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THORNTON MASTER PLAN – DESKTOP HERITAGE ISSUES ASSESSMENT

PREPARED FOR
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TABLE OF CONTENTS

SUMMARY

A review of the NPWS Aboriginal Heritage Management System has found that ten sites lie within the study area, and the frequency of sites that are recorded in the broader area would indicate that further material is likely to occur in the study area. Research conducted in development based assessment in the Thornton area and in the neighbouring Hexham area have indicated that the spurs within the Beresfield soil landscape that dissect the resource rich swamp zones can be anticipated to have high archaeological sensitivity. Council is advised that a combination of further work and conservation zones should be considered if urban expansion is considered for the area.

Consultation with Mindaribba Local Aboriginal Land Council has found that the area is considered culturally sensitive for the same reasons. A copy of this report has been emailed to Victor Perry representing Wonnaruah Nation and Lower Wannarua Tribal Council. The email to Lower Wannarua did not succeed and phone attempts to the East Maitland office and to Mr Andersons mobile phone have yet to make contact. Mindaribba LALC and Wonnarua Nation will forward documentation as soon as possible.

THE STUDY AREA

The Thornton Master Plan has been instigated by Maitland City Council to identify issues that require consideration in the context of development planning. The study area lies north of the current Thornton urban area, and is dissected by Raymond Terrace Road (see Figure 1). The current land use is predominately grazing.

ENVIRONMENTAL CONTEXT

The study area is generally cleared and pasture improved. The site lies within the Beresfield soil landscape with a topography of undulating low hills and rises. Slope gradients are 3 – 15 % with the majority of the surface at the lower end of the scale. The sites lies on the Permian sediments in the East Maitland Hills region. The soils are moderately well to imperfectly drained Yellow Podzolic Soils, Brown Podzolic Soils and brown Soloths on the crests. Imperfectly to poorly drained Yellow Podzolic Soils, yellow Soloths and Gleyed Podzolic Soils on the lower slopes (Matthei. 1995).

The study area comprises a portion of a large low spur, orientated to the north east. To the west and north of the spur lie the wetlands of Four Mile Creek. To east and south lies Woodberry Swamp.

The Last Glacial Maximum (LGM) prevailed from 25,000 to 12,000 years ago. At the height of the LGM the climate was drier, colder and windier with winds predominately from the west, possibly carrying dust clouds. This is the time period when large sand dunes formed in may locations in NSW. The sea level was 130 metres below that of today and the Australian continent was one third larger (Mulvaney & Kamminga 1999). During this period, the study area would have formed a ridge adjacent to the lowlands through which the Hunter River incised.

From 10,000 years ago (the Holocene), sea levels rose to their current level, stabilising about 6,000 years ago. The mean annual temperature rose to present levels and rainfall increased. By the

mid-Holocene, Woodberry Swamp was a shallow body of water. The swamp infilled with deposit from marine and terrestrial deposits resulting in up to 50 metres of deposit in places particularly in paleovalleys (Ormerod in Besant 2000).

The study area is located in a resource rich area. Fresh water would have been available in the ephemeral creeklines dissecting the spurs and draining into the swamps. The swamps would have attracted thousands of water birds, provided fish and shellfish, crustaceans and reeds for weaving.

Hexham Swamp, south of the study area, was described by Europeans in the 1820's as "*literally covered with wild geese and a water fowl called Redbills. ....when the flock arose the place had the appearance, as to numbers, of a well stocked rookery. Kangaroos were very abundant from the numberless tracks we saw of them"* (Threkeld in Gunson 1975 p 86). It is reasonable to assume that Woodberry Swamp would have also supported such a density of wildlife.

ARCHAEOLOGICAL CONTEXT

ETHNOHISTORY

The study area is a part of the country of the Pambalong peoples of the Awabakal Tribe and in general terms bounded by the southbank of the Hunter River, the Sugarloaf Mountains, Lake Macquarie and Newcastle West. The Pambalong peoples would have had access to a variety of environments including Lake Macquarie (salt water), the Hunter River (tidal zone), the mountains to the south west and the large Hexham Swamp (estuarine) adjacent to the study area.

