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54 PULLEN STREET RESIDENTIAL SUBDIVISION, WOOLGOOLGA NSW

ABORIGINAL CULTURAL HERITAGE ASSESSMENT REPORT

August 2024

PEAC Property Group



DOCUMENT CONTROL	
Report Reference	Hill, T. 2024. <i>54 Pullen Street Woolgoolga: Aboriginal Cultural Heritage Assessment Report</i> . Unpublished report for PEAC Property Group Pty Ltd
Number	TH182
Author	Tim Hill
Client	PEAC Property Group Pty Ltd
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Status	Final
Date	16 August 2024
Version	1B

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ABBREVIATIONS

ACHAR	Aboriginal Cultural Heritage Assessment Report
AHIMS	Aboriginal Heritage Information Management System
AHIP	Aboriginal Heritage Impact Permit
DA	Development Application
DCP	Development Control Plans
DECCW	Department of Environment, Climate Change and Water (now Heritage NSW)
EP&A	Environmental Planning and Assessment
ESD	Ecological Sustainable Design
LALC	Local Aboriginal Land Council
LEP	Local Environmental Plan
NP&W	National Parks and Wildlife
PAD	Potential Archaeological Deposit
Project	The proposed 22 lot residential subdivision of Lot 12 DP1059040 at 54 Pullen Street Woolgoolga NSW
SU	Survey Unit
Study Area	54 Pullen Street, Woolgoolga NSW (Lot 12 DP1059040)
XU	Excavation Unit

1 INTRODUCTION

1.1 Background

Heritage Management & Planning Pty Ltd has been commissioned by PEAC Property Group to undertake an Aboriginal Cultural Heritage Assessment Report (ACHAR) to support an application for a residential subdivision at 54 Pullen Street, Woolgoolga NSW (the Study Area) (**Figure 1** and **Figure 2**). The development application includes 23 residential Lots ranging from 451m² to 1589m². It is expected that groundworks associated with the proposed new residential Lots would include a road access from Pullen Street, building pads and driveways, underground utilities including sewerage and water etc.

The Study Area was subject to a preliminary site inspection with Coffs Harbour & District Local Aboriginal Land Council (LACL) and Garby Elders group Aboriginal Corporation (Garby Elders) which identified the requirement for additional investigation using archaeological test pits across the termination of the ridge crest. The ACHAR has been commissioned to consider the potential impacts of the proposed residential subdivision on Aboriginal objects and cultural values, including potential impacts to the cultural landscape in accordance with the *Code of practice for the archaeological investigation of Aboriginal objects in NSW* (DECCW 2010A) (CoPAI).

1.2 Brief & Methodology

The brief for this was to undertake an ACHAR in accordance with the following:

- *Code of practice for the archaeological investigation of Aboriginal objects in NSW* (DECCW 2010A)
- *Guide to investigating, assessing and reporting on Aboriginal cultural heritage in NSW* (OEH 2011)
- *Aboriginal cultural heritage consultation requirements for proponents* (DECCW 2010B)

In accordance with the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010A) (CoPAI) and the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011) the methods employed in this assessment include:

- a description of the proposed residential subdivision as it relates to potential future ground disturbance
- a search of relevant Aboriginal heritage registers, including the Aboriginal Heritage Information Management System (AHIMS)
- a review of environmental information relevant to the assessment
- a review of relevant archaeological and cultural heritage assessments in the local area and region
- development of an archaeological predictive model to inform the assessment methodology and impact assessment
- consultation with the Aboriginal community including documentation of the consultation process and how the consultation informed the assessment
- completion of archaeological investigations/ Archaeological Technical Report and provision of technical information to inform the impact assessment including:
 - i. a summary of the assessment methodology

- ii. a description of results of the assessment including statements on the local and regional significance of archaeological sites identified within the Study Area, and
 - iii. statements on the adequacy of the assessment and the requirement for additional archaeological investigation
- an assessment of the significance and cultural values (Social, Historic, Scientific, Aesthetic) of the Study Area including a statement of significance for Aboriginal cultural values
 - an impact assessment to clearly describe the potential Harm to Aboriginal cultural heritage values, including consideration of Ecological Sustainable Development (ESD) considerations (precautionary principle and principle of intergenerational equity)
 - an outline of measures to mitigate the impacts of the Project on cultural values, and
 - management recommendations to inform the DA, including any conditions/ management recommendations to be incorporated into the project approvals, including any conditions of a Aboriginal Heritage Impact Permit (AHIP).

For the purposes of the Study, the ACHAR includes the Archaeological Technical Report as required by the CoPAI (section 6). Due to the small scale of the project and the archaeological investigation, technical information has been provided in section 4 and 6 to assist RAPs to make an informed response to the ACHAR.

1.3 Report Authorship

The study was undertaken by Tim Hill (BA. Hons. Archaeology and Palaeoanthropology, University of New England (1998)).

1.4 Description of the Proposal

The proposed project consists of the subdivision of land into 22 residential lots and a residual Lot to be transferred to City of Coffs Harbour as a riparian/ open space Lot including the southern bank of Woolgoolga Creek. The development application will include the construction of civil infrastructure and required servicing utilities and house pads. The lots will be between 451 and 1589m² per lot, with internal roads for access, as seen in the general layout below (**Figure 2**).

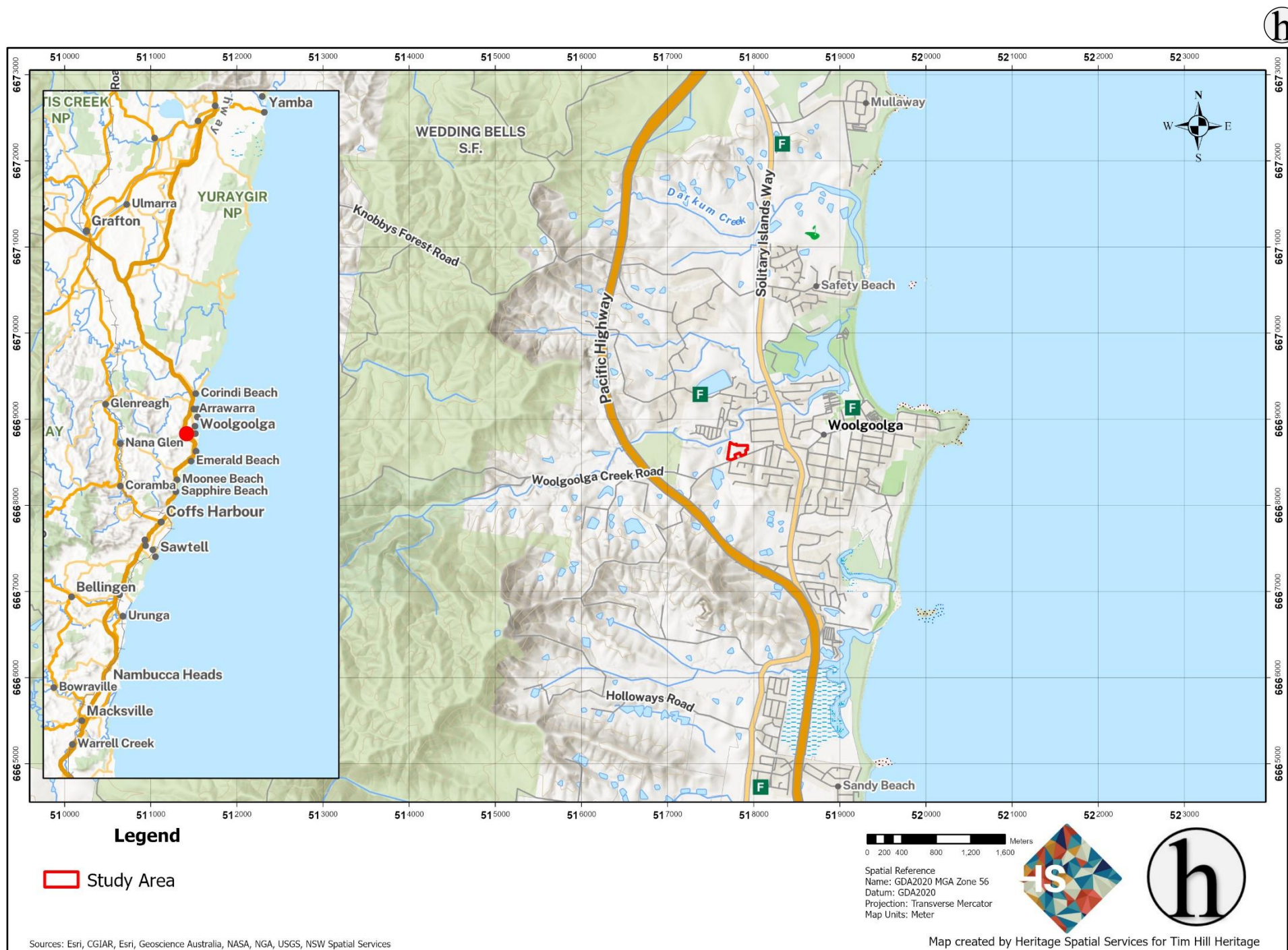


Figure 1: 54 Pullen Street Woolgoolga- Location of the Study Area



2 LEGISLATIVE AND PLANNING CONTEXT

2.1 Environmental Planning and Assessment Act (1979)

The Environmental Planning and Assessment Act (NSW) (1979) (EPA Act) provides a framework to environmental assessment and approvals in NSW. The EPA Act includes three parts relevant to ACHA assessments:

- Part 3- Planning instruments which include Local Environmental Plans (LEP), Development Control Plans (DCPs) and other strategic planning controls.
- Part 4- Development assessment and consent controls including approvals by local Councils and Regional Planning Panels.
- Part 5- Self assessment and approvals by a government agencies, or Determining Authorities, for infrastructure and environmental proposals, and for the approval of State Significant Infrastructure by the Planning Minister.

The development application will be assessed under Part 4 of EP&A Act by City of Coffs Harbour Council.

2.2 National Parks and Wildlife Act 1974 (NSW) and Regulations 2019 (NSW)

The National Parks and Wildlife Act 1974 (NSW) (NPW Act) is the primary legislation concerning the identification and protection of Aboriginal cultural heritage in New South Wales. **Section 86** of the NPW Act provides offense provisions for Aboriginal objects, Aboriginal skeletal remains and Aboriginal places in NSW (see the definition of ‘Harm’ above). Three key definitions in the NPW Act which are relevant to this assessment include:

- **Aboriginal object** means any deposit, object or material evidence (not being a handicraft made for sale) relating to the Aboriginal habitation of the area that comprises New South Wales, being habitation before or concurrent with (or both) the occupation of that area by persons of non-Aboriginal extraction, and includes Aboriginal remains.
- **Aboriginal remains** means the body or the remains of the body of a deceased Aboriginal person, but does not include—
 - (a) a body or the remains of a body buried in a cemetery in which non-Aboriginal persons are also buried, or
 - (b) a body or the remains of a body dealt with or to be dealt with in accordance with a law of the State relating to medical treatment or the examination, for forensic or other purposes, of the bodies of deceased persons.
- **Harm** an object or place includes any act or omission that—
 - (a) destroys, defaces or damages the object or place, or
 - (b) in relation to an object—moves the object from the land on which it had been situated, or
 - (c) is specified by the regulations, or

(d) causes or permits the object or place to be harmed in a manner referred to in paragraph (a), (b) or (c),

but does not include any act or omission that—

(e) desecrates the object or place, or

(f) is trivial or negligible, or

(g) is excluded from this definition by the regulations.

Section 87 of the NPW Act outlines defences against prosecution relating to Aboriginal objects, skeletal remains and Aboriginal places. These include:

- Acting in accordance with an Aboriginal Heritage Impact Permit (AHIP) issued under **Section 90** of the NPW Act
- Demonstrating that the “defendant exercised due diligence to determine whether the act or omission constituting the alleged offence would harm an Aboriginal object and reasonably determined that no Aboriginal object would be harmed”
- The activity was prescribed as a “low Impact” activity or an “omission” under the NPW Regulations (2019), and
- Was undertaken in compliance with a Code of Practice adopted or prescribed by the NPW Regulations (2019).

A AHIP issued in accordance with Section 90 of the NP&W Act will be required in the event that the ACHAR concludes that the Project will result in harm to Aboriginal objects.

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

The purpose of the *Due diligence code of practice for the protection of Aboriginal objects in NSW* (DECCW 2010B) (Due Diligence Code of Practice) is to establish a defence against prosecution in the event that Aboriginal objects may be inadvertently harmed during an activity (DECCW 2010B: 1 & 2).

The Due Diligence Code of Practice:

...sets out the reasonable and practicable steps which individuals and organisations need to take in order to:

1. identify whether or not Aboriginal objects are, or are likely to be, present in an area
2. determine whether or not their activities are likely to harm Aboriginal objects (if present)
3. determine whether an AHIP application is required (DECCW 2010B:2).

The Due Diligence Code of Practice makes the following statement on the requirement for an AHIP (DECCW 2010B:2):

If Aboriginal objects are present or likely to be present and an activity will harm those objects, then an AHIP application will be required.

However, the practical application of the Due Diligence Code of Practice is that it is a process of establishing whether additional assessment is required. In the event that the Due Diligence assessment concludes that harm to Aboriginal objects is likely, additional archaeological investigation, including Aboriginal community consultation, in accordance with *the Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW* (DECCW 2010 B) may be required.

A key limitation of the Due Diligence Code of Practice is that it does not clearly define the thresholds of “likely” or “highly likely”. To assist the assessment, the Merriam Webster dictionary definition (www.merriam-webster.com/dictionary) of “likely” is:

“Having a high probability of occurring or being true: very probable”

As such, where the Due Diligence assessment concludes that there might be a residual possibility that the activity might impact on Aboriginal objects and measures are put in place to avoid or reduce the likelihood of Harm then documentation of the assessment process would still provide a defense against prosecution for the activity under the Due Diligence approval pathway (NPW Act section 87(2)).

The Due Diligence Code of Practice makes an additional statement which removes the requirement to undertake additional investigation where there has been significance ground disturbance. The Due Diligence Code of Practice includes the following definition of ‘disturbed land’ (DECCW 2010A: 12, 18).

“Land is disturbed if it has been the subject of a human activity that has changed the land’s surface, being changes that remain clear and observable”.

2.4 Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW

The assessment has been undertaken in accordance with the *Code of practice for the archaeological investigation of Aboriginal objects in NSW* (DECCW 2010B) (CoPAI). The CoPAI provides the following statement on the application of the Code:

“This Code has been developed to support the process of investigating and assessing Aboriginal cultural heritage by specifying the minimum standards for archaeological investigation undertaken in NSW under the NPW Act. Where an Aboriginal cultural heritage assessment requires an archaeological investigation to be undertaken, this must be done in accordance with the requirements of this Code.” (DECCW 2010B:2).

