal archaeological sites or objects were present in the study area likely to constrain development
- assess the significance of such sites
- evaluate potential impacts of likely development on any such sites or significance
- provide management recommendations to mitigate potential impacts

The objectives are:

1. To identify and map areas of Aboriginal Archaeological potential and sensitivity, for archaeological values

2. Identify Aboriginal conservation/management options for the study area, taking into account the local and regional context.

The tasks are defined as:

3. Consultation with the Aboriginal community

4. Refinement of predictive models of Aboriginal use of the landscape and the distribution of evidence

5. Definition and matching of land surface disturbance in terms of its potential for revealing or concealing archaeological material

6. To identify and map any areas of cultural significance

The study will take a landscaped approach to determine any potential Aboriginal archaeological evidence. This will require the identification of the range of landscape units, which are likely to contain Aboriginal archaeological evidence, rather than only attempting to identify individual sites across the study area. This will ensure that their landscape context is assessed for significance. The landscape approach as well as previous archaeological work in the area will determine a predictive model of Aboriginal occupation of the study area.

2.3 Methodology

Various models have been proposed by archaeologists to explain Aboriginal occupation and use of the landscape environments in NSW.

Present archaeological evidence indicates that Aboriginal archaeological sites are most likely to occur along coastal and estuarine precincts. Sites within the hinterland are less common and generally less intensive.

The predictive or contextual model for the archaeological assessment of the site forms the basis for developing a picture of Aboriginal occupation. The predictive model takes into account the landform, geology, vegetation, previous archaeological data as well as the historical context of the area.

The assessment of the data enables a prediction of what form of Aboriginal occupation was likely to have existed on the study area and would show the potential for finding Aboriginal Sites. A field survey is then able to evaluate the prediction and to extrapolate reasons as to why the survey did or did not match the prediction.

The study methodology was based on data research, field survey of the site and report compilation.

Data research included:

- maps and plans
- previous archaeological reports in the area and region
- historic and scientific literature
- NPWS Aboriginal sites data register
- consultation with Aboriginal community and other local people
- consultation with government officers

The Survey included

- design of survey strategy and prediction based on archaeological and landscape context
- field inspection of study site
- assessment of findings and potential impact

2.4 Study Personnel

The research and report was compiled by Len Roberts BA (Arch.), Grad. Dip. Comp., Dip Sp. Ed., consulting archaeologist, who also holds a certificate in Archaeological fieldwork from Tel Aviv University, Israel. Len has worked on archaeological projects in Australia and overseas.

The field survey was carried out by this archaeologist in conjunction with Barry French and Tony Matthews, site officers for the LALC and Victor Perry and Tracy Skene of the WTC all of whom have extensive experience in archaeological fieldwork. They assisted in formulating the survey plan. The fieldwork was carried out on 1/10/04 and 6/10/04

3.0 Aboriginal Heritage Values

Aboriginal heritage is dynamic. It includes tangible and intangible expressions of culture that link generations of Aboriginal people over time. For Aboriginal people, relationships with country, people, beliefs, knowledge, law, language, symbols, ways of living, sea, land and objects all arise from their spiritual and cultural practices and associations. (Modified from p4 Australian Heritage Commission *Ask First*)

Aboriginal heritage includes landscapes and places that are important to Aboriginal people as part of their customary law, developing traditions, history and current practices. Aboriginal heritage landscapes, areas and places have associated heritage values which include spirituality, law, knowledge, practices, traditional resources or other beliefs and attachments. Aboriginal people have occupied the NSW landscape for at least 50,000 years. The evidence and important cultural meanings relating to this occupation are present throughout the landscape, as well as in documents and in the memories, stories and associations of Aboriginal people. Therefore, any activity, which impacts on the landscape, may impact on Aboriginal heritage.

An area may contain evidence and associations that demonstrate one or any combination of the following Aboriginal heritage values. (This section is drawn from Australian Heritage Commission *Protecting Local Heritage Places: A guide for communities* and the *Australia ICOMOS Charter for Places of Cultural Significance (The Burra Charter)* and its associated Guidelines).

- *Social value* (sometimes termed *Aboriginal value*) refers to the spiritual, traditional, historical or contemporary associations and attachments which the place or area has for the present-day Aboriginal community. Places of social significance have associations with contemporary community identity. These places can have associations with tragic or warmly remembered experiences, periods or events. Communities can experience a sense of loss should a place of social significance be damaged or destroyed. These aspects of heritage significance can only be determined through consultative processes with one or more Aboriginal communities.

- *Historic value* refers to the associations of a place with a person, event, phase or activity of importance to the history of an Aboriginal community. Historic places may or may not have physical evidence of their historical importance (such as structures, planted vegetation or landscape modifications). Gaining a sufficient understanding of this aspect of significance will often require the collection of oral histories and archival or documentary research, as well as field documentation. These places may have 'shared' historic values with other (non-Aboriginal) communities. Places of post-contact Aboriginal history have generally been poorly recognised in investigations of Aboriginal heritage, and the Aboriginal involvement and contribution to important regional historical themes is often missing from accepted historical narratives.

- *Scientific value* refers to the importance of a landscape, area, place or object because of its archaeological and/or other technical aspects. Assessment of scientific value is often based on the likely research potential of the area, place or object and will consider the importance of the data involved, its rarity, quality or representativeness, and the degree to which it may contribute further substantial information. In the past, a consideration of scientific (archaeological) value was the focus of most approvals assessment processes for Aboriginal heritage, and this will still be an important component of most assessment processes. The intent of these Guidelines is to ensure that these values are incorporated within a broader consideration of Aboriginal heritage significance.

- *Aesthetic value* refers to the sensory, scenic, architectural and creative aspects of the place. It is often closely linked with social values and may include consideration of form, scale, colour, texture, and material of the fabric or landscape, and the smell and sounds associated with the place and its use.

These aspects of the heritage significance of a place or object are commonly inter-related. Because all assessments of heritage values occur within a social and historical context, all potential heritage values will have a social or Aboriginal community heritage component.

3.1 Cultural Landscapes

The way perceptions, beliefs, stories, experiences and practices give shape, form and meaning to the landscape is termed a cultural landscape.

The NPWS and the Land rights Act recognises that, for Aboriginal people, the significance of individual features is derived from their inter-relatedness within the cultural landscape. This means that features cannot be assessed in isolation, and that any assessment must consider the feature and its associations in a holistic manner. This may require a range of assessment methods and will always require the close involvement and participation of Aboriginal people.

4.0 Context

4.1 Regional Ethnohistory

SOCIAL

The survival of prehistoric people stranded on islands has been studied by Jones who has come to the conclusion that "in hunter-gatherer conditions, the limiting viable population may be somewhere in the range of four hundred to six hundred depending on local circumstances and the vagaries of chance."

This estimated minimum viable population of about five hundred was also the average size of a so-called tribe in Australia. The term tribe, which was adopted from 19th century Europe, has often been used to describe the organisation of Aboriginal society in Australia. Several anthropologists feel that 'tribe' does not accurately reflect the interaction and make-up of Aboriginal Australia, preferring the term 'band' to be the most appropriate term to describe the basic social and economic unit of Aboriginal society. It is described as a small-scale population, comprising between 2 to 6 extended family units, who together occupied and exploited a specific area.

The band was by no means a social or cultural isolate but, rather, interacted with other bands in a variety of ways. Typically these interactions involved visits, marriage, ceremonies and trade. As a result of these interactions, clusters of bands were formed; wherein there was a sense of collective identity, often expressed in terms of common and distinctive language.

LOCATION

It is believed that the Coastline of Eastern Australia has been much the same as it is today for the past 5000 years. The current coastline developed after rising of the seas drowned large tracts of land, but at the same time stabilisation of the sea level extended estuaries and tidal reaches, the zones of the shore most productive of fish and shellfish that were accessible to Aborigines. Lagoons formed at the mouths of rivers held back by Sandy barriers, which previously had been swept away by the constantly rising sea. And the drowning of river valleys led to the development of many food rich small bays and inlets.

In recent times the territories of Aboriginal tribes on the East Coast extended inland a considerable distance. Most encompass the drainage basin of one river and stretch from the shoreline up to the top of the coastal escarpment, at least 30 kilometres inland. There is no way of knowing how far back in time this territorial organisation goes, but it may well be quite ancient.

The evidence suggests a comparatively small early population, spread thinly around the Continent and concentrated in the places where food was most abundant: the coast and large inland lakes and rivers. Thousands of Aboriginal middens have been found on the south-eastern coast of Australia. The least inhabited parts of mainland Australia were

the snowy mountains and the desert centre of the Continent. According to Flood (p.219), "We now know that people were camping at least occasionally on the fringes of the snowy mountains, in treeless country at 730 metres above sea level and in the region North of Uluru, at Puritjarra, around 30 thousand years ago."

The bands developed into regional groupings or cultural areas of interacting Aboriginal societies possessing broadly similar languages, social organisation and customs, material culture and art styles, ways of life and environment. According to the work by Peterson (1986), there is a general correlation between culture areas and major drainage basins, which has been explained on the grounds that a drainage basin is unified by its river system and bounded by its catchment. Water supply determines plant cover and therefore the availability of food and consequently, Aboriginal population density.

On the coast, according to Flood (p.219), "The most favoured campsite was a foredune close to a rock platform on the north side of a headland. Such a site, offered easy access to shellfish, a landing place for canoes, proximity to drinking water, shelter from prevailing winds, and soft sand for a bed." Inland, the camps would have been near reliable watercourses and protected from prevailing winds. If hills were nearby, they may have had winter camps in rockshelters or caves. JW Fawcett (1898, p.152), stated of the Wonnaruah "in choosing their site [camp] proximity to freshwater was one essential, some food supply a second, whilst a vantage ground in case of attack from an enemy was a third.

ENVIRONMENTAL IMPACT

Several researchers have shown that the Australian Aboriginal has had a huge impact on the vegetation through use of fire. There were many reasons for the extensive burning. It was used for signalling and also to make travel easier by clearing undergrowth along the route. Aboriginal tracks were open by regular firing in the early timbered ranges. Throughout the Continent, burning was used as an aid to hunting, animals could be speared as they broke to escape the flames.

Other uses of fire were for longer term hunting strategies. After firing, the Bush would regenerate; new grass would spring up and attract kangaroos and other animals, on which the hunters could prey. Likewise, fire encouraged the regrowth of eucalyptus trees and of edible plant roots. The ashes acted like manure, and sweet, new green shoots would spring up after the first hard rain following the burn.

The term 'fire-stick farming' has been applied to this aspect of hunting.

There is an assumption that prior to European settlement the land was heavily forested. However, according to early settlers accounts and the Aboriginal oral history, this was not so. Walsh, (p26), cites extracts from the accounts of early explorers,

> "The extracts from letters, diaries and journals of early European settlers, explorers and government officials describe a parklike landscape of grasslands and grassed open forest lands with very few areas of thick forest. The cessation of regular burning following European settlement allowed a growth of thick forest of young trees that, together with an increasing understorey, choked out the grasses."

These grasslands provided perfect pastures for sheep, but when Aborigines were no longer present to maintain them with a regular fire regime, sour grass and scrub took over, gradually obliterating the open land, with considerable loss to the non- fire stick farmers.