L. E. Threkeld was a missionary who established a Mission initially on the eastern side of Lake Macquarie and subsequently to the western side of Lake Macquarie in 1824. Threkeld maintained records of the Aboriginal peoples in this area, documenting 'observations' which serve as one of the few records of Aboriginal culture in this period. Threkeld was one of the 'new breed' of missionary trained in the period after 1815 when observation based information was espoused as the valid method of documenting unfamiliar cultures (Gunson, 1974). The documentation of Awabakal language, clan territories, kinship and mythology, by Threkeld, has produced some of the best ethnohistory in the early 19th Century (Gunson, 1974, Mulvaney 1992).

Threkeld recorded the Awabakal dialect with phonetic spelling and translated Scriptures into Awabakal. Threkeld also wrote down all he could find out about Aboriginal culture. He attempted to provide checks and balances on the information he accumulated by interpreting with the assistance of a *koradji* or medicine man, with whom he had a trusted relationship. He then verified this interpretation by questioning other people he came in contact with, to improve upon accuracy of his work.

The information recorded by Threkeld shows the adaptation of tradition methods to new materials, for example the replacement of stone barbs on war spears with barbs of glass.

*"The battle -spear .....[has] pieces of sharp quartz stuck along the hard wood joint on one side so as to resemble the teeth of a saw. The march of intellect directed the blacks, latterly, to use fragments of broken glass-bottles instead of quartz, thus inflicting fearfully lacerated wounds with the deadly weapon"(*Threkeld in Gunson ed., 1974 p67).

A culinary example of this adaptive process is the preparation of corn. Threkeld describes the Aboriginal people cooking Indian corn by stripping the corn from the cob and stirring the grain into a fire from which the logs had been removed to leave the ashes. The process is described as:
" in very little time they swell, burst with a small report and jump out of the hot embers, and a white flour like substance is seen emitted from the heart of the grain through the crack, caused by the parching heat, and being very sweet to the taste, the blacks are very fond of the description of parched corn called jumpers. It affords much amusement ot the evening party to watch the leaps of the grain, and listen to the pops of the plump Indian corn" (Threkeld in Gunson ed., 1975 pp66-67).

The language recorded by Threkeld also tells, in part, how Aboriginal people viewed the landscape in which they lived. Lake Macquarie is Nikkinba, nikkin meaning coal and ba - place of. Pittoba is the place from where pipe clay was obtained (unfortunately Threkeld does not state the location). Pipeclay had an important cultural role in Aboriginal society as it was used, smeared over the head, to signify mourning. Kintirrabin was the name of a small volcano near Redhead about seven kilometres north of the entrance to Lake Macquarie. Threkeld also refers to Kopurraba another small volcano up the Hunter River, where Kopurra, a red earth was obtained. The red earth was rolled into balls and burnt in a hot fire, which changed the colour to a brilliant red. The earth was then mixed with kangaroo kidney fat and used for body paint

Threkeld recorded some of the material culture of the Awabkal. In spite of the frequency with which stone artefacts can be located in Awabakal country, there are few references of stone implement use within Threkeld's records. The only item that Threkeld refers to with stone components is the war spear. Hunting and fishing spears were tipped with hard wood, which had been hardened by fire. There is no reference to the use or manufacture of scrapers, ground tools or any other stone implement types. The Aboriginal heritage preserved in open sites, the site type anticipated in the study area, is limited to stone and dating of this material can be problematic.

REGIONAL CONTEXT

The history of Aboriginal occupation in the Hunter Valley has been shown to have commenced at least 20,000 years ago. A date of 17,000 years has been recorded at Moffats Swamp on the Tomaree Peninsula to the north-east (Baker 1994). Pollen cores at Lake George in southern NSW have indicated vegetation changes at 60,000 found in. The cores indicate a fire regime, which increases in intensity from 60,000 years ago, that has led to the conclusion that the increase is associated with human occupation (Mulvaney & Kamminga 1999). The dating of sites requires a firm stratigraphic context as well as dating methods such as carbon dating and thermoluminescence dating. Sites that provide information for the determination of dates of occupation are found in conditions that provide layered artefacts and refuse in an undisturbed context. The sites most frequently found in the Hunter Valley tend to be open sites that have been subject to disturbance from farming, bioturbation (turned over by worms etc) and rarely provide indisputable stratigraphy. Open sites do however provide information about the use of stone (the most commonly preserved relic), the spatial distribution of sites in a landscape context and provide an important link to past culture for Aboriginal people.