The purpose of this CoPAI is to (DECCW 2010B:1):

1. establish the requirements for undertaking test excavation as a part of archaeological investigation without an AHIP. If you comply with these requirements and you harm an Aboriginal object when undertaking test excavations, your actions will be excluded from the definition of harm and as such you will not be committing an offence of harm to an Aboriginal object.
2. establish the requirements that must be followed when carrying out archaeological investigation in NSW where an application for an AHIP is likely to be made. Under the NPW

Act, the Director General can require that certain information accompany an application for an AHIP. This Code explains what that information is in relation to archaeological investigations.

Section 3.1 of the CoPAI (DECCW 2010A:24) makes the following comment on the requirement archaeological test-excavations as part of the assessment:

Archaeological test excavation will be necessary when (regardless of whether or not there are objects present on the ground surface) it can be demonstrated through Requirements 1, 2, 3, 4, and 5 that sub-surface Aboriginal objects with potential conservation value have a high probability of being present in an area, and the area cannot be substantially avoided by the proposed activity.

In this instance the term ‘high-probability’ is taken as being equivalent to ‘likely’ as used in the Due Diligence Code of Practice (DECCW 2010B). Although there is not a direct relationship between the requirement to apply for a AHIP and the requirement for archaeological test excavation, test excavation is required to demonstrate the nature and extent of the archaeological site for the purposes of informing the significance and impact assessment (see section 2.5 below).

2.5 Guide to Investigating, Assessing and Reporting on Aboriginal cultural Heritage in NSW (OEH 2011)

The assessment for the residential subdivision will be undertaken in accordance with the *Guide to investigating, assessing and reporting on aboriginal cultural heritage in NSW* (OEH 2011) which provides the following statement on the role of an ACHAR in the management of Aboriginal heritage in NSW:

Anyone proposing to carry out an activity that may harm an Aboriginal object or a declared Aboriginal place must investigate, assess and report on the harm that may be caused by the activity they propose.

The investigation and assessment of Aboriginal cultural heritage is undertaken to explore the harm of a proposed activity on Aboriginal objects and declared Aboriginal places and to clearly set out which impacts are avoidable and which are not. Harm to significant Aboriginal objects and declared Aboriginal places should always be avoided wherever possible. Where harm to Aboriginal objects and declared Aboriginal places cannot be avoided, proposals that reduce the extent and severity of harm to significant Aboriginal objects and declared Aboriginal places should be developed.

An Aboriginal cultural heritage assessment report is a written report detailing the results of the assessment and recommendations for actions to be taken before, during and after an activity to manage and protect Aboriginal objects and declared Aboriginal places identified by the investigation and assessment.

Compliance with the *Guide to investigating, assessing and reporting on aboriginal cultural heritage in NSW* (OEH 2011) is a minimum requirement for a AHIP application. The ACHAR includes technical

information which would otherwise be included in a stand-alone Archaeological Technical Report to assist RAPs to comment on the assessment.

2.6 Coffs Harbour Local Environmental Plan (2013)

The Coffs Harbour LEP (2013) provides a framework to determine activities which require development consent and outlines considerations for the determination process. This includes the following general classes of heritage:

- Items on the NSW State heritage Register
- Items of local heritage significance listed on Schedule 5 of the Coffs Harbour LEP, and
- Aboriginal objects and Places as defined by the NPW Act.

The Coffs Harbour LEP (2013) sets out provisions to control activities at “Aboriginal Places of heritage significance”, which include places which do not meet the definition of an Aboriginal object or Aboriginal places under the NPW Act but are listed under the LEP. Part 5.10.8 of the Coffs Harbour LEP (2013) requires that City of Coffs Harbour Council:

“... must, before granting consent under this clause to the carrying out of development in a place of Aboriginal heritage significance:

- a) consider the effect of the proposed development on the heritage significance of the place and any Aboriginal object known or reasonably likely to be located at the place, and
- b) notify the local Aboriginal communities (in such way as it thinks appropriate) about the application and take into consideration any response received within 28 days after the notice is sent.

The Study Area does not impact any areas identified as items of local heritage significance under the Coffs Harbour LEP (2013).

3 ENVIRONMENTAL REVIEW

3.1 Environmental Context

3.1.1 Topography and hydrology

The Due Diligence Code of Practice (Step 2b) identifies some landforms as having an increased potential to contain Aboriginal objects.

Aboriginal objects are often associated with particular landscape features as a result of Aboriginal people's use of those features in their everyday lives and for traditional cultural activities. Examples of such landscape features are rock shelters, sand dunes, waterways, waterholes and wetlands. Therefore it is essential to determine whether the site contains landscape features that indicate the likely existence of Aboriginal objects (DEECW 2010B:12).

The Study Area comprises the termination of a small toe slope which extends north from a small hill that forms the watershed of Woolgoolga Creek. Woolgoolga Creek is tidal and runs north-east into Woolgoolga Lake and has an entrance on Woolgoolga Beach. The Study Area has a moderate slope and the main ridge crest is located south of Pullen Street. Based on the assessment of landform context there is an elevated potential for the Study Area to contain Aboriginal archaeological sites (**Table 1** and **Figure 3**).

Table 1: 54 Pullen Street- Landform summary (Due Diligence Code of Practice Step 2b)

Landform	Comment in relation to the Study Area
Within 200m of waters	Yes- The Study Area is immediate south of Woolgoolga Creek.
Located within a sand dune system	No
Located on a ridge top, ridge line or headland	Yes – Lots 16-18 are located on a spur termination off a small hill which forms the watershed of Woolgoolga Creek and Willis Creek.
Located within 200m below or above a cliff face	No
Within 20m of or in a cave, rock shelter, or a cave mouth	No

3.1.2 Geology and Soil landscape summary

The Study Area is within the Coramba Beds which includes sedimentary and metamorphosed rock beds which are suitable for stone tool production (**Figure 4**). The southern/ elevated portions of the Study Area are mapped as part of the Megan soil landscape which comprises rolling hills and tall closed forests (Milford 1999:63-64) (**Table 2** and **Figure 5**). The lower alluvial deposits are mapped as part of the Coffs Creek soil landscape.

Table 2: 54 Pullen Street- Summary of soil landscape model

Soil landscape	Landscape summary	Vegetation model
Megan	Landscape- — rolling low hills to hills on Late Carboniferous metasediments of the Coffs Harbour association in the Coast Range and Gleniffer-Bonville Hills. Local relief to 90 m, occasionally to 200 m;	Closed-forest in the south. Because of climatic variation, the native vegetation varies markedly from north to south across this landscape. Tall open-forest (wet sclerophyll forest) dominated by tallowwood (<i>Eucalyptus</i>

Soil landscape	Landscape summary	Vegetation model
	slopes typically 5 - 20%, occasionally to 33%; elevation to 317 m. Soils- moderately deep to deep (>100 cm), well drained structured Red Earths (Gn3.11), Brown Earths (Gn3.21), Brown Podzolic Soils (Db4.11) and Red Podzolic Soils (Dr2.11), with moderately deep to deep (>100 cm), structured Yellow Earths (Gn3.21; Gn3.71) and Yellow Podzolic Soils (Dy4.11) in drier situations, and moderately deep to deep (>120 cm), well-drained Krasnozems (Gn3.11; Gn3.14) in the moistest sites. Geology- Late Carboniferous Coffs Harbour association metasediments of the Coramba and Brooklana Beds and the Moombil Siltstone (Cccs/Ccbf/Ccmf), comprising a thick turbidite sequence dominated by siliceous mudstone, lithofeldspathic wacke and siltstone with minor metabasalt, felsic volcanics, chert and jasper. Lithology can change abruptly over short distances. These rocks are typically moderately to highly fractured, cleaved and deformed. Metamorphism generally increases from north to south. Regolith is typically 100 cm or less of ferruginised and kaolinised decomposed rock overlying largely fresh fractured rock and typically underlying more than 100 cm of more pedologically altered materials.	<i>microcorys</i>) and Sydney blue gum (<i>E. saligna</i>) [Forest Types 46 and 47] occurs extensively on crests and slopes. The drier exposed crests are occupied by tall open-forest dominated by narrow-leaved white mahogany (<i>E. acmenoides</i>), spotted gum (<i>Corymbia maculata</i>), grey ironbark (<i>E. paniculata</i>) and small-fruited grey gum (<i>E. propinqua</i>) [Forest Types 60 and 74]. Moderately sheltered valley floors are dominated by brush box (<i>Lophostemon confertus</i>) [Forest Type 53] with a dense rainforest understorey, whilst the most sheltered gullies harbour various types of depauperate rainforest. Common dominant species include hoop pine (<i>Araucaria cunninghamii</i>) [Forest Type 21], yellow carabeen (<i>Sloanea woollsii</i>), crabapple (<i>Schizomeria ovata</i>), sassafras (<i>Doryphora sassafras</i>), corkwood (<i>Caldcluvia paniculosa</i>) and silver sycamore (<i>Cryptocarya glaucescens</i>) [Forest Type 2/3], and sassafras, fig, e.g., Moreton Bay fig (<i>Ficus macrophylla</i>), giant stinging tree (<i>Dendrocnide excelsa</i>) and grey myrtle (<i>Backhousia myrtifolia</i>) [Forest Type 6/23]. The boundary between tall open-forest and tall closed-forest on lower valley sides is often abrupt and pronounced.
Coffs Creek	Landscape-level to gently undulating floodplains, inset floodplains and terraces on Quaternary alluvium in the lower catchments of coastal streams draining the Gleniffer-Bonville Hills. Slopes 0 - 5%; relief < 20m; elevation 2 - 25m Soils— deep, moderately poorly drained Alluvial Soils (Um4.23, Uc6.11), Yellow Podzolic soils (Dy4.11; Dy4.51; 5.61) and Yellow Earths (Gn2.61) on floodplains; deep moderately poorly drained Red Podzolic Soils (Dr4.11) on drainage plains; moderately deep to deep, moderately well-drained Yellow Podzolic Soils (Dy4.11) and Yellow Earths (Gn2.21) on terraces... Geology- Terrigenous gravels, sands, silts and clays of Quaternary age (Qa). Regolith is unconsolidated alluvium, generally in excess of 3 m deep	Extensively to completely cleared, tall open-forest and open-forest. Major areas of remnant native vegetation are mostly contained within State Forests and are generally dominated by blackbutt (<i>Eucalyptus pilularis</i>) [Forest Type 37] and narrow-leaved mahogany (<i>E. acmenoides</i>) [Forest Type 60], with tallowwood (<i>E. microcorys</i>) and Sydney blue gum (<i>E. saligna</i>) [Forest Types 46 and 47] in moister areas. Poorly drained areas (landscape variant cca) harbour closed-woodland that is strongly dominated by broad-leaved paperbark (<i>Melaleuca quinquenervia</i>) [Forest Type 31].

3.1.3 Crown Plan

The following environmental information is available on the Crown Plans which provides an insight into the landscape of the Study Area prior to land clearing.

1880- 'Thickly timbered ridges' along the main ridge south of Woolgoolga Creek with 'Rich Scrub' and 'Rich Arable land' along the Woolgoolga Creek banks (**Figure 6**).

For the purpose of the study the term 'Scrub' typically refers to rainforest with a closed understory.