Such regular, light burning was the pattern all over Australia at the time of first European contact. The fires were of low intensity, which meant that they consumed the litter of leaves and branches on the forest floors but did not burn down the trees.

Aborigines never put out their fires. Campfires were left burning, as were signal fires, including those lit in a sequence to indicate the direction of travel of humans or game.

Gould (p.82), "never encountered an occasion when a fire actually invaded an area that was already producing wild food crops". It seems that, as well as increasing their future food supply; the Aboriginals also protected their present food resources. As Flood (p.252) put it, "Fire is the most versatile and important tool of hunter-gatherers. It is used for warmth, light, cooking, hunting, signalling, track making, and, whether intentionally or not, had the effect of improving the food supplies of prehistoric Australia."

RESOURCES

The food resources available controlled the Aboriginal population, which in turn were related to water resources: the areas with the highest rainfall were generally richest in food. The number of mouths that could be fed was regulated by the food available at the leanest time of year.

When food was difficult to obtain, the food quest simply required more time and effort rather than new strategies. Thus when times were hard, the people could simply move more often and further afield.

The typical Australian Bands economy is flexible with a wide variety of foods being sought and advantages being taken of seasonal abundance or chance events, such as the stranding of a whale. Aboriginal Australia was not vulnerable to famine through the failure of one crop.

The simplicity and self-sufficiency of Aboriginal society was observed by Captain Cook in 1770, and cited in Beaglehole, 1955 (p.399).

> *"From what I have said of the natives of New Holland they may appear to some to be the most wretched people on earth, but in reality they are far more happier than we Europeans. They live in a tranquillity which is not disturbed by the inequality of condition: the air and sea of their own accord furnishes them with all things necessary for life, they covet not magnificent houses, household stuff etc., they lie in a warm and fine climate and enjoy a very wholesome air, so that they have very little need of clothing and this may seem to be fully sensible of, for many to whom we gave cloth etc. to, left it carelessly upon the sea beach and in the Woods as a thing they had no matter of use for. In short they seemed to set no value upon any thing we gave them, nor would they ever part with any thing of their own for any one article we could offer them; this in my opinion argues that they think themselves provided with all the necessary's of life and that they have no superfluities."*

SIGNIFICANCE

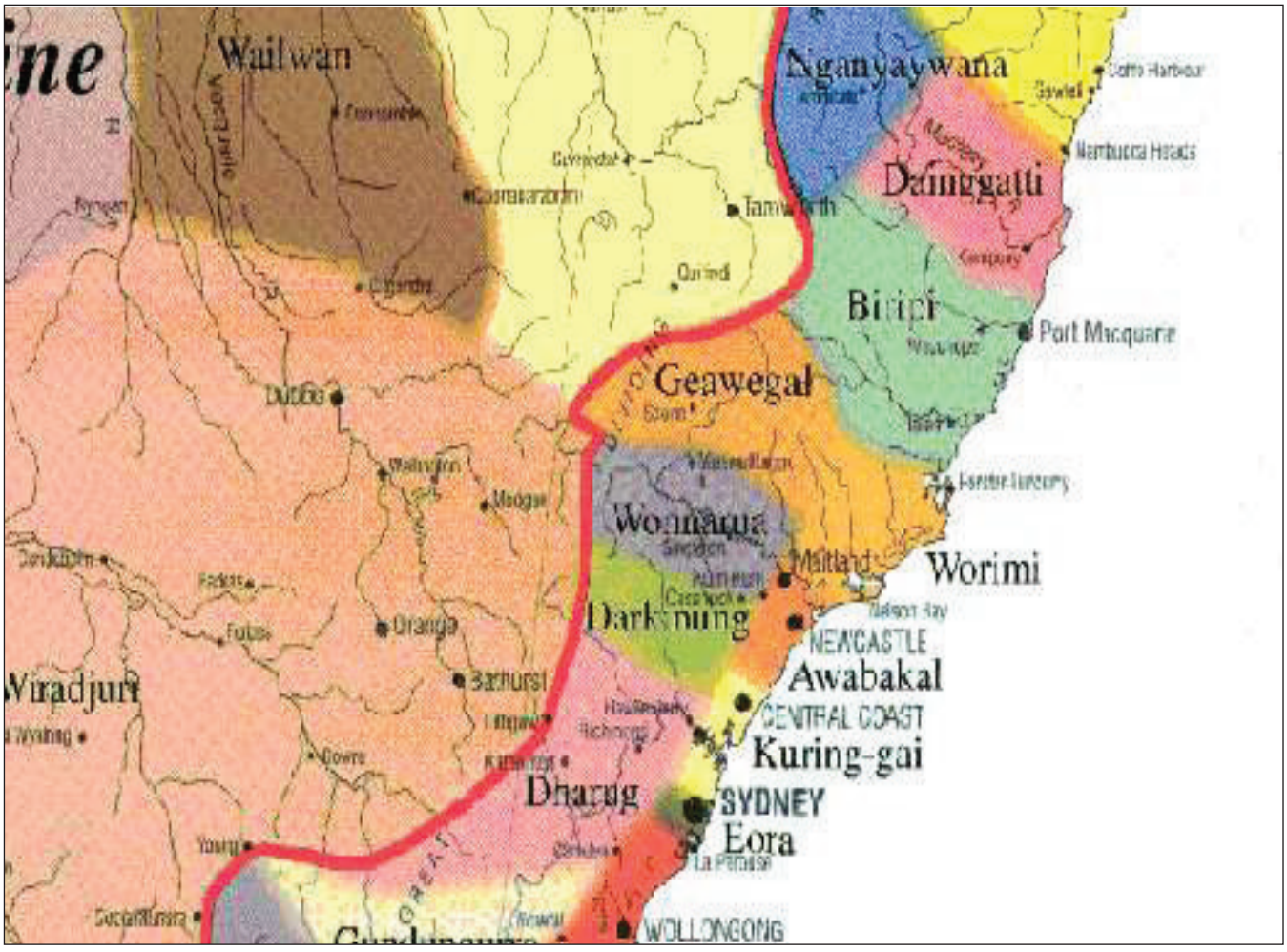
An appreciation of the foregoing indicates the pattern of settlement and lifestyle of the Aborigines prior to European contact. In particular, it places the study site in the context of Aboriginal use or occupation.

Aboriginal people were able to exploit, and to survive in, a wide range of environments where European agriculture failed. They tended to congregate in bands of about 500 consisting of family groupings, generally limiting themselves to a river, lake or bay

drainage basin, living off the abundant food supply that was easily available. Each family grouping would be about 8 miles (12-15km) apart (Bennett, 1926). They were not nomadic in the clinical sense, however they did move from campsite to campsite on a rotational basis, mainly for reasons of hygiene (Bennett, 1926). Extensive use was made of fire as a hunting tool, modifying the Australian vegetation. There was regular contact with other bands for social and economic purposes. Many of the paths followed would be along watercourses or from one water source to another.

Study Area Context

According to Horton (1994), the Band that would be of interest to this survey, would be the family groupings of the Wonnaruah, although early accounts mention other various names all of whom may have been a family grouping of the Wonnaruah. They probably had various base camps along tributaries of the Hunter. The camps would have been near reliable watercourses. The pathways to other bands or to food, shelter or ceremonial resources were generally along creeks and associated watercourses or ridgelines. The Wonnaruah had extensive relationships with the Awabakal, Gringai, Darkinjung and Worimi and particular travel routes are obvious from the landscape in the Hunter valley.



Map 4 Horton's Map of Aboriginal Territorial Organisation

4.2 Geographical

The study area is located on a ridge/hillslope overlooking the town of Singleton. The land has been extensively cleared and contains pasture. The banks of the intermittent creeks

contain a variety of eucalyptus and casuarina tree species. The land is best described as gently sloping with elevations across the site generally ranging between 130 m AHD. (Australian Height Datum) along the south eastern corner and dropping to 100 m AHD in the south-western portion of the study area.

The main catchment, of which the study area forms a part, is the Hunter River. The main watercourses in the study area are headwater tributary creeks/drainage gullies of First creek to the northeast of the study area. First creek flows from the North-west to the South East, meandering through creek flats and valleys before eventually discharging into to the Hunter River system some four kilometres to the south of the site. The creek system on site consists of a shallow gully/creek running in an easterly direction commencing at the north-western boundary. Another minor creek gully commences in the south western corner of the study area and flows south. It is steep and heavily eroded. The creeks are quite exposed showing a strategic sequence of brown/grey clay loam overlying yellowish brown gravely clay. The study area is heavily grassed and is used as pasture for cattle and horse grazing.

The site is generally cleared and pastured, with a scattering of introduced and native trees along the gullies/creek.

The site is located on 2 topographically high points of about 140m AHD in the north and the south intersected by the unnamed intermittent creek.

4.3 Landscape

Archaeological reports that have indicated Aboriginal sites and research literature have tended to show that there is a relationship of finds to landform. The differing landscape creates different land use. For instance swampy or poorly drained land would not be conducive to campsites or burial grounds. Whereas, caves and rock shelters would give rise to artwork, and practical purposes such as shelter or women's birthing areas.

The landscape survey and classification followed in this report is that formulated by Speight and others in the Australian Soil and Land Survey, Field Handbook, Second Edition.

Landform is basically divided into 2 classifications, the classification covering a larger area is known as Landform Pattern, which can then subdivided into smaller areas known as Landform Elements. About 40 types of landform pattern are defined and include, for example, floodplain, dunefield and hills. Whereas, about 70 of the smaller landform elements are defined, including cliff, footslopes and valley flat.

According to Speight (p.34), The significant kinds of landform pattern in Australia may be described and differentiated by the following attributes assessed within a circle of about 300m radius:

- Relief
- modal slope
- Stream channel occurrence
- Mode of geomorphologic activity
- Component landform elements.

It is important that boundaries of landform patterns are well established so that adjacent dissimilar landform patterns are not included and thereby keep the integrity of the description of the landform pattern in which the observation point is found.

The study area consists of hillslopes and creek gullies.
Surface levels range from about 140m to 120m AHD. Ground slopes are generally less than 6%.

4.4 Soils

Where an archaeological survey is only a surface investigation, any information relating to subsurface information is important, in that it indicates:

- The possibility of archaeological evidence beneath the surface.
- The possibility of archaeological evidence destroyed through erosion or other natural phenomena.
- The possibility of archaeological evidence preserved through soil/sand deposition.

The main soil features of interest are the depth of deposits, stability of the soil composition and the depositional age of the soil groups. Detailed analysis of the effects of different soils on the burial process of archaeological remains can only be carried out during an excavation.

Reference to the soil landscape series information prepared by the Department of Land and Water Conservation indicates that site soils generally comprise the Sedgefield Soil Landscape System. The geology is based on weak Permian sedimentary bedrock of the Singleton Coal measures (Branxton formation), consisting of mudstone, sandstone conglomerate, siltstone shale and coal seams. The landscape was basically formed by deposition and has low undulating hills with elevation up to 170 metres Typical characteristics of these soils include the following:

Yellow soloth soils which are generally confined to the mid and upper slopes and occasionally along drainage lines. Black soloths appear in seepage areas.