LOCAL CONTEXT

In the first instance a site search was requested for the area of 100 sq kilometres around the study area. The results were so large (over 100 sites) that NPWS requested that the search area be refined to reduce the amount of information in the public sphere. The search area was redefined to focus on the study area and within the area of 12.25 sq kilometres a total of 18 Aboriginal sites have been recorded on the Aboriginal Heritage Information System (AHIMS) held by NPWS. Two of the sites (38-4-0355, 0356, 0395 and 0399) have been recorded twice thus reducing the number to 16.

Ten of these sites lie within the study area (see Figure 1). They comprise open camp sites and isolated finds. One area of potential archaeological deposit was also identified on the corner of Taylor Avenue and Raymond Terrace Road on the study area boundary. This site has been excavated but results are not yet available. The sites recorded relate to specific surveys P. Jones in the course of undergraduate fieldwork (1986) and development related assessment (Kuskie 1994, Dagg, 1996, Curran 1994 and McCardle 2002) . Not all of the relevant reports are available yet for inclusion in this report.

In 1994 P. Kuskie surveyed Lot 1 DP 559519, Thornton for a proposed residential development. The study area comprised two broad low ridge spurs adjacent to Woodberry Swamp. The landscape units within the survey are very similar to what would be expected in the current study area. A total of 9 artefact scatters and one isolated find were found, within the proposed residential development with artefact densities between 2 and 32. The predominate stone material was silcrete. Kuskie subsequently undertook further investigation of the site by means of grader scrapes. A sample of soil was sieved every 10 m along the scrape, and the process repeated into the A2 soil horizon with a further sample sieved every 3m along the scrape. Backhoe trenches were also excavated and partially sieved. The excavation results demonstrated the occurrence of artefacts virtually across the entire study area. The densities of artefacts did appear to increase as the distance to the swamp reduced with the exception of a site almost 1 kilometre from the swamp where silcrete gravel appeared to have been utilised as a stone source.

Curran (1994) located two sites one of which contained 25 to 30 pieces at the site of a planned quarry extension on Lot 1 DP797295, Thornton. Dagg (1996) located four sites with up to 15 artefacts and an isolated find in his assessment of a new road crossing over Four Mile Creek.. A site further away from the creek line was found by Rheinberger, P. in 1998 during assessment of the Doyalson Mine Site.

Site Number	Site Type	Recorded by
38-4-0356 (&0395)	Open camp site	Curran 1994
38-4-0399 (& 0355)	Isolated find	Curran 1994
38-4-0431	Open camp site	Dagg L. 1996
38-4-0432	Open camp site	Dagg L. 1996
38-4-0433	Open camp site	Dagg L. 1996
38-4-0434	Open camp site	Dagg L. 1996
38-4-0435	Isolated find	Dagg L. 1996
38-4-0121	Open camp site	Jones, P. 1986
38-4-0123	Open camp site	Jones, P. 1986
38-4-0124	Open camp site	Jones, P. 1986
38-4-0125	Open camp site	Jones, P. 1986
38-4-0351	Open camp site	Kuskie, P. 1994
38-4-0352	Isolated find	Kuskie, P. 1994
38-4-0353	Open camp site	Kuskie, P. 1994

38-4-0625	artefact	McCarle P 2002
38-4-0626	Potential archaeological deposit	McCardle, P 2002

MODEL

A model of occupation that has been applied in the general area previously is the "home range model" (Foley 1981 in Besant 1999). This model suggests that the size of the home range of any individual group will vary in response to environmental factors. These factors include topography, productivity, climate, habitat and subsistence strategy. Foley (1981), goes on to suggest that the productivity, climate and topography of the area occupied by a group of people will influence artefact discard patterns.