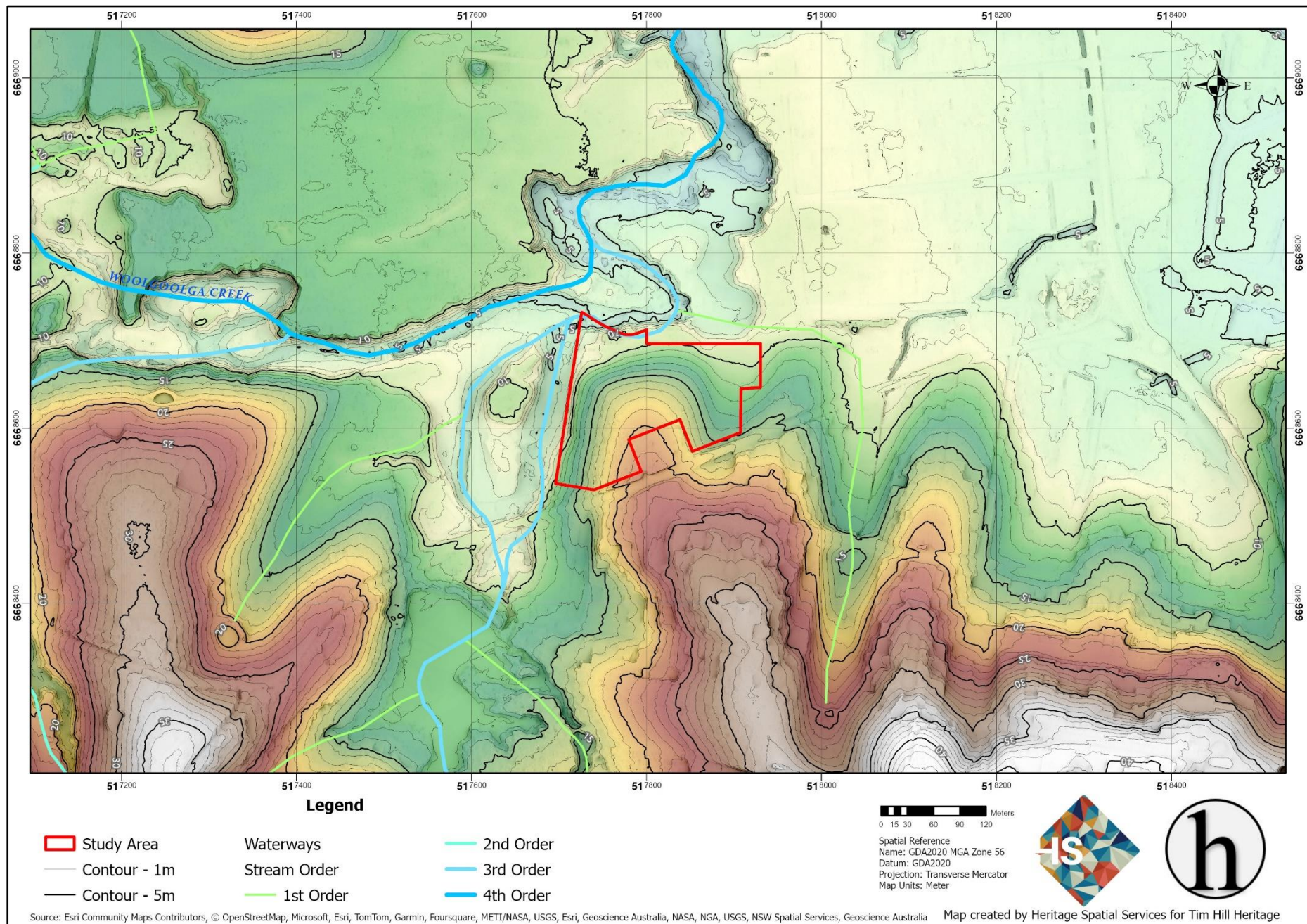


Figure 3: 54 Pullen Street Woolgoolga- Topography and hydrology

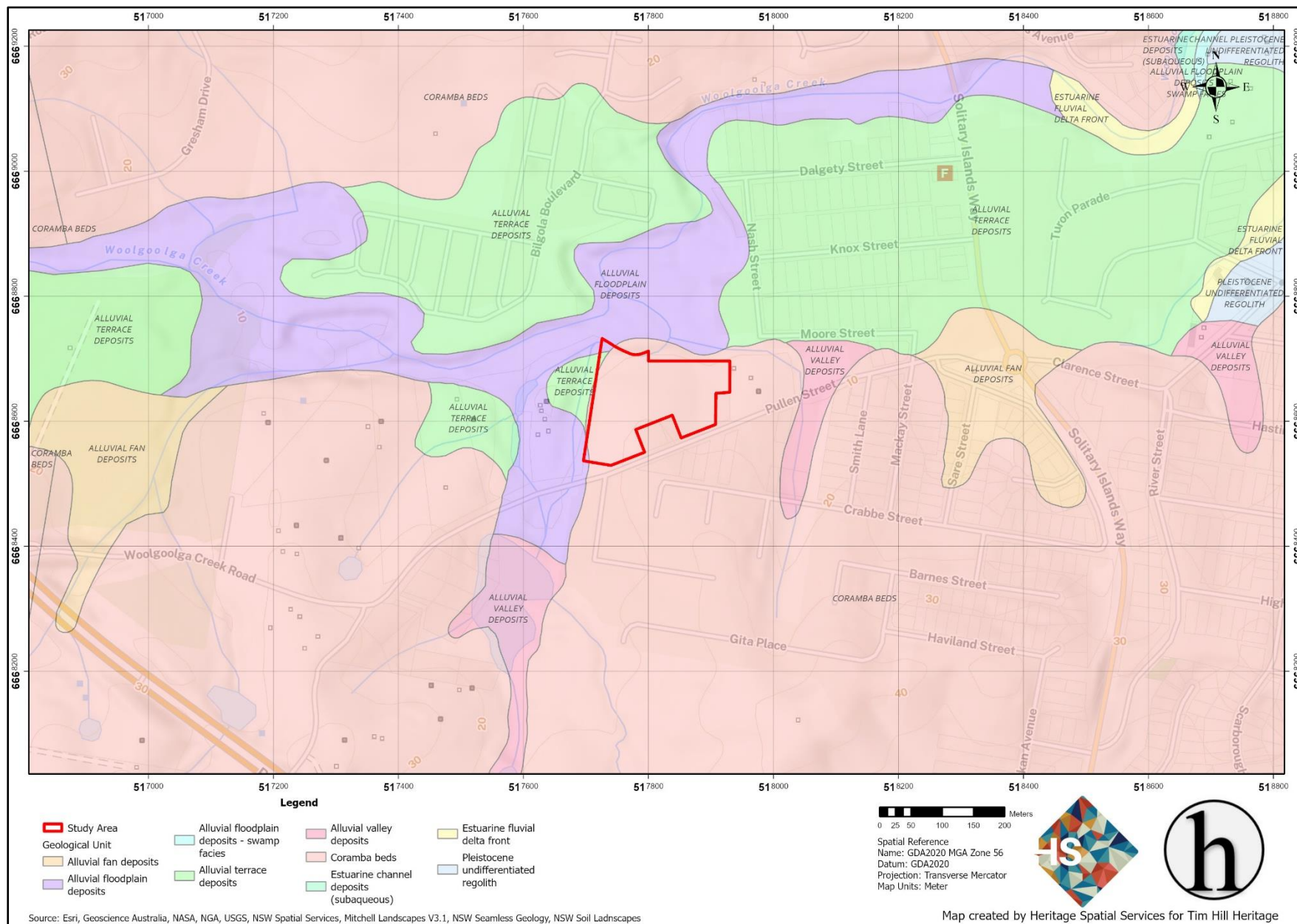


Figure 4: 54 Pullen Street Wooloolga- Geological map (source Geological Survey of NSW)

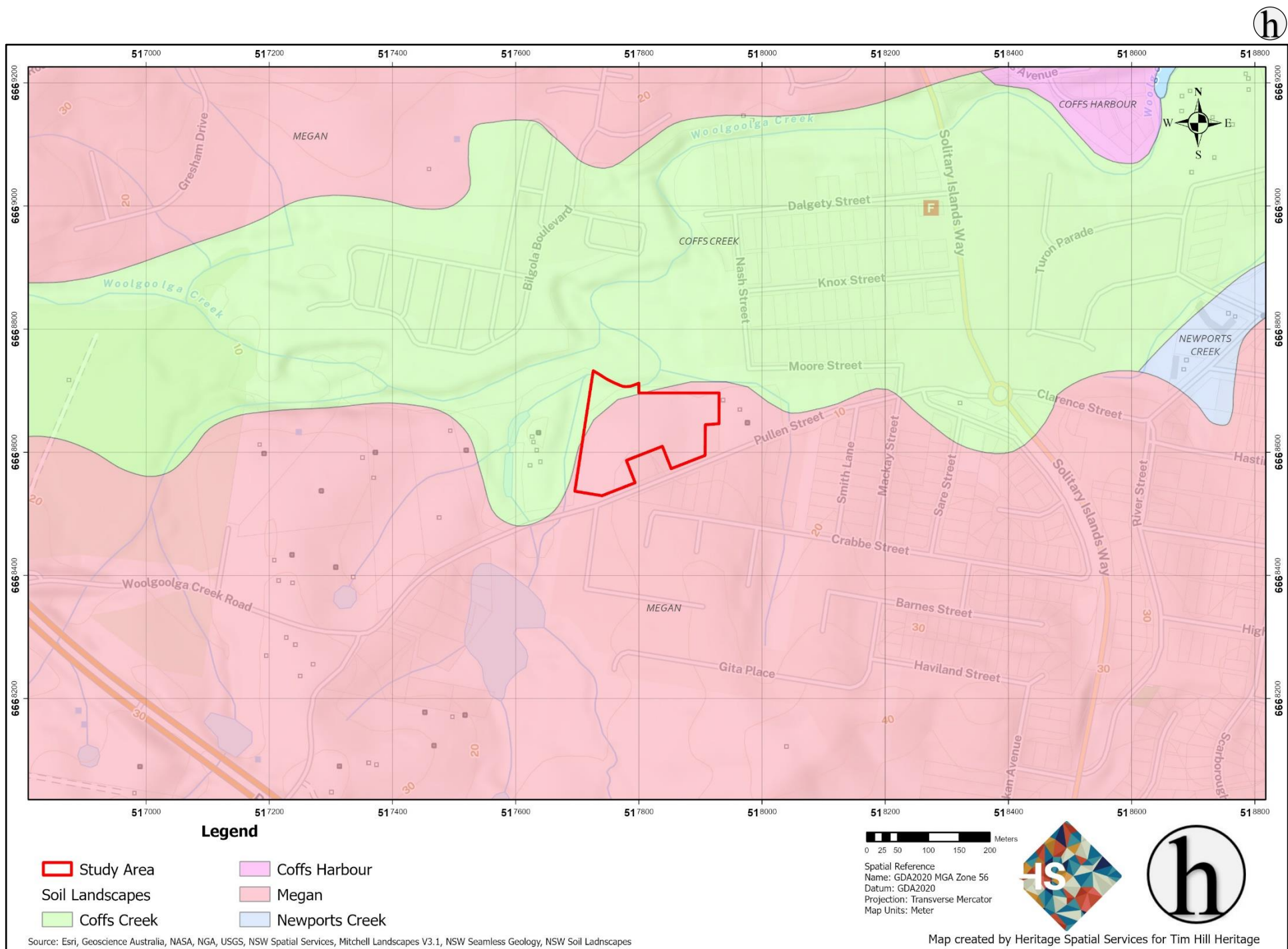


Figure 5: 54 Pullen Street Woolgoolga- Soil landscape model (source: eSpade.nsw.gov.au)

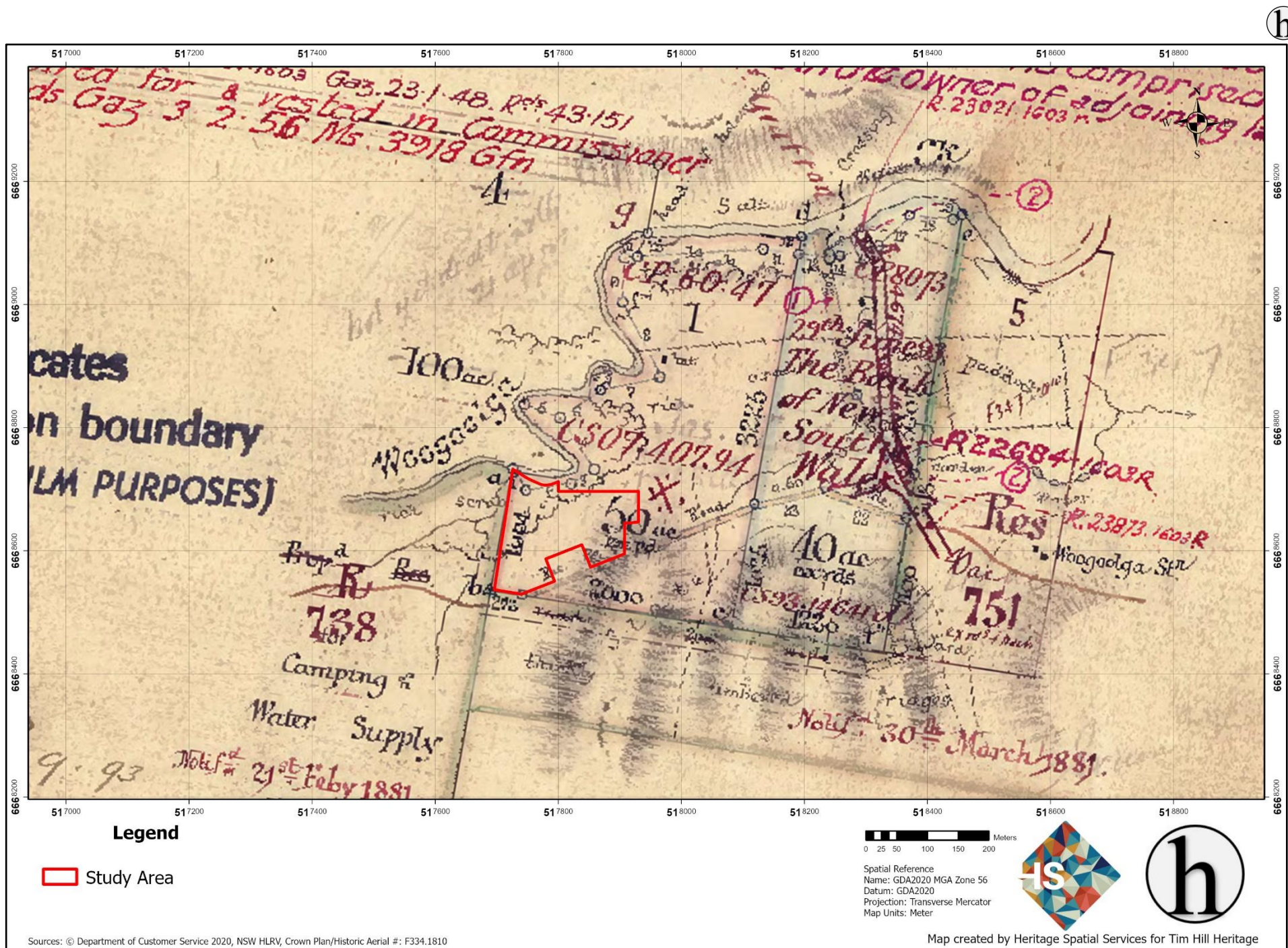


Figure 6: 54 Pullen Street - 1880 Crown Plan

3.2 Disturbance History

The Due Diligence Code of Practice includes the following definition of ‘disturbed land’ (DEECW 2010A: 12, 18).

“Land is disturbed if it has been the subject of a human activity that has changed the land’s surface, being changes that remain clear and observable”.

The application of the previous disturbance provisions must be considered on a case-by-case basis. However, the general application of the existing disturbance defenses outlined in the Due Diligence Code of Practice is that the ground disturbance must have removed the portion of the soil profile likely to contain Aboriginal objects from the local area or be of a nature whereby the ground disturbance would significantly reduce the likelihood of finding Aboriginal objects as part of a Due Diligence/ archaeological investigation. This is primarily because the assessment procedures assume that the likelihood that an activity will impact Aboriginal objects can be determined using standard archaeological investigation methods. Archaeological investigation requires a sample survey to determine/ infer the likelihood that Aboriginal objects are present and the confidence in results from archaeological investigations is significantly reduced where the land has been subject to ground disturbance.

The following statements summarises the history of ground disturbance across the Study Area based on available historic aerial photos for the Study Area:

- 1955- The eastern portion of the Study Area is cleared and the paddocks and a farmhouse is visible (56 Pullen Street)– the western portion of the Study Area is bushland/ riparian zone adjacent to Woolgoolga Creek (**Figure 7**).
- 1973- The eastern portion of the Study Area is cleared and the paddocks and a farmhouse is visible (56 Pullen Street)– the western portion of the Study Area is bushland/ riparian zone adjacent to Woolgoolga Creek (**Figure 8**)
- 1993- The bushland along the western portion of the Study Area has been cleared and a new dwelling has been constructed (52 Pullen Street) (**Figure 9**).