During the field survey, land filling (railway ballast) was observed along the intermittent creek

The soil detail tends to indicate that run on is low as is runoff. The soils on the slopes tend to be shallow and the creeks not fast flowing. The integrity of water flow has probably been affected by coal mining in the region and accurate prediction of long term water flow is not possible.

5.0 Archaeological Potential

According to the AHIMS database kept with the department of Environment and Conservation (NPWS) there are 2172 Aboriginal objects within the Singleton local government area. The majority of which are artefacts (1971). There are art sites (115), grinding grooves (24) and modified trees (19).

It should be noted that in regards to the Database:

- Object records for many places are incomplete to varying degrees: grid references are not always accurate (due to errors on the part of field investigators or data processors) and unless the original site cards and associated reports are accompanied by detailed maps at 1:25,000 scale, it can be very difficult to check the accuracy of the grid references.

- Objects can be sometimes recorded more than once by different field investigators and registered as separate sites or not necessarily recorded.

- Not all reports and cards are available for inspection.

- Recent studies have not as yet been registered.

Locally, Mary Dallas in 1986, 1987, 1992, found 35 open campsites and 2 scarred trees. Jill Ruig in 1993, 1996, found several open campsites. Silcox an ERM in 1997 found 17 Objects and Liam Dagg in 1997 located isolated finds. The surveys were undertaken for rezoning and development proposals. Their work was undertaken to the south and west of the study area and identified an extensive Aboriginal occupation. The area investigated was basically a sheltered creek valley that discharged into the horseshoe bend of the Hunter River to the south.

At the time of writing this report McCardle was in the process of finalising her report on a survey undertaken in early 2004 over 5 parcels of land owned by Singleton Council. Her study basically covered the remaining land between the study area and the Hunter River to the south. Several Aboriginal Objects were observed, but although recorded and forwarded to the DEC by her, have not been entered into the AHIMS database as the DEC Archaeologist had not finalised the report process and recommendations some 12 months later.

The closest recorded objects are shown on figure 7 and are directly related to surveys undertaken in the area. The map does not contain McCardle's finds. For cultural reasons, the location of the Objects shown on the map is indicative only. The recorded sites are a result of intensive assessment prior to proposed development.

An examination of the location of the above relics not only places the study area in an overall archaeological context but also indicates the possible archaeological evidence to be found in the study area, if the study area was in an undisturbed state. This is important as it indicates the lifestyle of the aboriginal people in a landscape context. The known relics are either located along waterways, wetlands and exposed tracks.

The studies reveal a thorough investigation of an extremely large portion of land in excess of 10sq kilometres. This extensive coverage affords the opportunity to analyse Aboriginal occupation of the area with some degree of certainty. Many Objects were observed indicating extensive Aboriginal occupation of the area. Some areas revealed an abundance of Objects whilst others revealed none. Such a dichotomy of observation of artefacts may be affected by a number of possible factors singularly or in combination and in order to adequately assess the observational record it is important to address those factors;

- Differences in observer styles
  Whilst observer styles will always play a part in observation of artefacts, it must be noted that within a wide variety of landscape and area the same study teams had areas of high concentration and no concentration of artefacts. Differing archaeological survey teams had the same Aboriginal Sites Officers and therefore minimised style difference. Several areas were surveyed by differing teams independent of each other at different times with no marked difference in the archaeological record. Despite observer styles the survey teams consistently reinforced the pattern of artefact distribution across the landscape. In addition the archaeologists undertaking the surveys are well qualified and experienced and therefore any differences in observer styles appear not to have affected the archaeological observation.

- Survey visibility
  That is, the extent to which an observer can detect the presence of archaeological material at or below a given place and is generally affected by seasonal factors such as grass cover, level of water in creeks etc. It is a given, that the archaeological record is affected by surface visibility however it would appear that the visibility across the study areas has been consistent and therefore archaeological observation is

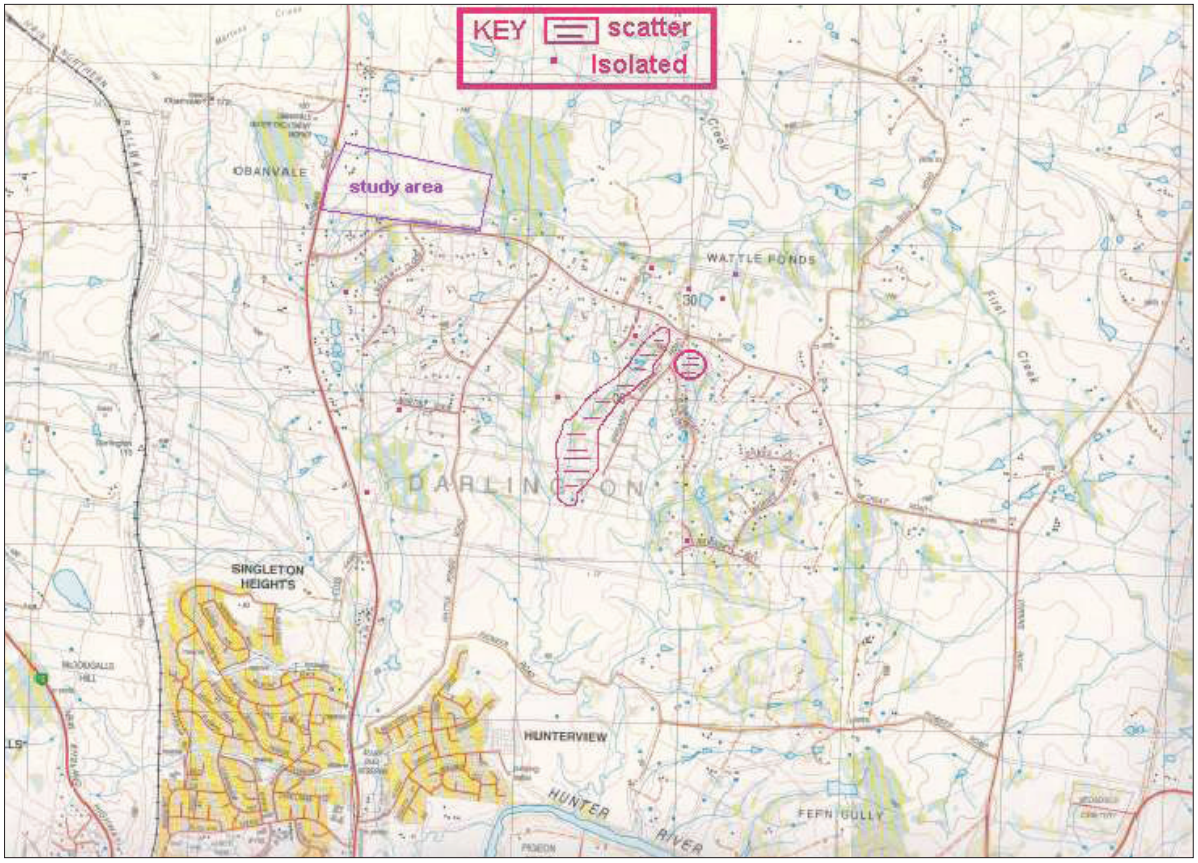
equally consistently affected. Surface visibility is not a factor that has created the differing observational record.

- Integrity of soil profile and landscape
  Whether a study area will contain archaeological evidence will be dependent on the level of disturbance of a site. Filling, levelling ploughing road construction and other processes will affect observation. The various studies have generally indicated rural and pastoral use of the land at the time the studies were undertaken. Whilst there was differing integrity across the landscape and within and between various studies it appears that the soil integrity was generally similar across all of the study areas.
- Depositional qualities of the study area
  This perhaps is probably the fundamental aspect for concealing/revealing objects. Stone artefacts on slopes will be affected by natural surface processes. Initially deposited on the surface an object will be subjected to differing rates of burial and exposure, dependent upon climactic conditions and bioturbation agents. Objects are known to migrate vertically downwards within a soil profile or be carried over the surface toward a lower landscape by means of wind, rain and other natural processes. Thus a range of natural processes will influence artefact distribution and any interpretation of such distribution must consider the effects and intensity of such natural processes. However, for the purpose of this analysis it is not so much where the objects were found but that objects were found in varying densities, indicating a varying degree of Aboriginal occupation.

- Aboriginal Occupation Patterns
  The observation or non - observation of artefacts or objects in a given place may be directly proportional to the level of Aboriginal occupation. Taking into account the various natural processes within a landscape and the factors as outlined previously may suggest quite emphatically a pattern of Aboriginal occupation. Areas of danger to children, poor amenity and adverse exposure to the elements would not be used as frequently if at all to more favourable locations.

  It would appear that provided the various natural and anthropogenic processes are taken into account, the distribution of artefacts as observed from the surveys in the broader area is a very clear pattern of Aboriginal occupation :

Proximity to water in elevated sheltered creek valley near a ridgeline for access and communication purposes.



Map 7 Previously Identified Aboriginal Objects

5.1 Previous Archaeological Work

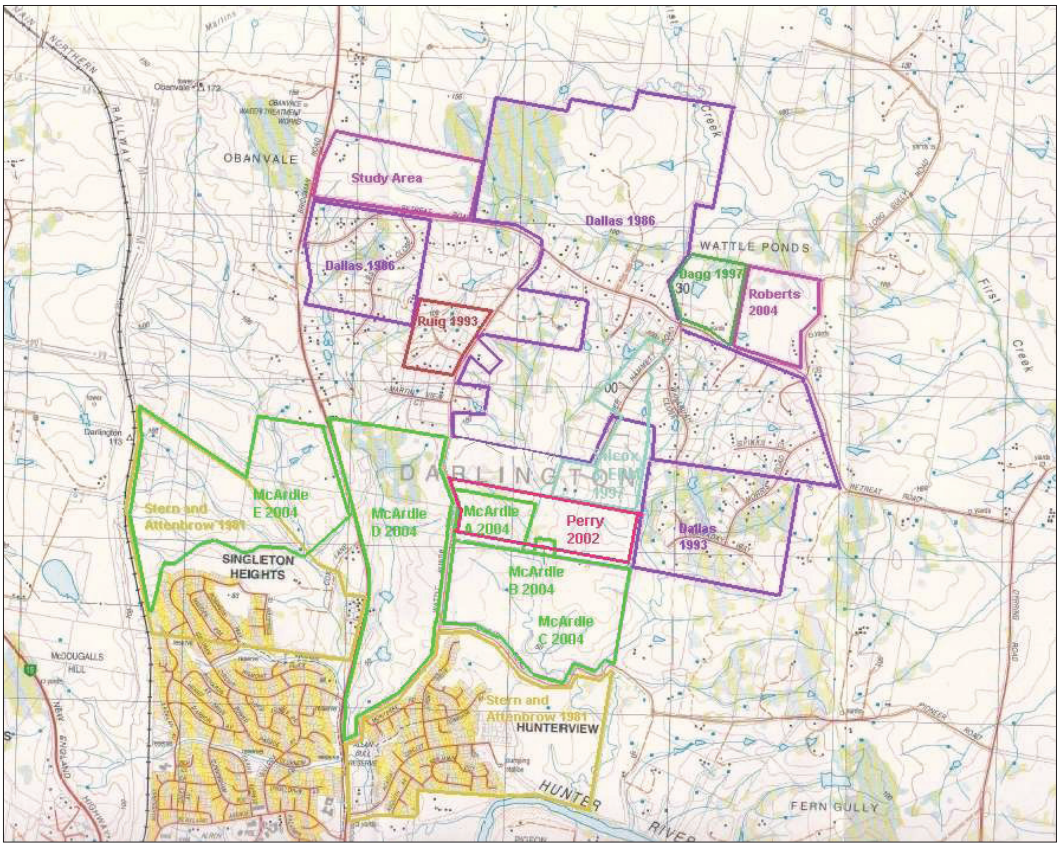
Since the 1980's, several systematic investigations have been carried out in the immediate vicinity of the study area, and a number of archaeological investigations have been carried out in the surrounding region of similar landscape and proximity to the Hunter River.