In an area of ecological diversity, such as the current study area, where a variety of resources are found within close proximity of one another, it would be expected that the home range is smaller than areas expansive areas where resources are distant to one another. The size of a home range may reflect cultural adaptation in the form of behaviour, procurement strategies and movement. The adaptations themselves are going to impact on what would be expected in the archaeological record.

The model also anticipates that where marine resources are an important part of the subsistence strategy, the home range is also decreased in size, due to need to move home base less often and the potential to support a larger population.

A higher local population density is likely to produce an archaeological record of artefact discard patterns "that consists of a series of frequent localised high peaks. These may be typologically distinct". (Foley 1981). The archaeological measure of a more 'intense' (in time or space) pattern of occupation would be significantly less space between concentrations of artefacts and incidents of one set of artefacts overlying another (palimpsest.)

ANALYSIS

The data retrieved from the Thornton area and Hexham Swamp margins to date has suggested that the above is the case on particular landforms. On spur crests, and gentle slopes of less than 5 percent the majority of archaeological investigations has found a continuum of artefacts.

The artefacts appear to lie in greater densities in the A2 soil horizon, probably due to downward movement by bioturbation. Excavations at Hexham Swamp found that the majority of artefacts lay within the gravel band of the A2 soil horizon (Besant 2000). This indicates the inherent difficulty in the identification of sites in the absence of sheet soil erosion or other disturbance that may expose artefacts on the surface.

The consistent distribution of stone artefacts found around the margins of Hexham Swamp and on the creek flats of tributory creeks is hidden within the soil and the absolute numbers of artefacts can usually only be determined by excavation (Besant 1999, 2000, Baker 1997, Mills 1998, Kuskie 1994). Artefact numbers at the nearby Woods Gully on the F3 have been as high as 2,000 per square metre at a knapping site (Kuskie 2000) and at the Landcom development site of Blue Gum Hills distinct peaks of artefacts of up to 102 per sq metre were found along the centre of a small spur

terminating at Hexham Swamp. The tests found an almost continual distribution of artefacts to 200 metres from the swamp margins, where testing terminated (Besant 1999).

The work done to date have shown this model as quite appropriate for the resource rich areas of the Hunter. By extrapolation, and the evidence of sites already recorded in the study area and evidence from areas around the study area, it is considered that it is probable that Aboriginal artefacts will occur as a virtual continuum across the study area. Cluster of artefacts should be found that will indicate focus points of activity, such as the knapping of particular stone, or high frequency use as a preferred camp. Hearths can also become places of artefact concentrations when living areas are swept and artefacts are tossed / or swept into the hearth for disposal.

SIGNIFICANCE ASSESSMENT

The basic processes of assessing significance for items of heritage are outlined by *The Australian ICOMOS Charter for the Conservation of Places of Cultural Significance: The Burra Charter* and its associated *Guidelines*. Sites may be significant according to several criteria, including scientific or archaeological significance, significance to Aboriginal people, aesthetic value, the degree to which a site is representative of archaeological and/or cultural type, and value as an educational resource. The nature of significance relates to historic, aesthetic, social, scientific, cultural or educational. Sites are also assessed on the degree to which they rare representative or characteristic, or whether they exhibit historic or cultural connections.

SCIENTIFIC SIGNIFICANCE

In order to determine scientific significance it is necessary to first place sites within a local and regional context. This process enables the assessment of any individual site in terms of merit against other sites of similar nature within similar contexts.

PUBLIC SIGNIFICANCE

The sites are assessed in terms of their educational value, to enhance community knowledge and appreciation of cultural heritage.

CULTURAL SIGNIFICANCE

Generally, all sites are of significance to the Aboriginal people. It has been recognised however that with the widespread nature of site distribution, sites will eventually be impacted upon by development. It is however necessary to conserve where possible sites which are of high significance to the community.

It is not possible to carry out a full significance assessment on the basis of a desktop study. It is possible to say that the study area has a high community significance for the Aboriginal Community due to the expectation that large numbers of artefacts would be expected. Further fieldwork to assess the degree of disturbance to the area and to assess the exposed archaeological sites in the area would be required as might some form limited excavation to concur with the model of occupation. A synthesis of this information may for the basis of a preliminary significance assessment. In light of the model however it can be claimed that the study area is an archaeological sensitive area.