Figure 7: 54 Pullen Street Woolgoolga- 1955 aerial photo

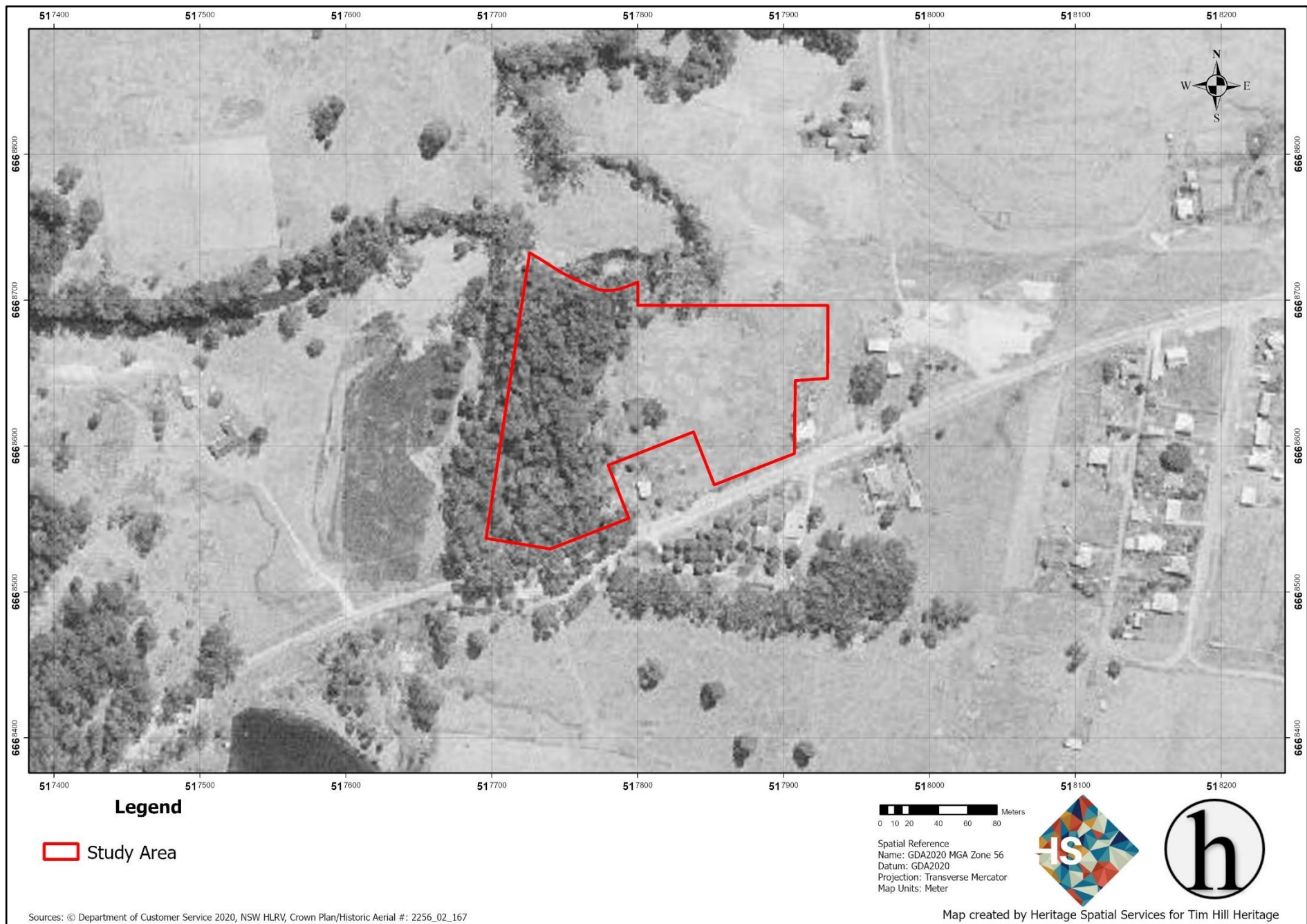


Figure 8: 54 Pullen Street Woolgoolga- 1973 aerial photo



Figure 9: 54 Pullen Street Woolgoolga- 1988 aerial image

4 ARCHAEOLOGICAL SYNTHESIS AND PREDICTIONS

4.1 Ethnohistory

The Study Area is located within the Gumbaynggirr Nation/ Language area, which is broadly known to include lands south of the Clarence River, west up to the Great Dividing Range and as far south as Nambucca Heads/ north of the Nambucca River (Thomas 2013:1; Tindale 1974). However, it is noted the exact boundaries of Aboriginal groups would have been more fluid as opposed to academic linguistic models which are quite fixed (see Kelleher Nightingale 2019). Gumbaynggirr language itself is believed to comprise as many as three, possibly four, distinct dialects according to linguistic methodologies that tend to contrive very dynamic systems (Dixon and Blake 1979).

A unique aspect of the Coffs Harbour area is the close proximity of the Great Dividing Range and the absence of a major river system. No other district in the North Coast of NSW has such a narrow coastal zone nor such a short distance between the differing environments of the lower coast and elevated / cooler forests that occur at 700 metres above sea level. Despite the absence of a major river system, there are numerous creek and estuary systems within the Coffs area that run directly into the Pacific Ocean such as Coffs Creek, Corindi River, Stingray Creek and Moonee Creek. There is a great potential for traditional pathways and routes linking the coast and the escarpment / hinterland to the west. However, such traditional pathways are not often represented archaeologically through factors of disturbance, low rates of discard of Aboriginal objects and few are noted in early ethno-histories by European settlers which tended to focus observations on the main campsites.

The earliest accounts of the daily activities, ways of life and ceremonies of Northern NSW Aboriginal groups are provided by early European settlers and surveyors from the early-mid 1800s. As such there is a wealth of written information, relative to the western slopes as an example, on the lifeways of Aboriginal groups post-European settlement (Lane 1970, Thomas 2013).

The landscape of Northern NSW, and particularly the Coffs Harbour region, provided an abundance of terrestrial and marine resources for Aboriginal groups and early observations consistently document the health, strength and physical stature of Aboriginal people in the region. Rainforest timbers for example were used for a variety of purposes, clubs, spears and shields albeit the latter were not typically ornately carved as demonstrated elsewhere by other Aboriginal groups through Australia (Thomas 2013:3). Fishing was highly important to the diet of the Gumbaynggirr people which predominately exploited the resource rich coastline (Lane 1970). Men would fish for species such as snapper, bream, mullet, whiting and flathead off rocks or the beach fronts utilizing hooks manufactured from shells of turban snails or 'gugumbal', abalone and nutrient rich coastal molluscs. Species of shellfish were harvested a core part of the diet, with remaining shells sometimes used for tools for cleaning of marine species prior to consumption and fishing hooks (English 2002).

Arboreal species such as opossums, flying foxes, koalas and native bees also complemented the diet, in addition to native bee honey (Thomas 2013:4). Local Aboriginal people developed methods to climb trees to great heights to hunt and gather these resources (Thomas 2013). Other terrestrial species in the diet included bandicoot, wallaby, kangaroo, snakes, goannas, birds. Echidna was considered a delicacy and cooked by rolling the carcass in clay before being cooked with ash so the quills would be removed with the outlying clay once complete (Thomas 2013).

4.2 Aboriginal Heritage Information Management System (AHIMS)

The Aboriginal Heritage Information Management System (AHIMS) provides a list of previously recorded Aboriginal sites in NSW. A search of the AHIMS database is a condition of compliance with the Due Diligence Code of Practice and provides information on the types of sites which will likely be located within and around the Study Area.

A search of AHIMS was undertaken on 20 February 2024 (#871449) for the area “Lat, Long From: -30.1233, 153.1697 - Lat, Long To : -30.1047, 153.2006.” which returned 17 previously recorded Aboriginal sites (Table 3, Figure 10 and Appendix A).

The most common site type in the local area is stone artefacts and shell midden which are common in sub coastal and rain forest environments of the Coffs Coast.

The previously recorded sites in close proximity to the Study Area are stone artefacts scatters associated with the Ingenia Modular Housing Estate to the north of Woolgoolga Creek. This site complex includes a low moderate density stone artefacts including primary flakes and cobble choppers which are typical of knapping sites along the coastline (pers. obsv).

Table 3: AHIMS search results (AHIMS search #871449)

Site ID	Site name	Site features	Recorders
22-1-0022	Woolgoolga;	Shell : -, Artefact : -	George England
22-1-0144	CHSS-1	Artefact : 35	Ms.Jacqueline Collins
22-1-0209	S2W-6	Artefact : 1	Ms.Jacqueline Collins
22-1-0210	S2W-5	Artefact : 1	Ms.Jacqueline Collins
22-1-0211	S2W-7	Artefact : 200	Ms.Jacqueline Collins
22-1-0365	CHCC IF 1	Artefact : 1	Ms.Jacqueline Collins
22-1-0367	CHCC AS 2	Artefact : 2	Ms.Jacqueline Collins
22-1-0439	S2W-5 Redeposit	Artefact : -	Ms.Jacqueline Collins
22-1-0443	S2W-6 Redeposit	Artefact : -	Ms.Jacqueline Collins
22-1-0444	S2W-7 Redeposit	Artefact : -	Ms.Jacqueline Collins
22-1-0432	S2W-25	Artefact : -	Ms.Jacqueline Collins
22-1-0498	McIntosh Crescent IF 3	Artefact : -	Mr Tim Hill
14-1-0007	McIntosh Crescent 1	Artefact : -	Mr.Tim Hill, Mr.Matt Finlayson
14-1-0008	McIntosh Crescent 2	Artefact : -	Mr.Tim Hill
22-1-0647	Newmans Road OS 02	Artefact : -, Potential Archaeological Deposit	Doctor.Alyce Cameron
22-1-0648	Newmans Road OS 01	Artefact : -, Potential Archaeological Deposit	Doctor.Alyce Cameron
22-1-0690	Glenwood Manufactured Housing Estate Reburial	Artefact : -	Mr.Matt Finlayson

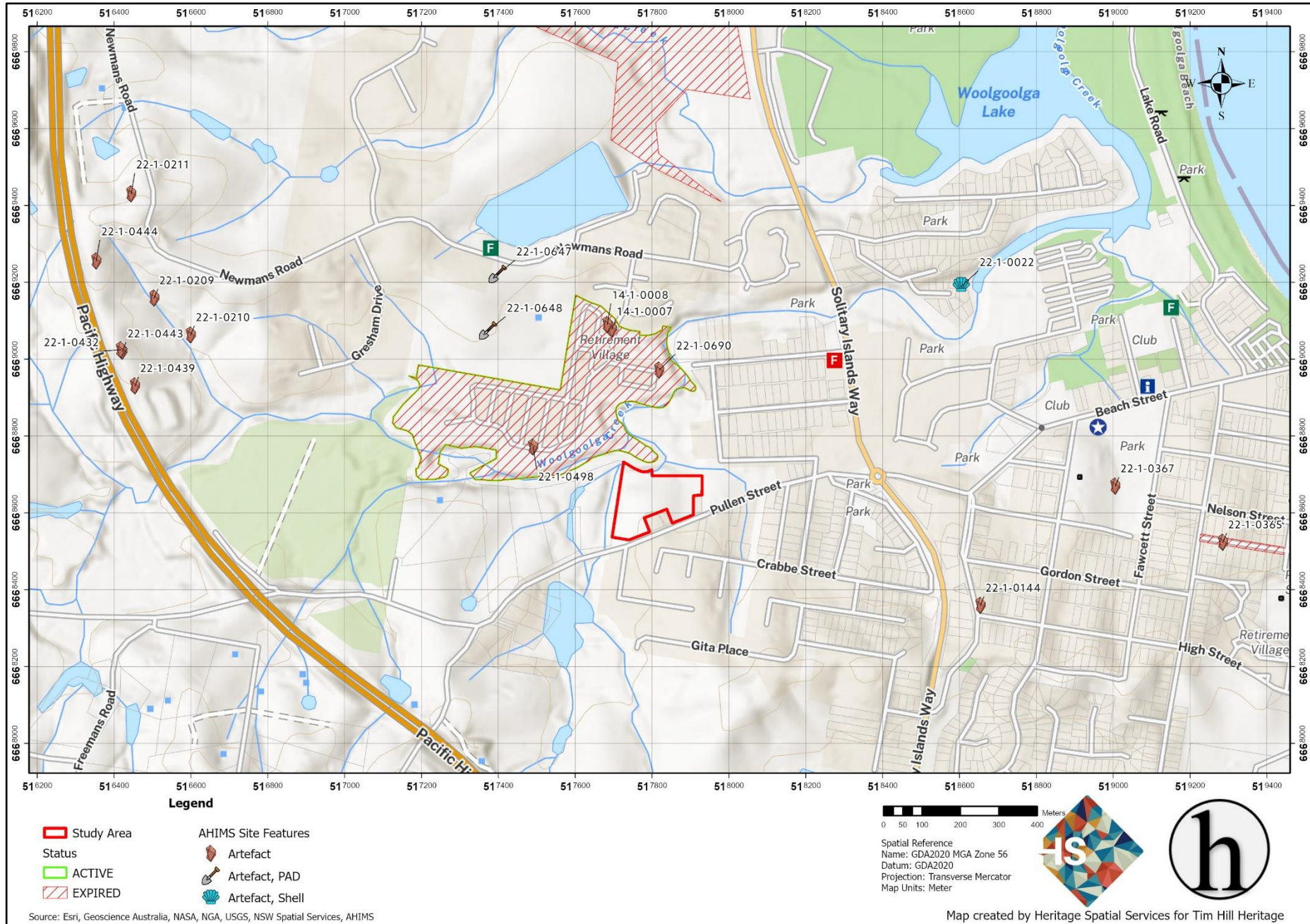


Figure 10: 54 Pullen Street Woolgoolga- AHIMS search results (#871449)

4.3 Local archaeological studies

4.3.1 *197 Red Rock Road, Corindi Beach (Davies 2008, Ainsworth 2012)*

Davies completed a large archaeological assessment of lands north of Corindi Beach to support a rezoning proposal over lands known as “The Old Farm”. The Old Farm comprises an area of ‘no mans land’ that was used by Aboriginal families in the historic period as fringe and temporary labour camps. The area comprised a relatively high number of Aboriginal scar trees, open campsites containing shell and glass artefacts and ceremonial sites. Residents on the old farm are known to have travelled down to Arrawarra Headland and up to Red Rock to go fishing, particularly in the colder months when other Aboriginal people from the tablelands visited the coast and camped on Crown land to go fishing over winter. The site includes a number of landscape features including old fig trees, roses and bush lemons which were grown around the former historic campsites and huts. During the 1960’s-1980’s the residents of the Old Farm moved to the old crown reserve at Corindi Beach and have continued to maintain the coastline, including down to Arrawarra, as a cultural landscape the coastline.