Table 2 Archaeological Surveys conducted in the Area

Report	Location	Author and date	Type of survey	Area Surveyed	Finds
North Singleton Proposed Housing Subdivision: Survey for Archaeological Sites	2km SW of Study Area	Stern N Attenbrow V 1981	area	3sq.km	86 sites 52 open campsites incl. 1 scarred tree 34 isolated finds
Archaelogical Reconnaissance of Singleton Shire Council Land Developments known as Wattle Ponds and the Retreat	South of Study area, opposite side of road	Dallas M 1986	area	3sq. km	36 sites 20 open campsite 14 isolated finds 2 scarred trees
Appendix111: Report on additional Survey and Complete Site Management Requirements for the Retreat and Wattle Ponds at Singleton Heights, Singleton	South of Study Area, opposite side of Road	Dallas M 1986	area	40ha	11 Sites
Archaeological Survey of Singleton Shire at Morris Rd Singleton Heights	3km SE of Study Area	Dallas M 1993	area	600sq metres	2 open artefact scatters
An Archaeological Survey of Proposed Rural Subdivision Development on Portion 68 Wattle Ponds Rd Singleton	0.5km south of Study Area	Ruig J 1993	area	16ha	2 open campsite
The Retreat Area Rural Residential Subdivision, Singleton Heights, Archaeological Assessment	1.5km SE of Study Area	Silcox 1997 & ERm 1997	area	42ha	17 open campsites 5 isolated Finds

Report	Location	Author and date	Type of survey	Area Surveyed	Finds
Archaeological Assessment Proposed Rural Residential Subdivision Portion 119 Retreat Rd, Singleton NSW	1.5km SE of Study Area	Dagg l Feb 1997	area	16.2ha	1 open campsite 2 isolated Finds
Archaeological Assessment Lot 120, DP 752 455 (Retreat Road, Singleton	3km west of study area on same Road	Roberts, L 2004	area	25ha	nil
Archaeological assessment of Singleton Councils remaining lands (completed but not registered by DEC)	2km south of study area	McCardle, P 2004	area	3 sq km (approx)	Numerous, conservation one proposed

The areas previously surveyed are shown on figure 8. The information from those surveys indicates the type of sites that could be expected and reinforces other studies as to where they are likely to be.


OBANVALE
Study Area
Dallas 1986
Dallas 1986
WATTLE PONDS
Dagg 1997
Roberts 2004
Ruig 1993
DARLINGTON
Wilcox 1997
Stern and Attenbrow 1981
McArdle E 2004
McArdle D 2004
McArdle A 2004
Perry 2002
Dallas 1993
SINGLETON HEIGHTS
McArdle B 2004
McArdle C 2004
McDOUGALLS HILL
Stern and Attenbrow 1981
HUNTERVIEW
HUNTER RIVER
FERN GULLY

Regionally, several studies have been undertaken which have proven to be definitive works and a canon for understanding archaeological potential.

Brayshaw in 1986 conducted a Study of Colonial Records of the Aborigines of the Hunter Valley and was able to present an account of the environment and way of life of the Aboriginals at the time of colonial settlement. Her study also indicated areas and landforms of Aboriginal use and occupation.

The assessment by Haglund of the Prehistoric Heritage in the Lake Macquarie Area, in 1986, catalogued the known sites at the time and identified possible generic locations for archaeological sites. Dean-Jones and Mitchell (1993) conducted a similar assessment of archaeological sites in the Hunter valley.

The above assessments indicated:

- Open campsites would be near water holes.
- Grinding grooves are more likely to be found in rocky outcrops exposed by erosion or in creek beds.
- Scarred trees may be present in any type of landscape, but this would depend on the age and type of tree.
- Artefacts are more likely to be found along creek and drainage lines
- Stone arrangements and ceremonial artefacts are more likely to be found in significant landscape aspects such as caves and hills.
- Artefacts can be found in any landscape in proximity to an abundant food/water source.
- Archaeological evidence is more likely to occur in undisturbed areas.

Archaeological investigations by Kuskie (1994), Silcox and Ruig (1995) and Effenberger and Baker (1996) on margins of various wetlands indicate that artefacts could be found on all types of landscapes abutting wetlands with density in direct correlation to distance from the margin.

In addition, the work by Klaver and Heffernan (1991) which was an assessment of sites in the Greater Taree Council area, not only reinforced the possible locations, but also identified landscape attributes for ceremonial sites. Citing an earlier work by Fitzpatrick (1986), they stated, "Ceremonial grounds were said to comprise two rings, one on top of a low ridge and the other in a level place below. The latter was…"established in a roomy place, so that all the gins could camp there close to the ring."" This accords with this author's findings at North Arm Cove and Kings Hill, Raymond Terrace.

With respect to burials, work by Donlon 1990, where she analysed skeletons uncovered on beaches on the Central Coast of NSW, ethnographic reports by Bennett 1929, along with other research cited by Mulvaney and Kamminga 1999, has tended to indicate that whilst burials could be found almost anywhere and diverse in practice, intentional or formal burials, generally in Eastern NSW, consisted of isolated burials being placed in sandy type soil, near the high water mark, and sufficient soil depth to bury the person vertically in a sitting position and with various belongings. In the Central west of NSW according to Garnsey (1942: 23ff), the body was placed in a squatting position; with the elbows placed on the knees and the head between the hands. In this position, the body was placed at the foot of a Coolabah tree facing east. In the burial of an important individual, a strip of bark about five foot long and two foot wide was stripped from the eastern side of the tree and placed in a slanting position over the corpse. The blaze on the tree was also carved in tribal markings to show the man's status. These carved trees were apparently only associated with the graves of the spiritual leaders. For the period of mourning, the body remained out of the ground.

The only recorded cemeteries are within the Murray River corridor or at Broadbeach in Queensland. Most burials are discovered by accident.

5.2 Past Land Use

Past Aboriginal activities are not well manifested by archaeological record because many activities did not leave material evidence or because the material evidence was not durable. Many of the implements were organic material, such as wood and bone and readily decayed when exposed to the elements. Even burials, are subject to the acidic condition of the soil.

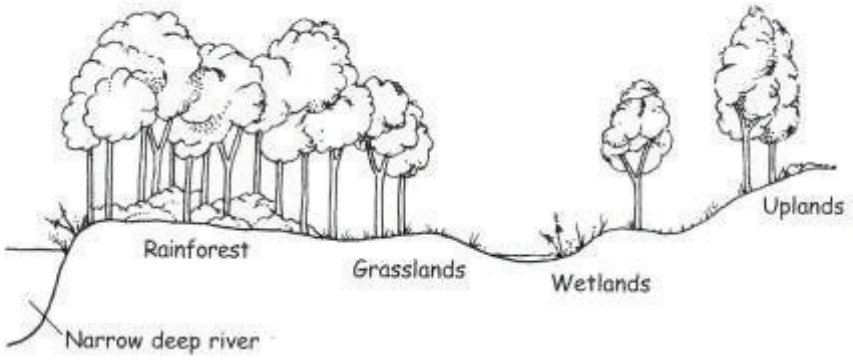
Durable evidence, such as stone and rock implements, is affected by European landuse. Easily recognisable implements such as stone axes, have found their way into many private collections, well before it became illegal to do so, with no record of the location of the find. Cultivation, with the associated stick raking and stone gathering also tended to destroy surface evidence. However cultivation and pastoral landuse also helped preserve the archaeological record. In some cases cultivation would expose evidence in others, cover the evidence.

In general, the archaeological record is dependent on the exposure of sites through erosion, weathering, fire, drought and anthropogenic activities.

The history of the area portrays the landuse over time.

- ***European***

The following figure from research undertaken by represents the landscape of the Hunter River at European settlement.



Pre-European Hunter River

The land closest to the river was covered with a thick rainforest and in some places this went back a long way before merging into open grasslands and wetlands. The land then went into uplands which were covered with a eucalypt forest and grassland.

Map 8 landscape of the Hunter River at European settlement.

The History of Singleton is closely entwined with the development of the Colony. Singleton lay on a Song Trail (Aboriginal track) and was "discovered" in attempt to find a route from Sydney to Newcastle. Aboriginal guides led the party.

The first European discovery was on St. Patrick's Day 1820. John Howe led the exploration party. The expedition had set out to find an overland route from Sydney to the Hunter River and Newcastle. A member of his party, Benjamin Singleton, was

rewarded with a grant of 240 acres and established himself as a landholder and trader. He erected a residence near the ford that crossed the Hunter River, around this grew the settlement which bears his name.

Settlers quickly took up numerous land grants in this fertile region which Howe named "St. Patrick's Plain".

In 1841 there were 431 settlers in Singleton, 259 males, 172 females. Wheat, wine and tobacco growing were important produce of the district in these early years. Agricultural pursuits broadened to include sheep and cattle.

Coal was mined from about 1870, and in the Rix's Creek area no less than 16 separate coal mines operated Post World War II, in the fifties and early sixties, the districts economic activities were based on, dairying, beef cattle, vegetable and fodder farming and use of the Army Base for National Service Training.

The post war demand for electric power and the development of open cut methods for mining coal resulted in the exploitation of the large deposits of steaming coal found close to the surface in the Singleton area. Construction of the Liddell Power Station commenced in 1969 and from the mid-seventies major open cut coal mines have commenced operation.

The study area has been used for various agricultural pursuits but mainly horse and cattle grazing.

- ***Aboriginal***

The known archaeological evidence tends to suggest that base camps were located close to freshwater and food sources. The campsites were in favourable climactic conditions, safe, not only from intruders but also for young children. Campsites were therefore not near fast, flowing rivers, dangerous swampy areas or steep cliffs. Many Dreamtime stories were told of mythical creatures to keep children away from dangerous areas. Trails (Song Lines) from campsites and to other clans were generally along creek lines or ridgelines.

5.*3 Probable Scenario of Past Aboriginal Occupation*

Having regard to known archaeological record, ethnohistoric records and the landscape it is possible to suggest a framework of Aboriginal occupation of the study area.

The Hunter River was well known to flood and at times be quite fast flowing. The tributaries of the Hunter were much more placid, safer and access to good clean water far easier. Children were also safer playing near tributaries than near the big river.