RELEVANT LEGISLATION

The legislation relevant to the assessment of cultural heritage is outlined below.

The National Parks and Wildlife Act 1974

The NPW Act (section 90) provides statutory protection for all material evidence of Aboriginal occupation of NSW. Aboriginal places which are areas of cultural significance to the Aboriginal community, are also protected by the 1974 Act (section 84) that states:

the Minister may declare lands to be 'protected archaeological areas' to preserve Aboriginal places and relics; and

it is an offence to disturb or destroy an Aboriginal place or relic without first obtaining written consent from the Director of National Parks and Wildlife Service NSW.

The Environmental Planning and Assessment Act (1979)

The EP&A Act states that environmental impacts are to be considered in land use planning. The term 'environmental impacts' specifically relates to Aboriginal heritage in three parts.

Part III covers planning instruments such as State Environmental Planning Policies (SEPP), Regional Environmental Plans (REP) and Local Environmental Plans (LEP).

The guidelines on the preparation of planning instruments specifically state that Aboriginal heritage should be assessed as an integral part of these studies.

Part IV of the Act determines the way in which consent authorities make decisions regarding development applications. Section 79C (b) states that;

the impact of development on the natural or built environment should be considered before consent is granted; and

Part V of the EP&A Act points out that State government agencies which act as determining authorities must also conduct reviews of their own or other agencies activities in terms of impact on the environment. Where these impacts are deemed to be minimal a Review of Environmental Factors is required, although where impacts are greater an EIS would be generated. This part of the Act requires that;

'any impacts on a locality having aesthetic, anthropological, architectural, cultural, historic, scientific, recreational, scenic or

*social significance or other special value for present of future generations' (*DUAP 1995) be accounted for.

RECOMMENDATIONS

Maitland City Council should be aware that, on the basis of the desktop study, the study area be considered a sensitive archaeological area. On the basis of the site register search, and previous work at Thornton, and in similar environments around Hexham Swamp it is considered that the study be viewed as having the potential to contain a continuum of Aboriginal artefactual material.

It is recommended that if Council wishes to proceed in investigations for urban expansion, the results of the desktop study should be tested by field survey. The survey will assist to determine the extent and possible effects on the archaeological resource of recent landuse. It is anticipated that the survey will result in the identification of further sites.

In general terms the following parameters provide some very general rules:

1. Aboriginal sites are likely to increase in frequency on slopes of 5 degrees or less.

2. Sites tend to become denser and more frequent on the margins of wetlands.

3. Areas of focus in the landscape can include natural outcrops of stone suitable for knapping, or other landscape features such as knolls adjacent to wetlands.

4. Sites are less likely to occur on slopes greater than 10 degrees or in areas that would have been wetland prior to drainage works.

It may also be useful if Maitland City Council could approach Landcom for the results of extensive Aboriginal heritage works undertaken on the Blue Gum Estate site on the southern margins of Hexham Swamp. Although the work was undertaken in 2000 the report has yet to be submitted to NPWS and is not generally available. The soil landscape, topography and resource context of that site is very similar to the current study area and the results should be included in any model of occupation in lower Hunter area that could identify potential conservation zones.

Management options can be drawn from a variety of mitigation measures. These include combinations of preservation (preferably in areas with multiple values) of open space or reserves. Outside of the reserves a proponent can apply for a Heritage Impact Permits under s90 of the NPW Act 1974.

The use of conservation areas to preserve multiple values including archaeology will ideally incorporate a variety of landscape units including swamp margins, areas of slope less than 5 degrees and examples of higher ground. For the purposes of archaeology the conservation areas should have been subject to minimal ground disturbance.

For further information regarding management options consultation with NPWS regional archaeologists and with the relevant Aboriginal community groups in the first instance may assist the process. It is anticipated that in order for urban expansion to be considered a conservation zone should be identified, and serve as a mitigation measure. The zone should retain elements of flora, fauna, archaeology and landscape features. It may also be necessary for some complimentary salvage work to be undertaken to add to the growing body of evidence that assists elucidate past Aboriginal landuse and occupation.

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