The subsequent archaeological excavation undertaken by Ainsworth Heritage (2012:8) confirmed the presence of stone artefacts across the ridge crest:

The southern extension of the property lies along a small ridge of open grassland, which would have been more heavily vegetated in the past. This ridge is part of the Coramba Beds and sits above the more recent alluvial deposits around it. Two knolls that are high points along the ridge are the only areas of open rock on the property and form good points of vantage within the local area.

The test pit investigations focused on the proposed house site within each of the 5 allotments. As the land slopes from the north: the test pit locations were all on the mid and lower areas of the slope. The land in question is used for cattle grazing and comprises open forested woodland which has begun regenerating in some areas.

Sixty percent of the pits excavated contained artefactual materials, with all the sub-surface artefacts found in the 2nd or 3rd layers (from 50mm to 250mm in depth) of the test pits within the greyish-brown, loosely compacted soil that is underneath the top layer of farm soil. The layer below this, (the rock of the ridge itself) is culturally sterile. All artefactual material, excepting one isolated surface artefact, was greywacke stone, which corresponds to the material located by the Davies report. In addition to the test pits, two isolated surface artefacts and one surface artefact scatter were located.

4.3.2 *Sapphire to Woolgoolga Pacific Highway upgrade (SKM2012)*

The Pacific Highway upgrade included the largest Aboriginal cultural heritage assessment on the NSW North Coast and the Study Area is located immediately east of the northern section of the Sapphire to Woolgoolga portion. The assessment included consultation with Garby Elders Group and included a range of cultural stories for Arrawarra/ Corindi Beach. This included ceremonial sites, burials and historical records of massacres

between Arrawarra and Red Rock. The assessment concluded that the Red Rock/ Corindi Beach / Arrawarra Headland area was of moderate cultural and social significance and the alignment was relocated to avoid these areas as much as possible.

4.3.3 Hearn's Lake Road (Collins 2007A)

Jacquie Collins (2007A) undertook a archaeological and cultural landscape assessment for a proposed residential subdivision on the northern side of Hearn's Lake near the coastline. The study concluded (Collins 2007A:16-17):

Given ethno-historical accounts (eg England undated; Holder 1984) and the distribution and size of known archaeological sites, the traditional Gumbaingirr people seem to have practiced a 'collector' type of landuse system, involving a logistically-organised pattern of movement that focused on the occupation of relatively long-term base camps to which they returned year after year. It is envisaged that specialised groups would have ranged from these base camps in search of resources, thereby generating many activity-specific sites, most of which reflect itinerant occupation/stopping events (cf Binford 1980). Despite the resource-rich environment and identification of two sites of mythological significance, archaeological sites recorded in the Hearn's Lake locality to date have all been small (cf Section 5.2) and are probably associated with short term stops made during transit along the ridgeline, and during the course of resource gathering around the margins of Hearn's Lake, Double Crossing Creek and their adjoining wetlands. Although the closest large archaeological site and potential seasonal base camp is located at Bare Bluff almost three kilometres south of Lot 21, it is possible that closer coastal camps have been destroyed by sandmining, undertaken along the dune strip between Woolgoolga and Sandy Beach (cf Appendix A). It is anticipated that the study area's forests would have once provided plant and fauna resources to its traditional occupants, but these forests have been cleared such that resources of Aboriginal value no longer occur within the proposed development footprint. However, fishing and the collection of crustaceans and shellfish are still undertaken at Hearn's Lake, and this estuary is regarded as an integral part of the contemporary cultural landscape. Whilst no longer relied upon for subsistence, these resources allow Aboriginal people on limited incomes to supplement their diet with traditional foods (cf English undated).

4.3.4 Sandy Beach North (Mary Dallas Consulting Archaeologists 2008)

Mary Dallas undertook an archaeological assessment for the Sandy Beach North residential subdivision at Hearn's Lake (Mary Dallas Consulting Archaeologists 2008). The report summarises the outcomes of the assessment:

The archaeological survey identified an artefact scatter and an area of potentially artefact bearing deposit on slightly elevated areas of ground at the southern end of Hearn's Lake on the land to the east of the Pacific Highway. The artefact scatter is dispersed over an area of 50x500m which has been subject to some degree of disturbance relating to timber clearance and stump removal. The artefact scatter is coded SBN 1 and is assessed to be the disturbed remains of a camp site.

Hearnes Lake is a small coastal lake and estuary system which is comparable to the MBNR and the location of the campsite on elevated ground around the fringe of the lake is consistent with a pattern of use of the northern beaches where relatively large stone artefact scatters are common on elevated ground.

4.3.5 Newmans Road (Everick Heritage 2022)

Everick Heritage undertook archaeological excavations for a residential subdivision project north of Newmans Road, which is located to the south of the Wiigulga Sporting Complex (Everick Heritage 2022). The excavations included a total of eight test pits across the ridge crest which was considered to have been less disturbed than the surrounding open paddocks. No artefacts were identified during the excavations and the soils were generally found to be highly disturbed:

The presence of the ironstone inclusions, blackberry roots and varying depths between the A1 and A2 Horizons indicate there has been previous disturbance across the PAD. The blackberry roots which are present subsurface, but not visible on the ground indicate there has been repeated vegetation and weed clearing across the area.

The stratigraphy of soils consisted of three main layers which affected the potential of the ridges to retain Aboriginal objects (Everick Heritage Consultants 2022:30)

- A1 Horizon: mid or dark brown or greyish brown clayey silt with grass and roots present. Ironstone was frequently present in this topsoil layer as well. The soil tended to be loosely compacted and moist. Depths of the A1 Horizon range from 50–180 mm.
- A2 Horizon: mid or dark brown or greyish brown clayey silt. Blackberry roots often present throughout, as well as ironstone inclusions. The soil was loosely compacted, though became more clayey and denser with depth. Depths of the A2 Horizon range from 50–210 mm.
- B Horizon: denser mid brown mottled orange or yellow silty clay. Clay is moist and slightly sticky. Depths of the B Horizon range between 180–250 mm.

4.3.6 Woolgoolga Modular Housing Estate (Everick Heritage Consultants 2016)

Everick Heritage Consultants undertook an ACHA of the Woolgoolga Modular Housing Estate ('MHE') located on McIntosh Crescent, to the south of Newmans Road, Woolgoolga (Everick Heritage Consultants 2016). This survey resulted in the identification of two (2) artefacts on a small tributary to Woolgoolga Creek (#14-1-0007 [McIntosh Cres IF 1], #14-1-0008 [McIntosh Cres IF 2]). The test excavation resulted in a redeposited hammer stone being recorded in a pile of introduced fill (#22-1-0498 [McIntosh Cres IF 3]). The assessment concluded that the area was not utilised as a main campsite or stone tool production area. The assessment proposed that the main campsites, and therefore areas of high archaeological potential, are located along the Woolgoolga Estuary closer to the coast and on the surrounding ridge crests to the north of the assessment area. Consultation with Coffs Harbour and District Local Aboriginal Land Council indicated that the study area may have been a 'pathway' between Woolgoolga Creek Estuary and the Coast Range, including 'Marys Waterhole' or have functioned as a peripheral area to the Woolgoolga fighting ground located to the east (near the fire station).

4.4 Regional archaeological studies

4.4.1 *McBryde (1974) and Coleman (1982)*

McBryde (1974) proposes that groups ranged between the seacoast and foothills of the coastal ranges on a seasonal basis (i.e. McBryde 1974) utilising the immediate coast and main rivers as the focus of occupation. Early sources support this view to some extent as there are records describing the movement of inland groups of the Clarence River to the coast during winter. Central to the model was the analysis of archaeological sites on the Clarence River and Wombah and Seelands. The Seelands rock shelter, located above the estuary, contained an occupation phase from circa 4500 BC - 1600 AD (McBryde 1974). The analysis of plant remains suggested a vegetation mosaic of open dry sclerophyll on elevated ground with corridors of rainforest along water courses (McBryde 1974:327). Analysis of faunal remains for the upper levels of the site indicated wallabies, possums and bandicoots provided the greater part of the meat diet (Wakefield in McBryde 1974: 360). Other animal remains included echidna, native cat, kangaroo, fruit bat, mussels, tortoise and catfish. McBryde noted a number of clear distinctions between the riverine Seelands site and the coastal midden at Wombah on the Clarence estuary. The Seelands artefact assemblage is more diverse, greater in quantity with strong evidence for the manufacture and maintenance of stone tools which is the opposite of the middens at Wombah which typically demonstrated a narrow diet with very small reliance of stone tool technology. The biological material at Seelands reflects a broadbased economy exploitive of a number of microenvironments, in contrast to the narrow economic base at on the estuary which focused on the expansive coastal and estuarine resource base. The archaeological evidence suggested contact between the riverine site and the estuary at both sites and evidence for winter occupation in the presence of emu eggshell at Seelands, while a dependence on oysters at Wombah would suggest occupation in late spring or summer (McBryde 1974b: 8-9).

Coleman (1982) proposed an alternate model based on similar archaeological information where it is suggested that movement of coastal people was not frequent, and that semi sedentary groups moved north and south within the coastal plain rather than to the upper rivers (Coleman 1982). The model is based on reports of numbers of small villages composed of dome shaped weatherproof huts between the mid- NSW coast and Moreton Bay. Flinders described a small group of huts in the vicinity of Yamba in 1799, and Perry described two villages on the banks of the lower Clarence in 1839 (McBryde 1974:9). Similar sightings were reported by Rous on the Richmond (McBryde 1974), Oxley on the Tweed (Piper 1976) and in Moreton Bay (Hall 1982). The 'solid' construction methods described for these huts seem to suggest the occupation of a base camp for periods of months rather than a constant wide-ranging pattern of low-level land use.

4.4.2 *Biosis (2017)*

Biosis (2017) completed an archaeological predictive model to inform the initial Aboriginal Cultural Heritage Assessment of the Coffs Harbour Bypass, north of the Study Area (Biosis 2017:26), which included the following general predictions:

- Artefact scatters and isolated artefacts are the most common site type found in the Coffs Harbour region. Previous work has identified this site type in any of the local landforms: coastal plain, sub-coastal ramp and escarpment. On the coastal plain these site types are most likely to be present on elevated topography overlooking water sources. Within the sub-coastal and escarpment landforms these site types are predicted to occur on flat spurs or ridges with lower densities than those on the coast. PADs have been previously recorded in the region across a wide range of landforms.
- Along the coastal plain, PADs are most likely to exist on elevated topography overlooking water sources. Further inland, they are predicted to occur on low gradient spurs or ridges, particularly close to water sources. PADs have the potential to be present in undisturbed to moderately disturbed landforms” (Biosis 2017:35).
- The potential for shell middens, stone quarries and burial sites was considered to be moderate overall, strongly dependent on the occurrence of suitable geology and soil types, with middens considered to be more likely in coastal areas or as small, scattered deposits along the major watercourses. Scarred trees, grinding grooves, rock shelters,
- Aboriginal ceremony and dreaming sites and post-contact sites were considered unlikely to occur within the study area, given the scale of previous land clearance, unsuitable geology or the lack of recorded historical or contemporary identification of specific cultural values within the actual PACHCI Stage 2 assessment.

4.4.3 Coffs Harbour – Urunga Management Areas Davies (1993)

The Coffs Harbour and Urunga Forestry Management Study (Davies 1993) provides a comprehensive regional assessment of the archaeological values and potential of the forests within the Coffs Coast hinterland. In general, the study was biased towards the hinterland in landscapes that are generally analogous to the Study Area.

The management study identified a distinct correlation between degrees of slope, sandiness of soil profiles and archaeological sites. The conclusion of this correlation was that most archaeological sites in the hinterland occur on the crests of spurs in areas that would have comprised originally dry sclerophyll or open forest prior to European disturbance. In a regional context, most archaeological sites in the study were associated with the escarpment and ranges, with relatively few sites identified on low hills and rises nearer to the east coast. While site density was noted to be greater in the escarpment area, the number of artefacts was in fact lower per site in comparison to coastal and sub-coastal sites. The finding is determined to support a model of higher levels of mobility on the escarpment, indicated by a lack of permanent camps in comparison to the resource rich coastline.

Davies proposed that the stone artefact scatters most likely represent transitory rather than base camps. The survey of forest trails within the coastal ranges covered 19km and identified three isolated artefacts and four artefact scatters. Of the artefact scatters, two comprised three artefacts, while the other two comprised 12

and 31 artefacts. This is consistent with the findings of the Coffs Harbour Bypass, as an example, and it is likely that excavation would identify additional artefacts and sites.

4.4.4 Hall and Lomax 1996

Hall and Lomax (1996) undertook a major review of archaeological assessments undertaken across NSW as part of the NSW Forestry Corporation assessments for logging operations. The Study reviewed and summarised data which included hundreds of recorded Aboriginal sites in forest environments which had generally not been subject to significant ground disturbance when compared to urban and agricultural landscapes. The study makes the following comment on the relationship between site size and diversity and the inferred function of archaeological sites across forest environments:

Archaeological evidence in the form of stone artefact scatters is present in all forest types and in many if not most areas occurs more or less continuously across the landscape. Data from recent regional scale archaeological studies that employed similar survey methodologies across a range of diverse forest types including coastal, sub-tropical and subalpine forested areas are presented in Table 1. The data show that on average approximately one to three artefact occurrences can be expected to occur for each linear kilometre of forest environment regardless of type. The term artefact occurrence refers to one or more stone artefacts at least 100 m from the next artefact.

A range of stone artefact site types has been located during forest surveys. In the broadest possible sense these sites can be characterised as ranging from small simple sites 2451, Australia. to larger and more diverse sites...with increasing site diversity roughly corresponding to the stone artefact occurrence...The larger and more diverse sites generally represent occupation sites. These are sites that would have had a generalised function and where a range of activities were carried out. Large but less diverse sites are more likely to represent locations where specific activities were undertaken such as quarry or primary reduction sites where stone raw materials were principally worked. Smaller sites of low diversity represent the debris from activities away from main occupation sites...(Hall and Lomax 1996:35-36).

The study makes additional comments on the relationship between sites and landforms, particularly proximity to water and ridges crests/ spurs:

Analysis indicated that there was a high positive correlation between site location and ridgelines in some land systems but not in others. Further analysis indicated that one of the major factors determining the strength of this correlation would appear to be fairly subtle differences in the level of constraint imposed on human movement by terrain. For example, in hilly areas of low relief there was not the same constraint to use ridge tops for pathways as there was in areas of high relief.

...there is a much higher positive correlation between site location and ridges for the ranges land system than for the lowland hills land system. Other factors which are likely to have influenced this positive correlation is the relative abundance of stone artefact raw materials in high relief means

relative to areas of low relief where artefact raw materials are less common (Hall and Lomax 1996:37-38).