The nearby swamps were home to abundant wildlife. At sunset and dawn fish, fowl, game plants and fruit would be gathered from these swamps to provide sustenance for a healthy and joyful Aboriginal population. Little time and effort was put into providing the daily essentials, leaving the day free for family times and the enjoyment and comfort of life. The people would set up camp on a sheltered, high place away from mosquitoes and the prevailing wind. They would stay there until it was time to move on for hygiene reasons or the weather changed and a more sheltered spot was required. There was never an occasion when the food or water supply was scarce.

The Retreat Road ridgeline was an ideal occupation area, perched above the floodplains and between the Hunter River to the south and mountain ranges (Barrington Tops) to the north; it gave good vantage to monitor the movement of game and unwanted visitors. It was only a short stroll down a gentle slope to the Hunter River with its

abundance of fish. It was also only a slightly longer walk to the various Song Lines of the ridge tops. The various landform elements of the hills leant itself to great areas for shelter. The rather large and flattened hilltops made a great congregation area for the gathering of clans from all over. Fires could be lit on the high points and the smoke, seen for many, many kilometres, would announce the forthcoming gathering.

5.4 *Implications*

It would appear that the Wannaruah has occupied the land in the study area due to its proximity to the Hunter River. Previous artefact scatters to the south of the study area along creek lines with a southern aspect suggests most strongly that the northern aspect of the ridgeline adjacent to water should reveal evidence of Aboriginal occupation. It would also appear that the study site in a much broader landscape context could have leant itself to a vantage point, signalling area and or an occupation area. There is no historical, anecdotal or oral evidence confirming this supposition. However the archaeological record of the broader area would suggest that the evidence to be observed through a field survey would be isolated artefacts and artefact scatters. This will however depend upon the integrity of the landscape.

Burial sites do not appear to be a possibility. The cleared nature of the area is not conducive to finding neither scarred nor carved trees nor ceremonial features.

6.0 Assessment Criteria of Aboriginal Archaeological Finds

Various criteria have been developed to apply to archaeological finds. Those used by Navin and Officer (1999), form the basis for assessment.

- ***Isolated finds***
  An isolated find is a single stone artefact, not located within a rock shelter, and which occurs without any associated evidence of Aboriginal occupation within a radius of 60 metres. Isolated finds may be indicative of:

  Random loss or deliberate discard of a single artefact,
  the remnant of a now dispersed and disturbed artefact scatter.
  An otherwise obscured or subsurface artefact scatter

  Except in the case of the latter, isolated finds are considered to be constituent components of the background scatter present within any particular landform.

- ***Background scatter***
  Background scatter is a concept used by archaeologists to refer to artefacts that cannot be usefully related to a place or focus of past activity (except for the net accumulation of single artefact losses). Background scatters are a temporarily unrelated accumulation of artefacts across a large area and will vary in density according to the type and frequency of past occupation within that landscape. A background scatter can be defined as artefactual material where association between artefacts can only be described using large scale and inclusive temporal and spatial categories of past occupation.

  Archaeologists often make a distinction between an isolated find and a site because an isolated find cannot reliably be related to a place or focus of past activity.

- ***Sites***

A site is defined as any material evidence of past Aboriginal activity, which remains within a context or place that can be reliably related to that activity. . Sites include:

I. Occupation sites (shell middens, rockshelters and open campsites)

2. Aboriginal Reserves and Missions
3. Rock paintings
4. Rock engravings
5. Grinding grooves
6. Quarries
7. Ceremonial grounds
8. Stone arrangements
9. Carved and scarred trees
10. Burials
II. Natural sacred sites

(For a description of the above see glossary in the appendix to this report)

Frequently encountered site types within south-eastern Australia include open artefact scatters, coastal and freshwater middens, rock shelter sites including occupation deposit and/or rock art. Grinding groove sites and scarred trees. For the purposes of this section, only the methodologies used in the identification of these site types are outlined.

Most Aboriginal sites on the NSW Coast are identified by the presence of three main categories of artefacts: stone or shell artefacts situated on or in a sedimentary matrix, marks located on or in rock surfaces, and scars on trees. Artefacts situated within or on, a sedimentary matrix in an open context are classed as a site when two or more occur no more than 60 metres away from any other constituent artefact. The 60-metre specification relates back to lire definition of an isolated find (Peter above).

Any location containing one or more marks of Aboriginal origin on rock surfaces is classed as a site. Marks typically consist of grinding features such as grinding grooves for hatchet heads, and rock art such as engravings, drawings or paintings. The boundaries of these sites are defined according to the spatial extent of tile marks, or the extent of the overhang, depending on which is most applicable to the spatial and temporal integrity or the site.

- ***Scarred Trees***

Trees with scars of Aboriginal origin form the other major type of artefactual evidence. Each tree is normally considered to be a separate site. The identification of a scar as Aboriginal in origin is dependent on a set of inter-related interpretive criteria. The credibility of alternative causal explanations such as natural traumas and other types of human scarring must be tested for each scar. (see appendix for diagnostic criteria for assessing scarred trees}

7.0 Field Survey

7.1 Strategy

The aim of the field survey was to verify or refute the findings of the desktop survey, which indicated probable Aboriginal Occupation.

7.2 Method

It was decided to circumnavigate the property along the boundary to gain an overall picture of the site and then systematically walk the area paying particular attention to the drainage lines. Each survey unit was investigated separately, with particular emphasis and attention to the dams, exposed areas and drainage lines.

7.3 Site Overview

Much of the site is covered by grassed pasture and there was no evidence of outcropping bedrock. There are no obvious signs of boggy ground and no evidence of slope instability although gully erosion was significant in places but particularly the south western corner.

Existing development

Improvements to the study area include the following:

- Farmhouse and associated infrastructure
- Horse training area which has been levelled through cut and fill
- Previous farm shed areas which contained remnant material
- Several tracks and a gravel access road.

- ***Surface conditions***

Although grass cover generally exists across the study area, it is cropped short and contains many areas of exposure particularly on the slopes and creek banks. The first day of survey was postponed due to rainfall. Climate conditions at the time of the study were fair and dry on the second day. Surface conditions were conducive to an effective survey.

- ***Vegetation***

The current vegetation does not give a good indication of the archaeological potential as it is basically pasture of exotic and native grasses and is not indicative of what may have been there over 200 years ago. The trees have been planted or regrown during European occupation.

A minimum scatter of a variety of ironbark spotted gum type communities exist across the study area.

Based on the topography and landscape, the variety of vegetation that was probably on the subject site at European contact would also have leant itself to the fostering of animal food resource. Many of the current animal and bird species found on the subject site most probably existed on the site at European occupation although as to the abundance is speculative.

7.4 Survey Effectiveness

The effectiveness of archaeological field survey is to a large degree related to the degree of ground surface visibility and obtrusiveness.

Visibility according to Schiffer (1978) can be defined as "the extent to which an observer can detect the presence of archaeological material at or below a given place." Areas with little or no vegetation, minimal soil deposition, or rapid rates of erosion, tend to be considered to have high visibility as archaeological evidence will not be covered by leaf litter, vegetation or soil deposits. Areas with soil build up, minimal erosion, pasture and vegetation cover will tend to have minimal visibility.

Schiffer also coined the term obtrusiveness for the ease with which the materials produced by a people are readily apparent. A society that produces monuments or tools out of durable materials and/or is generally sedentary is more likely to have archaeological evidence surviving the passage of time than a society whose tools are non-durable and/or tends to be nomadic. Obtrusiveness is the chance of archaeological evidence surviving over time either through durability or the concentration of artefact scatter within a given landscape.

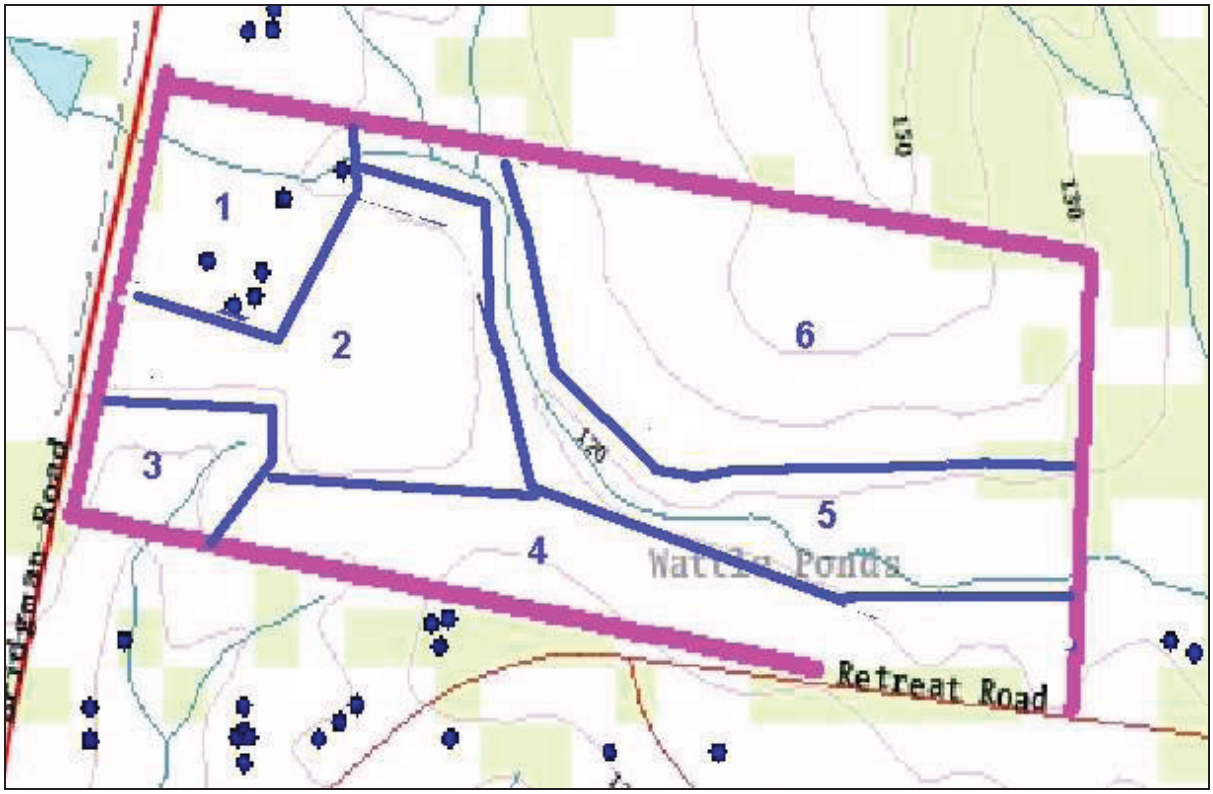
Past Aboriginal activities are not well represented by surviving material evidence. This is partly because many activities did not leave material evidence eg. Tools were reused, but it is also because very little cultural material survives. Wooden or bone tools in particular are easily destroyed by fire or rot overtime due to the generally acidic nature of the soil or attack by insects and fungi. An exception to this is shellfish, which are very durable. Easily recognised stone implements have been gathered overtime before it was illegal to do so. Other stone tools that are not easily recognisable are often discarded or buried by natural or anthropogenic processes.

The survival of material that is durable is also affected by recent land use. Cultivation and other anthropogenic activities have destroyed many archaeological sites. However, cultivation can also help expose sites that would otherwise be covered. It would appear that given the pasture grass cover, extensive development of the site, previous use as an agricultural school and Boys Home that a field survey is unlikely to yield archaeological evidence.

- ***Landscape/survey Units***

In order to ensure the field survey is as effective as possible the study area was divided into survey units. Based on topography and landscape classification, the site can be generally divided into 6 survey units based on landscape:

> **Unit 1:** House paddock. Part of an elevated level hilltop of 140m AHD extending to the North West for about 500m before rising into a flattened apex of 150m. Slope less than 5%. Significantly disturbed area with house, sheds roads and horse arena on the northern side. Cut and fill used to level the horse arena on the edge of the 140m contour.
>
> **Unit 2**: Part of the same elevated hilltop, but at the margins slopes away quite observably. The northern edge contains drainage gully and the southern the commencement of the steep gully. Soil integrity fairly intact but subject to sheet erosion. Contains evidence of previous sheds and consequently soil disturbance allowing good visibility. The eastern margin has been mounded along the contour for erosion mitigation purposes and very good visibility. The mounding would produce a similar effect to a grader scrape for subsurface testing but not controlled.
>
> **Unit 3**: Gully. Highly eroded and steeply incised. Beginning of headwaters of unnamed creek flowing south to the Hunter River. Archaeological evidence was discovered several hundred metres downstream offsite.
>
> **Unit 4:** North facing gentle hillslope with shallow drainage channels commencing on southern boundary from edge of ridgeline. Generally the area between the 130m AHD ridgeline boundary and the 120m creek margin.
>
> **Unit 5:** Shallow creek valley below the 120m contour. Degraded in places with 2 very old vehicular crossings. The section to the east of unit 2 has been filled with railway ballast in the 1960's in order to prevent erosion. Although good visibility a highly compromised landscape element.
>
> **Unit 6:** South facing hillslope which is part of a much larger hill with a highpoint of 150m on the neighbouring property. Well grassed although cropped short with intermittent tree regrowth. Slope above 10%. Runoff on this unit would be high.



Map 10 Landscape survey Units

Coverage Data
A summary of the effective survey coverage follows.

Survey unit	**Topography**	***Surface slopes***	**Visibility**	***Area available for detection***	**finds**	***Archaeological Survey constraints***
Upper Hillslope Unit 1	East facing slope, grass cover cropped short. Disturbed through cut and fill and buildings.	<5%	Fair	70%	nil	Disturbed house paddock and horse arena
Slope Unit 2	Well grassed, East facing slope, sloping towards creek.	<5%	Very good	100%	Open campsite E	Soil disturbance. Profile compromised
Gully Unit 3	Steep incised gully. Not well covered in grass highly eroded with soil exposure	>10%	Very good	100%	Artefact scatter and potential to conceal artefacts	Soil erosion
Slope Unit 4	grassed gentle slope to the north with exposure from sheet erosion and woodlands in places	<5%	Very good	100%	Campsites A, B, C, D	Pasture cover, soil integrity from erosion
Creek Unit 5	Gentle shallow creek very eroded with fill and ballast in places	N/A	Very good	100%	Artefact Scatter G	Fill and modifications
Hillslope Unit 6	South facing well grassed hillslope with intermittent tree coverage regrowth.	10%	good	80%	nil	Slope, highly susceptible to fast run off. Pasture cover

Table 1 Effective Survey Coverage

8.0 Finds

There were 142 flakes, 18 cores, 4 scrapers, 1 core pebble and 1 spear point in 7 distinct locations across the study area. The majority were found on the north facing slope approximately 40 - 50 metres from the creek. The seven locations can be categorised as 5 open campsites and 2 artefact scatters. The artefact scatters were in drainage (creek) lines and were obvious wash downs from either upstream or up bank. The open campsites were on hill slopes and about 40 -50 metres apart from each other. Generally they were separated by a drainage gully or change in contour/aspect. A, B, C, D, E, are the open campsites and F and G the artefact scatters. Open campsite e is quite large and it was not possible to determine the exact size of the campsite due to the area being disturbed. Sheds and outbuildings had been previously

erected on the site and earthworks had change the integrity. The earthen bund was considered to be part of the one campsite although it was not possible to be certain. The area may have consisted of more than one campsite but artefact integrity laterally and vertically was compromised. It was decided to treat the area as one open campsite location. It is also not known if the campsite may have extended into where the house was situated. The following figure illustrates the location and concentration of artefacts.

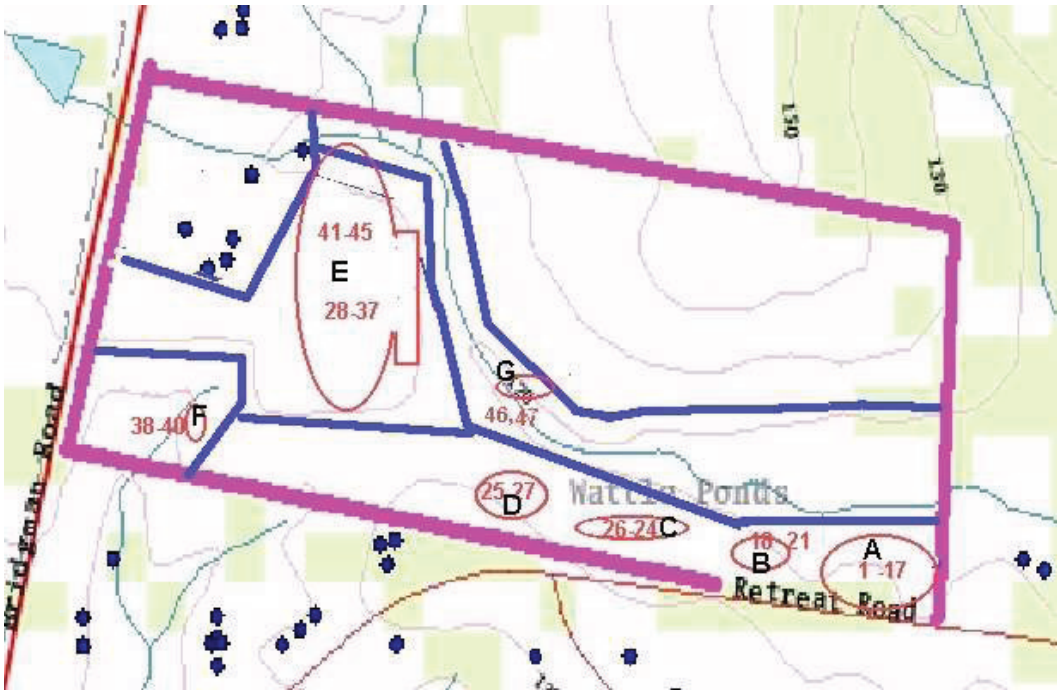
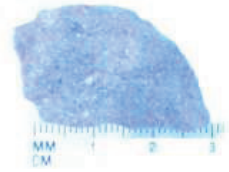
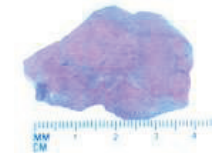
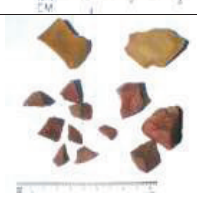
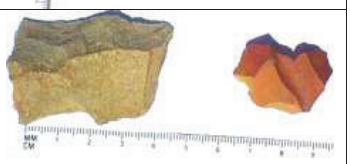
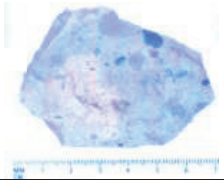


Table 2 Archaeological Objects Found in the Study Area

Find	Location AMG	Description	Comments	Picture
RBS1	0328655 6401019	Core 8.5cm X 9.5cm		
RBS2	032 8 6 3 6 6401075	Scraper		
RBS3	0328613 640-1068	White silcrete		
RBS4	0328608 640-1085	Yellow mud stone		

Find	Location AMG	Description	Comments	Picture
RBS5	0328646 64010 8 6	Red silcrete		
RBS6	0328699 64010 8 5	Artefact scatter site		
RBS7	0328713 640-1094	1 red silcrete 2yellow mud stone's		
RBS8	0328705 6401097	2 yellow mudstone		

Find	Location AMG	Description	Comments	Picture
RBS9	0328701 6401106	Yellow mudstone		
RBS10	032 8702 640-1108	Yellow mud stone		
RBS11	0328705 640 10109	Red silcrete		
RBS12	0328705 640-1121	Red silcrete white silcrete		

Find	Location AMG	Description	Comments	Picture
RBS13	0328702 640-1114	Core		
RBS14	0328713 640-1125	Artefact scatter		
RBS15	0328707 640-1130	Red chert yellow mud stone scatter		
RBS16	0328649 640-1096	Silcrete		

Find	Location AMG	Description	Comments	Picture
RBS17	0328574 640-1087	Yellow mud stone / silcrete scatter		
RBS18	0328553 640-1097	Yellow mud stone	In a wash down area	
RBS19	0328520 6401092	Spearpoint		Nil
RBS20	0328513 640-1079	2 yellow mud stone		Nil
RBS21	0328484 640-1099	Yellow mud stone		Nil
BS22	0328405 640-1087	Yellow mud stone		Nil

RBS23	0328392 640-1035	Yellow mud stone		
RBS24	0328358 640-1124	2 flakes		
RBS25	0328223 640-1157	2 red mud stone		
RBS26	032 8202 64011 6 4	White silcrete flake, core		
RBS27	0328155 640-1187	Red mud stone flake		
RBS28	0328110 640-1204	Artefact scatter red mud stone		

Find	Location AMG	Description	Comments	Picture
RBS29	03280 2 9 640-1240	Yellow mud stone		
RBS30	0328048 640-1281	2 yellow mud stone flakes 1 flake pebble		
RBS31	0328007 640-1291	Artefact scatter		
RBS32	0328004 640-1316	2 cores 3 flakes		

Find	Location AMG	Description	Comments	Picture
RBS33	0328050 640-1273	2 Yellow mud stone, silcrete core		
RBS34	0328064 640-1274	Red mud stone core red silcrete scraper		
RBS35	0328069 640-1268	Silcrete flake artefact scatter		
RBS36	0328 110 640-1297	Silcrete and mud stone scatter		

Find	Location AMG	Description	Comments	Picture
RBS37	0328113 640-1252	30 pieces mud stone flakes and scrapers on levee bank	Levee bank constructed along contour to restrict water flow and erosion. Artefacts located along length as integrity of site compromised. Unable to determine if part of a more complex site and exact nature of scatter.	
RBS38	0327918 640-1242	Gully, sandy deposition potential to conceal washdown artefacts		nil
RBS39	0327869 640-1206	Mud stone core	In gully	
RBS40	0327883 640-1145	2 silcrete flakes	Edge of gully	

Find	Location AMG	Description	Comments	Picture
RBS41	0328067 640-1363	Core and flake		
RBS42	0328050 640-1414	4 cores 8 flakes silcrete and mud stone		
RBS43	0328083 64 01492	Mud stone and silcrete flakes		
RBS44	032 8168 640-1434	quartz		

Find	Location AMG	Description	Comments	Picture
RBS45	0328210 6401 229	3 mud stone flakes and a quartz flake		
RBS46	0328175 640-1291	Core		
RBS 47	0328215 640-1268	2 White mud stone and a first flake chert		

9.0 Discussion

Despite the abundance of artefacts across the study area, the potential for finding stratified deposits was considered low due to the erosion and shallow nature of the soil particularly on the slopes.