4.4.5 Coffs Harbour to Woolgoolga Pacific Highway Upgrades (Collins 2004, 2007B)

Collins completed the heritage working paper for the upgrade of the Pacific Highway between Coffs Harbour and Woolgoolga (Collins 2007B). This included a review of known archaeological sites by landform. The study identified that open campsites/ artefact scatters are typically located on ridge crests and spurs (see **Figure 11**). Recorded sites in gullies and alluvial landforms were typically isolated artefacts. The options study identified that none of the sites had a high potential to contribute to scientific research as they had all been subject to high levels of ground disturbance. The findings are consistent with the Coffs Harbour Bypass options study (Collins 2004). Collins makes the additional notes which take into account ground disturbance as a variable when considering the archaeological potential of sub-coastal landforms (Collins 2004:18)

From a scientific perspective, the presence of undisturbed or minimally disturbed cultural material would be central to determining the significance level of any archaeological site which may be intercepted by the options, and the constraints that any such site/s would ultimately pose to development of an Inner Bypass. While it is recognised that the archaeological resource of both options will have been disturbed and depleted as a result of land clearance and long-term agricultural activities, due to lower-gradient topography and a seemingly lower overall order of disturbance, Inner South 1 and Inner North 1 are at this stage considered to have more potential to contain significant archaeological sites relative to Inner South 2 and Inner North 2.

The following predictive model is proposed in the 2007 study (**Table 4**)

Table 4: Summary of the Coffs Harbour to Sapphire predictive model (Collins 2007B)

LANDFORM	ARCHAEOLOGICAL POTENTIAL	EXPECTED SITE TYPES
Coastal alluvial plains	Those with highest archaeological sensitivity are well-drained swamp and estuary banks, and the level to low-gradient crests of low rises and spurs. Elements of lowest archaeological sensitivity are valley flats, plains and open depressions.	Most likely site types are isolated stone artefacts, small low-density scatters of stone artefacts, and shallow midden scatters composed solely of estuarine mollusc species. However, some large artefact scatters and stratified midden deposits containing a range of shellfish species and other cultural materials are associated with the coastal alluvial plains. Scarred trees may occur in any parts of the landscape where mature trees survive.
Coastal Ramp	Elements of highest archaeological sensitivity are the level to gently-inclined crests of low ridges, spurs and hills, particularly crests between 10 and 30 metres AHD supporting coastal sclerophyll forest. Elements of lowest archaeological sensitivity are hillslopes with gradients greater than 10 degrees and valley flats supporting swamp forests.	Site types most likely to occur are isolated stone artefacts and small low-density scatters of stone artefacts, although some small single-species shell scatters, large stratified midden deposits and large artefact scatters are associated with this landsystem. Scarred trees may occur anywhere mature trees survive

LANDFORM	ARCHAEOLOGICAL POTENTIAL	EXPECTED SITE TYPES
Escarpment Foothills	Elements of highest archaeological sensitivity are level to gently-inclined ridge and spur crests, especially dry forested crests with open or east to north-east aspects. Landscapes of lowest archaeological sensitivity are those featuring dissected terrain, comprising hillslopes (particularly slopes above 10 degrees with southerly aspects), gullies and small streams.	Most likely site types are isolated stone artefacts and small low-density scatters of stone artefacts. Some large artefact scatters and small stone extraction sites (quarries) may also occur. Scarred trees may occur anywhere mature trees survive

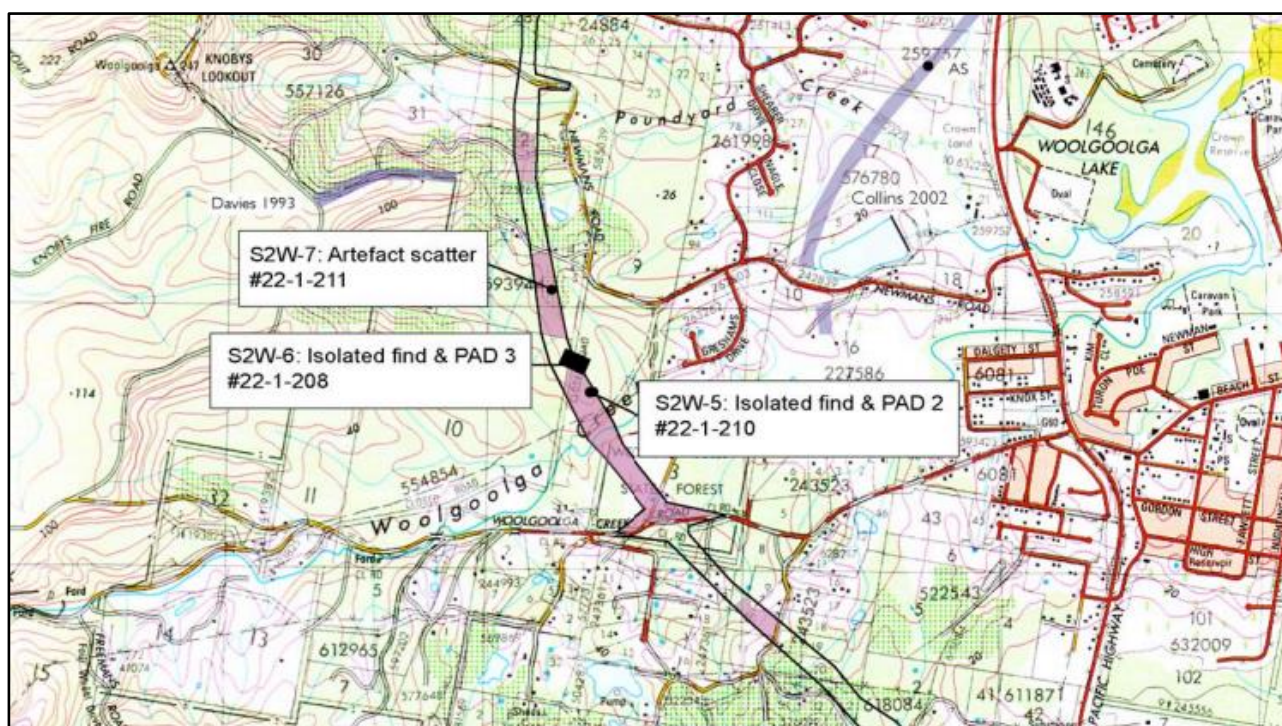


Figure 11: Results from the Collins (2007) survey near the Study Area

4.4.6 Byrne (1987)

Denis Byrne was engaged by the Forestry Commission of NSW to undertake a review of ethnohistorical and archaeological records relating to the use of rainforests in NSW (Byrne 1987). This was the first major synthesis of records relating to rainforests in northern NSW and is directly relevant to the Study as Casino is located around the western edge of the Big Scrub rainforests which dominate the volcanic plateaus around Lismore, Wollongbar and Mullumbimby.

“The lowland rainforests were situated within what might be termed the core areas of the coastal lowland tribes...the foci of settlement of these tribes were the immediate coastal strip, the estuaries and valleys of the major rivers. The key attribute of the lowland rainforests was their proximity to the main areas of settlement, and, hence, the accessibility or casually, could be easily scheduled within the mainstream economy.

Most of these rainforests could be exploited from bases in other and neighbouring environments. It is likely that the major campsites were located close to the productive margins of these rainforests.

Campsites may also have been situated in clearings within rainforests where they acted as bases for the exploitation of core areas of extensive forests and as staging camps for travel through such forests (Byrne 1987:54-55).

The report makes the following conclusions from the case-study at Nullum State Forest to the north-east of Casino (Byrne 1987:71)

The evidence of the sites in Nullum S.F. indicate that Aborigines (sic.) were operating in areas where rainforest occupies many of the gullies. The open sites are along the hardwood ridges. It is suggested that the gully rainforests were exploited from these sites but it is stressed that the rainforests were only part of a mosaic of forest types surrounding the sites all of which offered resources to the Aborigines (sic). These sites cannot, therefore, be regarded as 'rainforest sites'.

However, the Byrne report (197:98) makes an important note on the relationship between rainforests and sacred/ significant sites from which had implications for the low-lying river country and woody hills of the river valleys:

By way of a conclusion, it may be said that the rainforests of New South Wales, particularly those on the Far North Coast, have a relatively high incidence of sacred/significant sites, which consisted of natural landscape features. In the far North Coast there is a tendency for these sites to be concentrated in rainforest environments: of the 34 sites of this type in a rough rectangle between Tweed Head, Ballina, Tabulam, and Woodenbong 15 are in rainforest contexts and a further three are on land likely to have formerly have been rainforest. It might also be stressed that three of the sacred/ significant mountain sites are held by Aborigines (sic) in the areas where they are known to be most important, if not the most important, sacred sites known to them...

4.4.7 Godwin (1990)

Godwin (1990) argues that the 'models' proposed by McBryde and Coleman are not supported by the archaeological record and that local conditions dictated exploitation strategies on the north coast of NSW. In this model:

Amongst coastal groups proper there was no movement from the coast back into the sub-coastal river valleys and foothills. These people were semi-sedentary and lived close to the coast the whole year round. Movement associated with the subsistence round involved travelling only short distances away from the littoral. There were instances of long distance travel associated with ceremonial gatherings. However, such movement was generally parallel to the coast (i.e. north-south along the coast rather than east-west from coast to the hinterland).

Sub-coastal groups journeyed to the coast, but only in small numbers: there was not the large-scale migration of people posited by McBryde. The data suggests that this took place throughout the year and could have been for both ritual and secular reasons. Groups also journeyed through the "Falls" country throughout the year. There are also reports of movement in a north-south direction along the sub-coastal strip from river valley to river valley, and from the sub-coastal zone to the tablelands which

appears to have been associated with ceremonial gatherings. These ranged from clan-sized gatherings through to inter-tribal meetings (Godwin 1990:123).

4.4.8 Stubbs (2001)

Based on an extensive literature review from the Richmond and Tweed Valleys, Stubbs (2001) proposed that within the former Big Scrub and riverine context of the northern rivers the natural clearings known to Europeans as “Grasses”, that is grass or sedge lands otherwise surrounded by rainforest, were permanent Aboriginal campsites.

A remark by Flick (c.1935) that ‘a piece of clear, naturally grassed land... encircled by overhanging trees’ would be chosen as the site of great ‘marriage feasts’ is one of very few known references. Stitt (1953) also noted that the ‘grasses’ tended to be used as Aboriginal ceremonial grounds. The fact that so many of these features had Aboriginal names, as recorded by the early surveyors, also suggests that they were of importance to the Aboriginal people (see, for example, Mitchell 1978, pp. 129–35). Here it is notable that the hilltop area near Lismore which Ramsay (1865) referred to as First Grass (Table 1) has an Aboriginal name—Goonellabah—which is said to mean ‘a grassy hill surrounded by forest’ (Bray 1929, p. 251).

The locations of the grasses were well known to Aboriginal and European people in the 19th century (Stubbs 2001), though given the extent of modification of the landscape associated with European settlement their locations can only be speculated today.

4.4.9 Hughes (1998)

Hughes (1998) proposed a model of coastal archaeological sites which favoured elevated sand dune conditions, ridge lines and the lower coastal slopes as opposed to the coastal alluvial plain, as the primary focus of Aboriginal occupation. To a large extent this view is borne out by the results of previous field assessments and sub-surface investigations. Hughes made the following observations in 1998 for Tyagarah which are relevant to archaeological site model for the Study Area.

...In contrast to ridges of low hills, on extensive low-lying coastal plains, artefacts occur infrequently and usually in the form of ‘back ground scatter’ of isolated artefacts rather than clusters of artefacts that can be called sites. This is because there are no obvious landscape features that would have provided a focus for Aboriginal exploitation and /or occupation. Sites may occur along river and creek banks and around the margins of swamps, but again usually only where there is elevated ground...” (Hughes 1998: 4-1).

Hughes is also correct when he states “...a major problem with alluvial plains is that any archaeological materials which may occur (albeit sparsely) are likely to be buried beneath aeolian sands and flood alluvium...” (Hughes 1998: 4.1-4.2). Hughes was of the view that stone artefact scatters were most likely on the ridge crest in hilly terrain. Stone artefact scatters are less likely to occur on the coastal plain (unless in any areas of slightly elevated ground) and these are likely to have low densities of artefacts compared with those on the adjacent ridge crests.

4.4.10 Williams et al (2015)

Williams et al (2015) propose a continental-scale model of Holocene Australian hunter-gatherer demography and mobility using radiocarbon data and geospatial techniques. Results show a delayed settlement of much of Australia following the termination of the late Pleistocene until after 9,000 years ago. The onset of the Holocene climatic optimum (9-6ka) coincides with rapid expansion, growth and establishment of regional populations across ~75% of Australia, including much of the arid zone. The authors argue longer patch residence times were possible at the end of the optimum, resulting in a shift to more sedentary lifestyles and establishment of low-level food production in some parts of the continent. The onset of El Niño - Southern Oscillation (ENSO; 4.5-2ka) restricted low-level food production, and resulted in population fragmentation, abandonment of marginal areas, and reduction in ranging territory. Climate amelioration brought about by more pervasive La Niña conditions (post-2ka), resulted in an intensification of the mobility strategies and technological innovations that were developed in the early- to mid-Holocene. These changes resulted in population expansion and utilization of the entire continent. It is proposed that it was under these demographically packed conditions that the complex social and religious societies observed at colonial contact were formed.

4.4.11 Vale (2004)

Deborah Vale completed a thesis which re-interpreted earlier archaeological data from the lower Macleay River estuary (Vale 2004). The thesis tested two models of responses to sea level change in the mid-late Holocene period whereby the sea changed rapidly or gradually. The study concluded (see **Figure 12** of the lower Macleay River as an example):

In summary, the results of the re-analysis of the marine fauna from the Clybucca 3 and Stuarts Point 1 sites indicate a greater likelihood that there was a sea-level rise in the Macleay region at approximately 4,500 BP than that a gradual sedimentation occurred. A number of lines of evidence point to this being the case. Firstly, the sites do not appear to have been inhabited prior to the Mid-Holocene. Secondly, both sites appear to have had an episode when marine fauna became abundant. This occurred after 4,300 BP at Clybucca, and between 4,000 – 3,700 BP at Stuarts Point. Finally, the changes evidenced in the fauna recovered from the sites do not indicate a slow, gradual change in the environment, but instead suggest episodes when change happened relatively rapidly...whilst it is not possible to state categorically that the environmental change evidenced by the archaeological assemblages is the result of a two metre rise in sea-level between 5,000 BP and 4,000 BP, it is possible to say that the results ... provide strong support for that conclusion.