The artefacts in general were typical of sites throughout the region. It would appear by the material composition of the artefacts, the parent material was probably exported on site. The majority of the artefacts were basically tools to aid hunting and food preparation and not tools for implement manufacture or reduction. The cores were used to make flakes for spears and scrapers; and tools such as hammers etc were

not found in association with the cores which is problematic and poses the question why? Cores are used for the creation of stone pieces (flakes) for specific purposes. Some type of hammer/striker is required to manufacture the flakes. Several reasons can be postulated. First, the more apparent tools have been collected over the years since European occupation. Second, perhaps cores and parent material were readily available, but precise flake manufacture instruments were not so easily obtainable and therefore more valuable and carried by the user from place to place. Third, specific stone working tools would never be as plentiful as flakes and cores and proportionally have a greater chance of remaining hidden or undetected.

Generally the artefacts visible on eroded soil surfaces within the study area tend to suggest widespread occupation of the area on either a recurrent basis, or over a long period of time. The stone flaking debris is interpreted as representing a continuum of occupation debris deriving from repeated occupation events probably on a seasonal basis. The visibility of the amalgamated artefact assemblages depends on the balance between vertical movement within the soil profile and erosion. The artefacts were observed on areas of moderate erosion, where artefacts are present as a 'gravel' lag on the eroded surface and are clearly subject to both vertical and lateral reworking. There is neither reason to assume that they are a result from any single activity or repeated activity type, particularly as no stone working tools were observed, nor knapping floors or hearths. Further up the slope toward the southern boundary and parallel to the line of finds, electrical or communication trenching was observed and had similar exposure. However, no artefacts were observed. Whilst many reasons could be advanced for the lack of artefacts there is the strong possibility that the 40-50 metre mark from the creek was the normal occupation pattern.

Dean-Jones in her study at nearby Hambledon Hill commented on the problems associated with surface observation of multiple artefacts.

"The artefacts present on the surface may give erroneous impressions of occupation activity in two ways:

> (a) The evidence from several events, possibly spread over a long period of time may be concentrated spatially and vertically, so that the intensity of occupation appears higher than is actually the case.
>
> (b) Some forms of flaking debris are differentially lost because of surface processes, but the proportional loss is likely to be highly variable. This means that in many cases, indirect indicators of flaking activity must be used to indicate the type of technology applied, or the function of the site (eg were artefacts discarded at a site actually made or used there?)"

For this reason, only general observations about artefact raw material, shape and size can be addressed.

The artefacts recorded are a result of two types of manufacture; primary reduction and purpose specific artefact manufacture such as elouras. The presence of certain distinctive flaking techniques in artefact assemblages is taken as evidence to provide age limits for at least part of the occupation debris. For instance, the presence of backed blades and associated cores and flaking debris indicates mid to late Holocene occupation. Some sites in the Hunter are dominated by flaked stone of this type. Other sites contain both blade flake debris and larger cobble core debris causing age analysis of the site to be problematic. The study area contained flake debitage, cores and blade manufacture including an eloura. It is unclear whether the eloura and other larger tools were manufactured on site or brought there. The cores seem to have been used to produce much smaller flakes and scrapers.

It would appear that although there were areas of distinct concentration of artefacts across the study area, they were but microcosms of a larger enmeshed occupation area. 'They appeared to be rooms of a much larger house used over a long period of time.' Placing the study area in today's perspective it would appear to be a substantial guest house used by generations of the same family for their annual holiday.

There is a high proportion of relatively large fragments of stone cores in the overall number of artefacts, and the cores also retain relatively large amounts of cortex on dorsal and lateral surfaces, and on the platform. This characteristic suggests proximity to a source of suitable raw materials in cobble form. Silcrete cobbles could have come from the Hunter River, but also from outcrops which are within reasonable distance of the study area. What seems certain is that the study area did not contain the source of the raw material and therefore not a continuous manufacture area or "stone tool factory".

The evidence seems to suggest an intermittent but frequent occupation site perhaps a favoured area for visiting groups or an overnight stay for a local group on the journey to the Barrington's. Unfortunately the analysis of the stones is unable to reveal the complete picture.

What does emerge however is the pattern of occupation 40-50 metres from a creek line. No artefacts were observed higher up the slope, despite good visibility and similar erosional characteristics. Artefacts were observed within the creek margins but very few and were obvious by their position to have been washed down to their position. One would have expected artefacts in survey unit 1, but as it was the house paddock, with a horse arena and altered landscape through cut and fill it is understandable that no artefacts were observed. The location of the house has a very favourable aspect and position and it would have been interesting to determine if Aboriginal occupation occurred at the house site or was limited to the 40-50 metre mark from the creek. Artefacts were observed over the fence on the neighbouring property along the creek margins.

The location of the deposits suggested they were basically in-situ although the stratigraphic integrity was compromised.

9.1 Significance Assessment

It is important to stress that the significance of a cultural landscape is not dependent on archaeological evidence being significant in itself but the interrelatedness of the individual objects to the cultural landscape as a whole. The finding of an artefact in a particular spot of the landscape does not necessarily make that spot or the object significant. What is significant is the understanding as to how and why the object is located where it is. The object may be a result of a wash down from a campsite location above. The lack of observable objects also does not indicate a lack of significance particularly when there is documented historical evidence of extensive aboriginal occupation.

Although many artefacts were observed through the field survey, they were no different or better examples of artefacts found elsewhere in the region or nearby. Previous archaeological work in the area and landscape modelling predicted the observation of artefacts.

Through understanding the cultural landscape in an holistic manner one may be able to appreciate the associations that may exist between Aboriginal objects and other features within the landscape.

Using the criteria outlined earlier the significance of the study area in an Aboriginal cultural heritage context can be assessed as follows:

- *Social value*

Much of the oral tradition and knowledge has been lost to the Aboriginal communities today. However as research and surveys discover and reveal greater understanding of the past, communities are rediscovering and appreciating what has gone before.

At the present time, there is an understanding through the historical record of traditional and historical association of Singleton and the Aboriginal community of the past.

Much of the oral tradition and knowledge has been lost to the Aboriginal communities today. However as research and surveys discover and reveal greater understanding of the past, communities are rediscovering and appreciating what has gone before. At the present time, there does not appear to be spiritual or contemporary associations and attachments which the subject site has for the present-day Aboriginal community. There does not appear to be any association with tragic or warmly remembered experiences, periods or events. However that is not to say that discovery of evidence or knowledge of past spiritual connection to the place will not rekindle such association.

- *Historic value*

Whilst there is evidence of Singleton as a whole having historic connectivity with the Aboriginal community, there is no evidence as to the interrelatedness of the site with the Aboriginal and European Community. The Ethnographic record indicates that diseases and in particular a small pox epidemic affected the Aboriginal population to such an extent that it virtually wiped out the local population and consequently the oral record and traditions of the area. However it is more than likely from the historical evidence of post European occupation elsewhere that the best grounds were gradually taken up by the European. Whilst the Aboriginal community generally co-existed with the European settlers there are several reports of hostilities between individuals in the area.

At this time, there does not appear to be an association of the study area with a person, event, phase or activity of importance to the history of an Aboriginal community.

- *Scientific value*

The history of the European settlement of Singleton documents Singleton as an area of Aboriginal occupation. The development of the transport route from Sydney to Newcastle overland via Singleton for transport and trading purposes as not only demonstrates Singleton as the key to European development of the Hunter, but indicates and demonstrates the importance of the area to the Aboriginal people. Singleton was first observed as an oasis and fertile gateway to productive plains and it was the occupation and intensive use of the area by the Aborigines that first drew the Europeans attention to the area. Whilst unfortunately there is no well documented history of use of Singleton by Aboriginal peoples and the subject site in particular there is no question that the Singleton area at large sustained a substantial healthy Aboriginal population.

The importance of the landscape and surrounding area of Singleton and the Hunter River can not be overstated because of its archaeological and/or other technical aspects and

the likely research potential of the area. Whilst the importance of the data observed, its rarity, quality and representativeness may not be outstanding; the amount of potential archaeological evidence based on the geography and landform and history of the area suggests a solid framework which may contribute further substantial information.

- *Aesthetic value*

The sensory, scenic, and creative milieu of the landscape evokes feelings of a sense of place and its past use, but not readily so. The study area is not particularly fertile, water is a scarce commodity and the creek is intermittent, but the archaeological record suggests a far different picture for times past. Development, anthropogenic and perhaps natural changes have altered the aesthetic value of the study area. There is no sense of dynamism and belongingness to the Aboriginal community.

Unfortunately, while it is readily apparent Aborigines utilised the resources of the study area it is unlikely that evidence of the exact nature of occupation can be conclusive. Archaeological evidence was discovered through field survey, but the stratigraphic integrity remains problematic. Undetected sites and artefacts might remain in the study area as subsurface artefacts, however, given the nature of the soil for the study area this is highly unlikely. The topsoil has been distorted and there is clear evidence of erosional movement, particularly of small artefacts which are more susceptible to carriage by sheet wash. It cannot be assumed that the present distribution of artefacts across the study area is in any way representative of the discard or chronological pattern but it is highly likely that the distribution reflects the occupation pattern.

10.0 Impact Assessment

The question that needs to be answered by any survey is:

Will the proposal impact on any Aboriginal heritage or potential Aboriginal heritage?

In assessing the development in accordance with the significance criteria, if there is no impact on Aboriginal places or objects then referral to NPWS is not required for a permit under section 90 of the NPWS Act.

However, if the proposal does impact upon Aboriginal Objects then consent under section 90 of the NPWS act will be required for the proposal to proceed.

The proposal will substantially impact on Aboriginal Objects.

Several options have previously been considered for management of archaeological evidence in where its distribution conflicts with development proposals. These include:

- Consent to Destroy without salvage
- Consent to Destroy with collection
- Use of zoning or development control to restrict construction etc to parts of the land where no archaeological evidence occurs, and is not considered likely to occur.
- Use of Conservation Zones or Agreements for sensitive or significant areas.
- Sub surface testing programs to provide additional evidence of site extent.
- Small scale salvage excavation, within a defined area.
- Full detailed salvage excavation, with moderately large sample areas relative to assumed total site area.
- Use of broad area, mechanically assisted excavation or linear scrapes.
- Monitoring during construction or other development.

Each of the above options to some degree more or less add to the archaeological record and future research for the archaeological and scientific community, but do nothing for the Aboriginal Community.