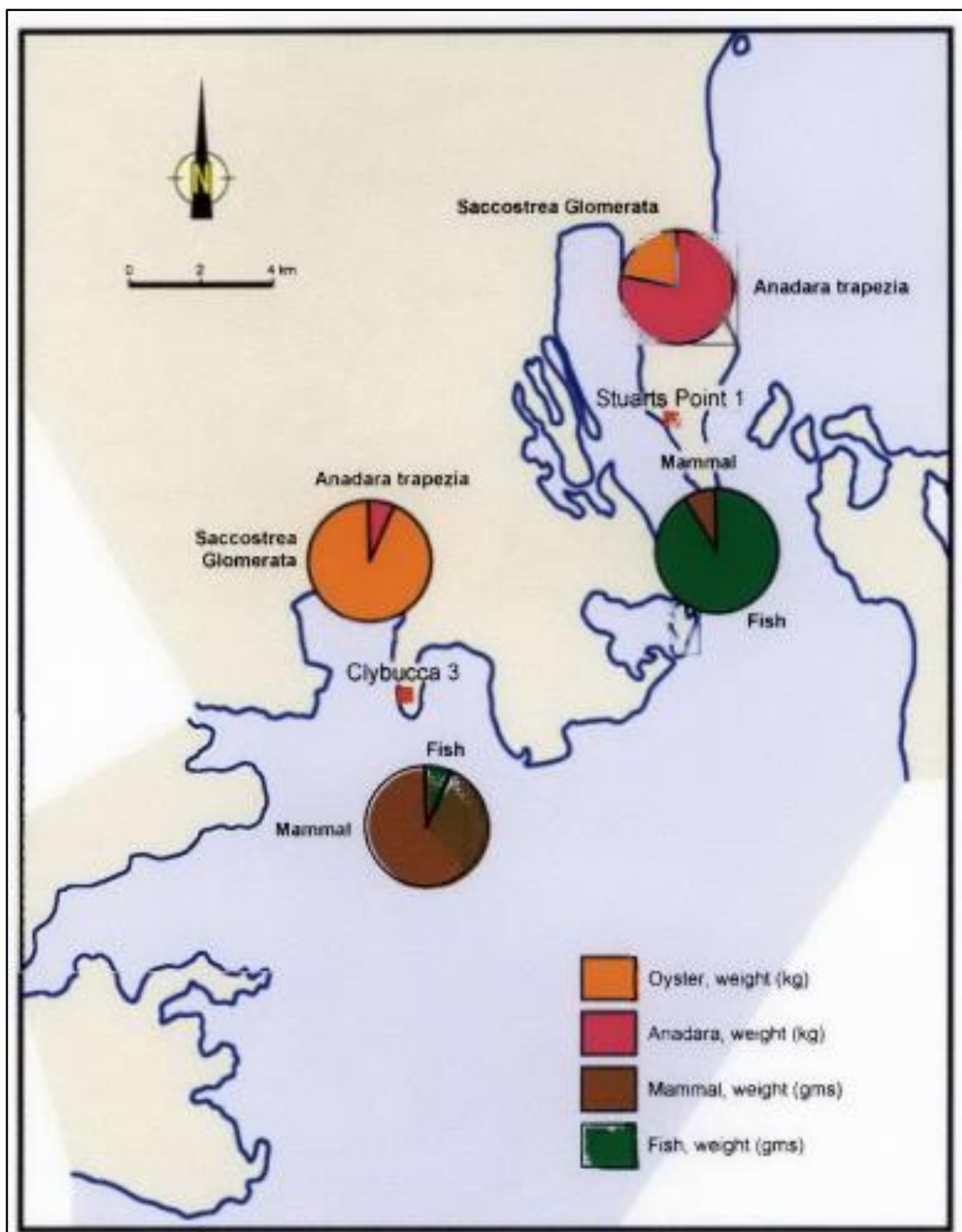


Figure 12: Model of the coastline at c4000 years (Vale 2004)

4.5 Predictive model for the Study Area

A predictive model can be used to provide a preliminary indication of the archaeological 'character' (or the type and frequency of archaeological material) that could be expected to be associated with landscape features. This, considered with an analysis of landform and geomorphology specific to a Study Area, can also

guide targeted field investigation. For the purposes of the ACHAR the predictive model for the ridge crest is summarised below:

- stone materials used for tool production most likely to be located across the Study Area include greywacke or argillite cobbles available from the beachfront and headland with smaller number of artefacts produced from fine grained sedimentary rocks brought in by people visiting from the sub-coastal and hinterland areas
- fine grained siliceous stone material is mostly heavily reduced whereas the readily available greywacke cobbles are typically found as simple flakes, unifacial axes or cores which can be used to work softer timber and processing larger animals
- while artefacts have the potential to occur on side slopes and in alluvial soil deposits these are not common and typically result from downslope movement of artefacts with increased topsoil erosion, and
- burials are not likely to occur on the elevated ridge and ridge crests as the successive phases of clearing would have disturbed the soil and increased the rate of degradation of organic material in the soil.

5 ABORIGINAL CULTURAL HERITAGE CONSULTATION

The *Aboriginal cultural heritage consultation requirement for proponents* (DECCW 2010C) (ACHCRP) provides a guide for appropriate consultation with the Aboriginal community to inform the ACHAR. The overview of the ACHCRP makes the following comment on the role of consultation in the cultural heritage assessment process (DECCW 2010C:iii):

The NPW Act provides specific protection for Aboriginal objects and Aboriginal places by providing offences for unauthorised harm. The NPW Act establishes the Director General of DECCW as the decision-maker for Aboriginal heritage impact permit (AHIP) applications. DECCW requires the effective consultation with Aboriginal people as a fundamental component of the AHIP assessment process and acknowledges that:

- Aboriginal people should have the right to maintain culture, language, knowledge and identity
- Aboriginal people should have the right to directly participate in matters that may affect their heritage
- Aboriginal people are the primary determinants of the cultural significance of their heritage.

This document focuses on the requirements for consultation with Aboriginal people as part of the heritage assessment process:

- to determine potential harm on Aboriginal cultural heritage from proposed activities
- that informs decision making for any application for an AHIP where it is determined harm cannot be avoided.

Section 60 (9) of the National Parks and Wildlife Regulation (2019) makes the following comment on the application of the ACHCRP in the assessment process:

An application for an Aboriginal heritage impact permit is not invalid merely because the applicant for the permit failed to comply with any one or more of the requirements set out in this clause. *Note. Under section 90K(1)(g) of the Act, the Chief Executive, in making a decision in relation to an Aboriginal heritage impact permit, must consider whether any consultation by the applicant with Aboriginal people regarding the Aboriginal objects or Aboriginal place that are the subject of the permit substantially complied with any requirements for consultation set out in the regulations.*

A key consideration is that any activity which has the potential to harm Aboriginal objects, whether is authorised an AHIP or a Code of Practice, must include a process of consultation with the Aboriginal community to understand the values of the place and site that cannot be assessed by standard archaeological methods, including the spiritual, cultural and historic significance in the Aboriginal cultural landscape of which the site forms a part.

Table 5: 54 Pullen Street Woolgoolga- Summary of consultation with the Aboriginal community

Date	Stakeholder	Method	Comment
6 March 2024	Uncle Ian Brown	Phone	Notification of the assessment and identification of a suitable time for the site inspection.
8 March 2024	Aunty Deb Dootson Matthew Dootson Uncle Ian Brown	Phone	Preliminary organisation of the site inspection to confirm availability
8 March 2024	Aunty Deb Dootson Darren Skinner	Email	Notification of the date and location of the site inspection.
12 March 2024	Uncle Ian Brown Mathew Dootson	Site inspection	Archaeological site inspection (pedestrian survey).
17 March 2024	Heritage NSW City of Coffs Harbour Council North Coast Local Land Services NSW Aboriginal Land Council NTSCorp	Email	Notification of the commencement of the ACHAR and request for lists of Aboriginal stakeholders in the Coffs Harbour LGA.
12 April 2024	Heritage NSW	Email	Provision of the list of Aboriginal stakeholders for the Coffs Harbour
19 April 2024	Coffs Coast News of the Area	Public Notice	Notice of the project and request for registration
20 April 2024	AT Gomilaroi Cultural Consultancy Coffs Harbour and District LALC DFTV Enterprises Garby Elders Aboriginal Corporation Gaarlambirla Guuya-girrwa Aboriginal Corporation Gumbayngirr Elders Gumbayngirr Native Title Group Gumbayngirr Wenonah Head AC Registered native Title Body Corporate Gurelgahm AC/ Yarrawarra Cultural Centre Jagun Elders and Aged Care Aboriginal Corporation Jumbunna Traffic Management Group Pty Ltd Leon Petrou Merrigarn Indigenous Corporation Mimi Mothers Aboriginal Corporation Mudjay Elders Murra Bidgee Mullangari Aboriginal Corporation A&K Cultural Heritage		Notice of the ACHA study and invitation to register (COB 6 May 2024)

Date	Stakeholder	Method	Comment
	Ngiyambandigay Wadjarr Aboriginal Corporation Richard Jarret Susan Hoskins Thomas Dahlstrom Yandaarra Aboriginal Advisory Committee Yangaay Yurrangi Geoffrey Toomey Dharramalin Girragirra Murun Aboriginal Corporation Wingarra Wilay Aboriginal Corporation Guthers Aboriginal Corporation		
20 April 2024	Ngiyambandigay Wadjarr Aboriginal Corporation	Email	Registration for the ACH Study
22 April 2024	Garby Elders Aboriginal Corporation	Email	Registration for the ACH Study
23 April 2024	Murra Bidgee Mullangari Aboriginal Corporation	Email	Registration for the ACH Study
23 April 2024	Girragirra Murun Aboriginal Corporation	Email	Registration for the ACH Study
24 April 2024	Coffs Harbour and District LALC	Email	Registration for the ACH Study
30 April 2024	Jagun Elders and Aged Care Aboriginal Corporation	Email	Registration for the ACH Study
7 May 2024	Heritage NSW Coffs Harbour & District LALC	Email	Notification of RAPs for the ACH Study
7 May 2024	Ngiyambandigay Wadjarr Aboriginal Corporation Garby Elders Aboriginal Corporation Murra Bidgee Mullangari Aboriginal Corporation Girragirra Murun Aboriginal Corporation Coffs Harbour and District LALC Jagun Elders and Aged Care Aboriginal Corporation	Email	Provision of the ACH Methodology- request for comment by 4 June 2024
25/ 26 May 2024	Jagun Elders and Aged Care Aboriginal Corporation (Tony Perkins)	Email/ Phone	Discussion of cultural values for Woolgoolga Creek and confirmation of location of the Study.
6 June 2024	Ngiyambandigay Wadjarr Aboriginal Corporation Garby Elders Aboriginal Corporation Murra Bidgee Mullangari Aboriginal Corporation Girragirra Murun Aboriginal Corporation Coffs Harbour and District LALC Jagun Elders and Aged Care Aboriginal Corporation	Email	Notification of the commencement of test excavations (20/21 June 2024).

Date	Stakeholder	Method	Comment
	Heritage NSW		
20/21 June 2024	Coffs Harbour and District LALC (Uncle Ian Brown and Danial Flander) Garby Elders Aboriginal Corporation (Matthew Dootson) Jagun Elders and Aged Care Aboriginal Corporation (Andrew Taylor)	Test excavations	Completion of the test excavations in accordance with the test methodology
17 July 2024	Ngiyambandigay Wadjarr Aboriginal Corporation Garby Elders Aboriginal Corporation Murra Bidgee Mullangari Aboriginal Corporation Girragirra Murun Aboriginal Corporation Coffs Harbour and District LALC Jagun Elders and Aged Care Aboriginal Corporation	Email	Provision of the Draft ACHAR for comment. The date for close of comments was 14 August 2024
14 August 2024	Jagun Elders and Aged Care Aboriginal Corporation (Uncle Tony Perkins)	Phone/ Email	Clarification of control for temporary storage of artefacts – recommendation 8.3 has been updated.

6 ARCHAEOLOGICAL TECHNICAL REPORT/ FIELD SURVEY

6.1 Pedestrian survey

An archaeological survey is primarily undertaken to identify Aboriginal archaeological sites on the ground surface. However, in northern NSW where ground typically makes pedestrian surveys ineffective a survey is used to understand the constraints to site detection and the board potential of landforms to comprise sub-surface archaeological sites to understand the requirement for archaeological excavation.

A site inspection was undertaken with Uncle Ian Brown and Mathew Dootson on 11 March 2024. The inspection includes a meandering transect across the Study Area.

For the, the history of ground disturbance which is relevant to the archaeological investigation includes (Figure 13-Figure 18):

- Removal of native forest and trees
- Improvement of pasture for grazing- there is no evidence of intensive/residential horticulture within the Study Area however there is a small cattle yard, and
- Localised erosion and some downslope movement of sandy soils from wind and rain.

Table 6 presents information on the extent to which survey data provides sufficient evidence for an evaluation of the extent and nature of disturbance across the area and the potential of identifying archaeological materials should they occur. Based on the calculation of survey coverage it is reasonable to proceed on the basis that the archaeological survey was constrained by grass cover.

Table 6: Calculation of survey coverage/ effectiveness by Survey Unit

Survey Unit (SU)	Landform	Survey Area (m ²)	Visibility	Exposure	Effective coverage area (m ²)	Effective coverage %	No. of sites
1	Ridge	3000	40	20	240	8	0
2	Slope	2000	20	20	8	4	0
3	Creek flat	500	60	20	60	12	0

Prior to the test excavation (20 June 2024) a second pedestrian survey was undertaken as the ground conditions had changed- being recent agricultural tilling and seeding. The results of the second pedestrian survey were not constrained by vegetation and had approximately >90% survey effectiveness (**Table 7**).