An examination of those options and benefit to the Aboriginal community reveals the following:

- Destruction: developer benefits proposal proceeds; no benefit to Aboriginal community.
- Destruction and salvage: developer benefits, museum or Community may gain artefacts, Aboriginal site officers and archaeologists may receive payment for work undertaken.
- Development Control: developer benefits but not completely, certain land is sterilized. Aboriginal community does not generally have access; cordoned off areas under protection of DEC who have to maintain Objects as part of their charter. Cost to taxpayer no community benefit unless a park or reserve.
- Conservation Zone: developer benefits as able to develop proportion of site; No benefit to Aboriginal community and Public is excluded. DEC control and cost to taxpayer for maintenance. Scientific community may benefit in the future if research program undertaken.
- Subsurface testing; developer pays, Archaeologist benefits by additional work. Scientific record updated but generally of no import. Report filed away in archives. No benefit to Aboriginal community. Developer may or may not benefit depending on result of subsurface testing.
- Excavation: same as subsurface testing
- Monitoring; developer benefits as project goes ahead but at a cost to developer for monitoring program. Aboriginal Site officers may obtain wages from project. Poses problems as to what happens if further Objects located.

Given that Aboriginal Cultural heritage should be the domain of the Aboriginal community it stands to reason that disturbance, destruction or further research into Aboriginal heritage should be of benefit to the Aboriginal Community.

An analysis of all the Archaeological or Cultural heritage assessments in NSW will reveal that very few if any have been of benefit to the Aboriginal Community. The Aboriginal Communities are not any better off because their heritage has been considered in development proposals. There has not been an improvement in health, education, lifestyle, self esteem and dignity or community development.

Given the large area of land in the Singleton area that has been assessed for Aboriginal heritage and consequently an understanding of Aboriginal occupation, one must ask what has been achieved by the various management recommendations. Some objects have been destroyed or collected, areas set aside for conservation purposes and development in various forms. The developers have outlaid substantial expense for these achievements but with no tangible or realistic benefit to the Aboriginal or general community. Surely the money could have been better spent on enhancing and developing the Aboriginal community.

Although substantial Aboriginal Objects were observed during the survey and even though all Aboriginal Objects are considered significant to the Aboriginal community they do not add to the scientific record, are not rare or represent an unusual type. It is the view of this archaeologist and the Aboriginal sites officers from the Wannaruah Local Aboriginal Land Council and from the Wannaruah Tribal Council that the development be allowed to proceed, provided benefit and compensation for the destruction of Aboriginal heritage is accrued to the Aboriginal community.

This benefit could be in the form of a payment to a trust fund established by the Aboriginal community toward the health and education and employment benefit of the

Aboriginal Community. The payment could be in the form similar to a Section 94 payment to Local Government with a contribution based on an amount per lot created.

Further, it is suggested that Singleton Council and the Aboriginal Community enter into discussions to develop such a contribution shire wide for all development. This would mean that the Council will have assessed Aboriginal heritage under section 79 of the EP&A Act and an ongoing benefit will accrue to the Aboriginal community for having undertaken such assessment.

11.0 Recommendations

These recommendations are made in consultation with the Local Aboriginal Land Council and under the legal requirements of the NPWS Act 1974

- That, as there is impact on Aboriginal Objects, there is impediment to the proposed development for Aboriginal Cultural reasons and an application to destroy be obtained from the DEC provided;

  That the proponent enters into negotiation with the Aboriginal community for compensation for the loss of Aboriginal objects.

12.0 Certification

This report was prepared in accordance with the brief given by HDB to assess the impact of the proposed development on Aboriginal heritage and was undertaken to demonstrate due diligence.

To the best of our knowledge the report accurately reflects the archaeological survey, findings and results, as well as the input and recommendations of Wannaruah Local Aboriginal Land Council and the Wannaruah Tribal Council.

Signed
(Archaeologist)

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14.0 Glossary

Aboriginal Site

I. Occupation Sites

Evidence of human occupation, which includes food remains, stone tools, baked clay, fire-blackened and fire-cracked stones and charcoal, is found in a range of sites known collectively as occupation sites

- *Shell middens.* These sites are found on the coastline and along the edges of rivers and lakes, It is a deposit composed of the remains of edible shellfish and also usually contains fish and animal bones, stone tools and campfire charcoal.

- *Rock shelters with archaeological deposit.* In rock outcrops such as sandstone and granite, overhangs sometimes form creating useable shelters. Sediments from fires, roof fall. discarded stone tools and food remains form a deposit protected within the shelter and this deposit can be excavated by archaeologists to study patterns of Aboriginal life.

- *Open campsites.* These sites are mostly surface and associated subsurface scatters of stone artefacts, sometimes with fireplaces. They exist throughout the landscape and are the most common site type in rural areas, While found in all environmental locations larger and denser sites tend to be found on riverbanks and lower slopes racing watercourses, as well as ridgelines and other areas that offers movement routes. The study or open sites can assist in understanding patterns of Aboriginal land use.

- *Base camp* This is the name applied to the major or main area of habitation. They tended to be close to a permanent water source and food source. Generally well sheltered. These camps would be rotated for hygiene reasons. They are different to smaller open campsites, which were mainly camps on transport routes or overnight areas on hunting forays.

2. Aboriginal Reserves and Missions

These places are very important to Aboriginal people today. Although Aboriginal people were often moved to reserves by force and were restricted by harsh regulations, the reserves became home to many people, where they and their families were born, lived and died. Historic cemeteries at many reserves are still cared for by the local Aboriginal community.

3. Rock Paintings

Aboriginal paintings are found on the ceilings and walls of rockshelters, which occur wherever suitable rock surfaces and outcrops, exist. Figures include humans, kangaroos, emus, echidnas, grid patterns, animal tracks, boomerangs, axes, hand stencils and other motifs. Paintings are made with white, red, yellow and black pigments. The motifs may be drawn, painted or stencilled, and charcoal drawings are common as well.

4. Rock Engravings

These occur usually where there is a suitable exposure of fairly flat, soft rock or in rock overhangs. The outlines of motifs were made by hitting the rock surface with a sharp stone to make small holes or pits. Sometimes the pits were jointed to form a groove, by rubbing with a stone. People, animal shapes and tracks are common as well as non-figurative designs such as circles.

5. Grinding Grooves

Grooves are located on flat rock exposures close to a stream or rock hole. They vary in size but are generally long (about 30-40cm in length) and elliptical in shape. Stone axes were ground into the softer stone allowing a working edge to be created or sharpened- Deeper grooves may have been used to work spears or other thin implements.

6. Quarries

Quarry sites occur wherever there are outcrops of siliceous or igneous rock. Stone material was used in creating stone tools, which in turn were used to work wood and provide people with tools to assist in hunting and gathering activities. Siliceous rock is easily flaked and made useful cutting and scraping tools whereas igneous rock was preferred for edge-ground tools, particularly axes.

7. Ceremonial grounds

These sites were used for initiation ceremonies, marriages, tribal meetings and other important functions and are of great significance to Aboriginal people. Bora rings, which are one or more raised earth rings, were used for male initiations.

8. Stone arrangements

These range from simple stone mounds to complex circles and pathways. Arrangements are found throughout inland New South Wales as well as the coast, where fish traps were sometimes constructed.

9. Carved and scarred trees

Tree bark was used for constructing canoes, shelters, coolamons and shields. Distinctive scars are left from bark removal and can usually be differentiated from natural scars. Carved trees are more distinctive, exhibiting patterns etched into the wood of the tree. They can occur throughout the state although clearing and forestry practices have greatly reduced numbers.

A range of diagnostic criteria has been developed to assist in the identification of Aboriginal scarred trees. The following criteria are based on archaeological work conducted by Simmons (1977) and Beesley (I989) It should be noted that these criteria have never been quantitatively tested or quantified using non-relative criteria such as absolute dating or an analysis of pre-occluded scar morphologies. This is because radiocarbon dating or dendrochronology is mostly inconclusive. and the removal of regrowth exposes trees to further damage.

1. **The scar does not normally run to ground level**: (scars resulting from fire, fungal attack or lightning nearly always reach ground level). However, ground termination does not necessarily discount an Aboriginal Origin (some ethno-historic examples of canoe scars reach the ground);

1. (A). **If a scar extends to the ground, the sides of the original scar must be relatively parallel**: (natural scars tend to be triangular in shape):

2. **The scar is either approximately parallel sided or concave, and symmetrical**: (few natural scars are likely to have these properties except fire scars which may be symmetrical but are wider at the base than their apex. Surveyors marks are typically triangular and often adzed);

3. **The scar should be reasonably regular in outline and regrowth**: scars of natural origin tend to have irregular outlines and may have uneven regrowth:

4. **The ends or the scar should be shaped, either squared off, or pointed** (often as a result of regrowth): (a 'keyhole' profile with a 'tail' is suggestive of branch loss);

5. **A scar which contains adze or axe marks** on the original scar surface is likely to be the result of human scarring. Their morphology arid distribution may lend support to an interpretation of an Aboriginal origin: (marks produced after the scarring event may need to be discounted):

6. **The tree must date to the time of Aboriginal bark exploitation within its region**: (an age *of at least* I00 years is prerequisite)

7. **The tree must be endemic to the region**: (and thus exclude historic plantings).

Field based identification of Aboriginal scars, is based on surface evidence only and will not necessarily provide a definitive classification. In many cases the possibility of a natural origin cannot be ruled out, despite the presence or several diagnostic criteria or the balance or interpretation leaning toward an Aboriginal origin. For this reason interpretations of an Aboriginal origin are qualified by the recorder's degree of certainty. The following categories are used

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

Aboriginal origin is most likely - This is a scar that conforms to all of the criteria and where a natural origin is considered unlikely and improbable.

Probable Aboriginal sear - this is a scar that conforms to all of the criteria and where an Aboriginal origin is considered to be the most likely. Despite this, a natural origin cannot be ruled out.

Possible Aboriginal scar - This is a scar which conforms to all or most of the criteria and where an Aboriginal origin cannot be reliably considered as more likely than alternative natural causes. The characteristics of this scar will also be consistent with a natural cause.

10. Burials

Aborigines feel equally as respectful about prehistoric burials as modern cemeteries. As Aborigines have lived in Australia for over 30 000 years burials are seen as part of a continuing culture and tradition as well as offering valuable archaeological information. The dead wore sometimes cremated, sometimes placed in trees or rock ledges and sometimes buried. Burials exist throughout New South Wales and can be accidentally uncovered in construction work or become exposed through erosion. It is important that if a skeleton is found it be reported to the police, to a representative of the National Parks and Wildlife Service and to the relevant Aboriginal community group.

II. Natural sacred sites

Many features of the landscape, such as mountains, rocks, waterholes etc., are regarded as sacred sites by Aborigines. They are places associated with Dreamtime ancestors and usually can only be identified by Aboriginal people. They retain a high significance to Aborigines.

Fire- stick Farming
The process of burning to aid in hunting. Animals could be speared or clubbed as they fled to escape the flames. Other uses of fire were for long term hunting strategies. After firing, the bush would regenerate attracting animals on which the hunters would prey. (Flood, p250)

Flake fragment of stone that was used as a tool for weapons, scrapers etc.

Geographical

AHD (Australian Height Datum) Australian standard measurement from the mean high sea level.

Swamp. An almost level, closed, or almost closed depression with a seasonal or permanent water table at or above the surface, commonly aggraded by overbank stream flow (Speight1990: 33).

15.0 Appendix

- Land Council Comments