Table 7: Calculation of survey coverage/ effectiveness by Survey Unit- June 2024

Survey Unit (SU)	Landform	Survey Area (m ²)	Visibility	Exposure	Effective coverage area (m ²)	Effective coverage %	No. of sites
1	Ridge	3000	95	95	2707	90	1
2	Slope	5000	95	95	4512	90	1
3	Creek flat	2000	90	90	1620	81	0



Figure 13: Ridge crest- Looking north-west to Woolgoolga Creek from the spur termination



Figure 14: Side slope- ground exposure following recent slashing



Figure 15: Ridge crest- ground conditions following slashing



Figure 16: Creek flat- ground conditions following slashing



Figure 17: Side slope- Survey conditions on the north-west facing slope



Figure 18: Side slope- Looking south to Pullen Street from the spur crest



Figure 19: Side slope- Example of ground conditions in June 2024

6.2 Pedestrian survey results

For the purposes of the ACHAR the following describe the outcomes of the preliminary archaeological investigations of the Study Area to inform the cultural heritage impact assessment:

- the Study Area is consistent with the geological and soil landscape models, comprising a low ridge spur, a moderately sloped hillside and a relatively narrow alluvial bank beside Woolgoolga Creek- the terminating spur is a landform which is identified by studies of similar landscapes as having a increased potential to contain Aboriginal archaeological sites/ stone artefact scatters
- grass cover was a constraint for the pedestrian inspection- based on the survey it was possible to inspect <10% of the Study Area
- aside from removal of the original forests there is no clear and observable changes to the soil profile which would remove the potential for Aboriginal archaeological sites- while the soil profile will likely have been disturbed studies in equivalent landforms have s=demonstrated that stone artefacts scatters are usually retained within the upper soil profile/ 'A' soil horizon, and
- the representatives of the Aboriginal community involved in the preliminary site inspection have noted that Woolgoolga Creek is a cultural landscape feature that contain ceremonial and historic sites of significance to the Aboriginal community.

Following the June 2024 site inspection the following describes the results of the survey:

- the Study Area comprises a low-density stone artefact scatter/ open campsite (n=21) (Pullen Street Woolgoolga Open Campsite 1 Open campsite (#22-1-0696) / stone artefact scatter comprising

cobble flakes, adze and choppers on the ridge crest south of Woolgoolga Creek.) comprising flake pieces (38%), halved cobble adzes (38%), Unifacial chopper (14%) and hammerstones (9%)

- all of the artefacts identified in the surface survey were formed from locally available greywacke- this is the most common stone material for tool production on the Coffs Coast/ Northern Beaches
- as the artefacts were produced from cobbles there is a trend in the amount of cortex retained by artefact type with hammerstones having the most cortex (100%), halved cobble adzes having an average of 60% cortex and unifacial choppers having an average of 40% cortex (see **Table 10**), and
- the surface finds were located on the ridge crest (n=14/66%) and upper slope (n=7/33%) while no artefact are located on the creek bank or alluvial flats- the number of artefacts on the upper slope could reasonably be attributed to movement by tilling.

Based on the survey results the Pullen Street Woolgoolga Camp Site 1 is typical of Aboriginal archaeological sites on the sub-coastal forests and hills. The site is consistent with the findings on the Pacific Highway upgrade and residential subdivisions to the north and south of the Study Area.

Table 8: Artefact data- surface survey 20 June 2024

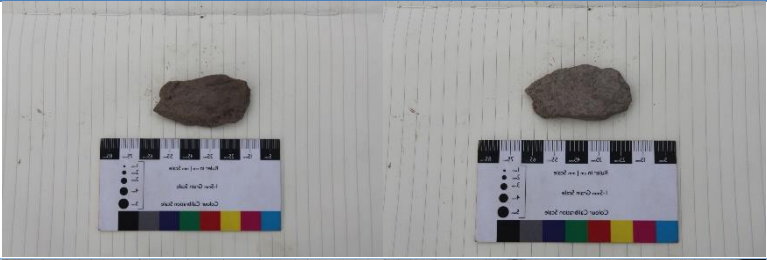
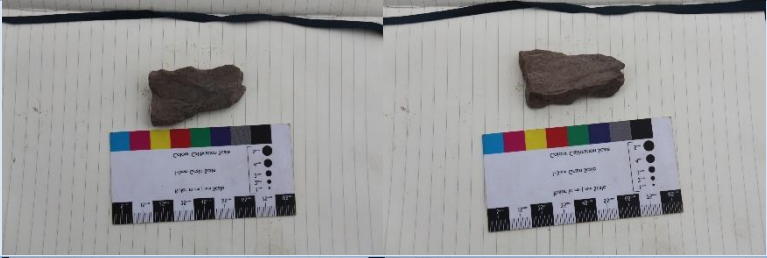
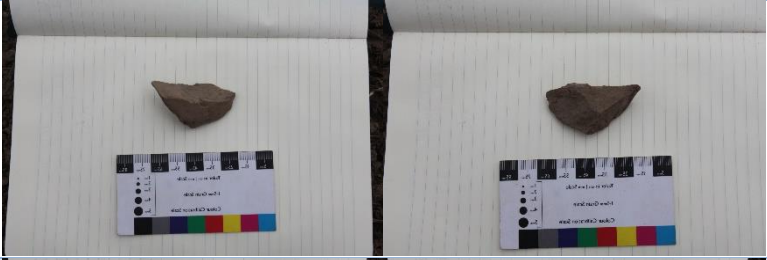
ID	E	N	Landform	Type	Stone material	L	T	W	Cortex %	Notes
1	517808	6668607	Ridge	Unifacial chopper	Greywacke	60	48	20	30	Cobble is split- some minor damage on rounded edge
2	517702	6668602	Ridge	Halved cobble- adze	Greywacke	81	5	23	40	Cobble is split and halved
3	517788	6668617	Ridge	Halved cobble-adze	Greywacke	68	41	21	80	Distal and proximal end are flaked
4	517788	6668617	Ridge	Hammerstone	Greywacke	118	66	45	100	Small amount of pitting on one end
5	517781	6668621	Ridge	Halved cobble- adze	Greywacke	98	62	54	80	Halved cobble- some pitting/ damage on the cobble edge
6	517786	6668623	Ridge	Halved cobble- adze	Greywacke	91	57	28	80	Halved cobble- the distal edge of the cobble has also been split and has a small negative flake scar
7	517821	6668625	Ridge	Flake piece	Greywacke	42	39	22	0	
8	517823	6668629	Ridge	Flake piece	Greywacke	45	26	8	0	
9	517812	6668655	Ridge	Flake piece	Greywacke	46	25	12	0	
10	517812	6668655	Ridge	Flake piece	Greywacke	49	24	13	30	
11	517804	6668674	Slope	Unifacial chopper	Greywacke	120	87	45	50	Split cobble- damage to c.25% of edge. Possible reduction for hafting.
12	517790	6668678	Slope	Halved cobble-adze	Greywacke	95	76	49	10	
13	517195	6668610	Ridge	Halved cobble-adze	Greywacke	80	49	46	40	Halved cobble- distal end has also been removed
14	517791	6668618	Ridge	Unifacial chopper	Greywacke	77	52	28	40	Split cobble- halved to form adze. Some damage to distal edge
15	517770	6668611	Ridge	Hammerstone	Greywacke	112	48	31	100	Some pitting on one end.
16	517760	6668605	Slope	Flake piece	Greywacke	43	40	13	0	
17	517760	6668605	Slope	Halved cobble- adze	Greywacke	105	78	53	70	
18	517771	6668606	Ridge	Flake piece	Greywacke	35	30	9	0	
19	517784	6668654	Slope	Flake piece	Greywacke	83	49	30	0	
20	517799	6668661	Slope	Halved cobble- adze	Greywacke	82	59	13	50	Halved cobble- some damage around distal cobble edge.
21	517823	6668656	Slope	Flake piece	Greywacke	33	28	5	0	



Figure 20: 54 Pullen St- Location of surface finds

Table 9: Artefact photos

ID	E	N	Type	Photos
1	517808	6668607	Unifacial chopper	
2	517702	6668602	Halved cobble-adze	
3	517788	6668617	Halved cobble-adze	
4	517788	6668617	Hammerstone	
5	517781	6668621	Halved cobble-adze	
6	517786	6668623	Halved cobble-adze	
7	517821	6668625	Flake piece	

ID	E	N	Type	Photos
8	517823	6668629	Flake piece	
9	517812	6668655	Flake piece	
10	517812	6668655	Flake piece	
11	517804	6668674	Unifacial chopper	
12	517790	6668678	Halved cobble-adze	
13	517195	6668610	Halved cobble-adze	
14	517791	6668618	Unifacial chopper	

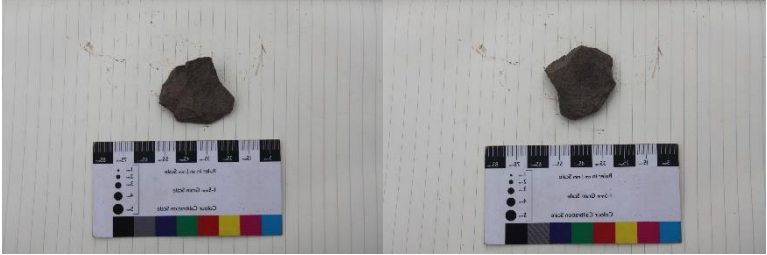
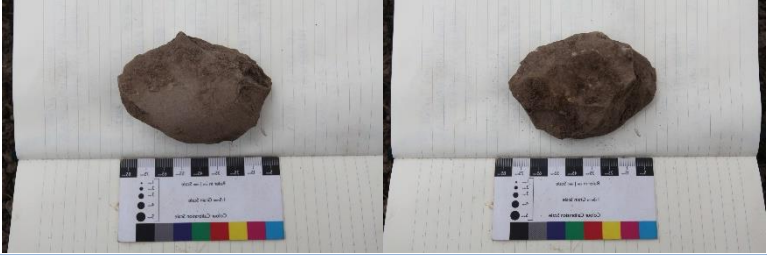
ID	E	N	Type	Photos
15	517770	6668611	Hammerstone	
16	517760	6668605	Flake piece	
17	517760	6668605	Halved cobble-adze	
18	517771	6668606	Flake piece	
19	517784	6668654	Flake piece	
20	517799	6668661	Halved cobble-adze	
21	517823	6668656	Flake piece	

Table 10: 54 Pullen Street- Cortex by artefact type

Artefact type	Average	Median	Variance
Flake piece	3.75	0	112.5
Halved cobble- adze	56.25	60	655.3571
Hammerstone	100	100	0
Unifacial chopper	40	40	100

6.3 Requirement for archaeological test excavation

Section 3.1 of the CoPAI (DEECW 2010B:24) makes the following comment on the requirement archaeological test-excavations as part of the assessment:

Archaeological test excavation will be necessary when (regardless of whether or not there are objects present on the ground surface) it can be demonstrated through Requirements 1, 2, 3, 4, and 5 that sub-surface Aboriginal objects with potential conservation value have a high probability of being present in an area, and the area cannot be substantially avoided by the proposed activity.

Based on the observation of ground conditions and the findings of nearby archaeological studies it is considered that archaeological excavation is required to comply with the CoPAI/ Due Diligence Code of Practice. Requirement 16A (5) of the CoPAI prescribes that any archaeological excavation must be based on a sampling strategy of less than 0.5% of the landform subject to investigation:

Test excavations units may be combined and excavated as necessary to understand the site characteristics, however:

- i) the maximum continuous surface area of a combination of test excavation units at any single excavation point conducted in accordance with point 1 (above) must be no greater than 3 m²
- ii) the maximum surface area of all test excavation units must be no greater than 0.5% of the area – either PAD or site – being investigated.

The terminating spur is the primary target for the archaeological investigations as this is the landform most likely to contain Aboriginal archaeological sites.

6.4 Excavation objectives and research questions

The following research questions will guide the assessment:

- does the Study Area contain Aboriginal archaeological sites that will be impacted by the proposed residential area and if so what is the nature, extent and cultural significance of those sites?
- does the Study Area contain Aboriginal archaeological values that will be impacted should the project proceed?
- to what extent has previous ground disturbance impacted on the Aboriginal cultural and archaeological landscape, including visual impacts?, and
- what are the Aboriginal communities expectations for the management of Aboriginal archaeological sites?

6.5 Excavation methodology

Based on the outcomes of the pedestrian site survey the following test excavation strategy was undertaken for the Study Area:

- excavation of up to 100x 50cm (0.50m²) test pits to the depth that the excavation becomes compacted clay at the base of the topsoil/ 'A' soil horizon (see **Figure 21**)
- retrieval of artefacts using a 4mm aperture mesh using a 'wet sieve' method to separate topsoil/ sands and artefacts
- analysis of artefacts onsite recording the following attributes:
 - i. artefact type
 - ii. raw material
 - iii. artefact dimensions (length x width x thickness (mm))
 - iv. Point of Force Application (PFA) to ridge relationship
 - v. Termination types (Feather, Step or Hinge),
 - vi. Percentage and type of cortex, and
 - vii. Observations of use wear or resharpening.
- Observations of the characteristics and qualities of the /sand soil and any changes in soil including colour, inclusions (gravels), sandiness and presence of organic materials
- Reburial of the artefacts within the test pit (south-eastern corner) with each artefact individually bagged and labelled including a metal object to assist with the relocation of the artefact using a metal detector, and
- Completion of a summary report for RAPs which will be additionally lodged as a Aboriginal Site Impact Recording Form.

6.6 Excavation proposal/ methodology

A total of three Aboriginal sites officers will be required for the excavations, to be engaged as sub-contractors to Heritage Management & Planning Pty Ltd. Please note that registration as a RAP is not a guarantee of employment.

The criteria for selection of sub-contractors from the group of RAPs will include:

- Current public liability and personal accident insurance/ workers compensation insurance.
- Experience and qualifications undertaking archaeological excavations on the Coffs Coast
- Providing a balance of male and female representatives
- Availability, and
- Professional references.

Fees will be discussed with the selected RAPs prior to engagement and payment will be made based on receipt of a tax compliant invoice.



Aboriginal sites officers will be responsible for transport to and from the Study Area and will be responsible for all personal protective equipment (boots, long shirt/ pants, hat & gloves). Subcontractors may also be required to sign onto a SWMS.

The archaeological excavations were undertaken on 20 and 21 June 2024 with the following Aboriginal sites officers.

- Uncle Ian Brown, Danial Flanders (Coffs Harbour & District LALC)
- Matthew Dootson (Garby Elders Group), and
- Andrew Taylor (Jagun Elders and Aged Care).

The excavations were undertaken in substantial accordance with the archaeological excavation proposal issued in May 2024. Due to the amount of time taken to undertake the second pedestrian survey and record the surface finds the lower creek bank in the north-eastern portion of the Study Area was not subject to archaeological excavation (test pits 5,6 & 7). This portion of the Study Area is in close proximity to the old sawmill and it was considered that it would have the greatest amount of soil disturbance/ lowest confidence in excavation results. Three test pits (test pits 1,2 & 3) were placed along the bank of Woolgoolga Creek in an area which had not been subject to tilling- test pit 4 was not excavated based on the results of the excavations which demonstrated a soil profile with compacted alluvial gravels indicating significant disturbance from Woolgoolga Creek.

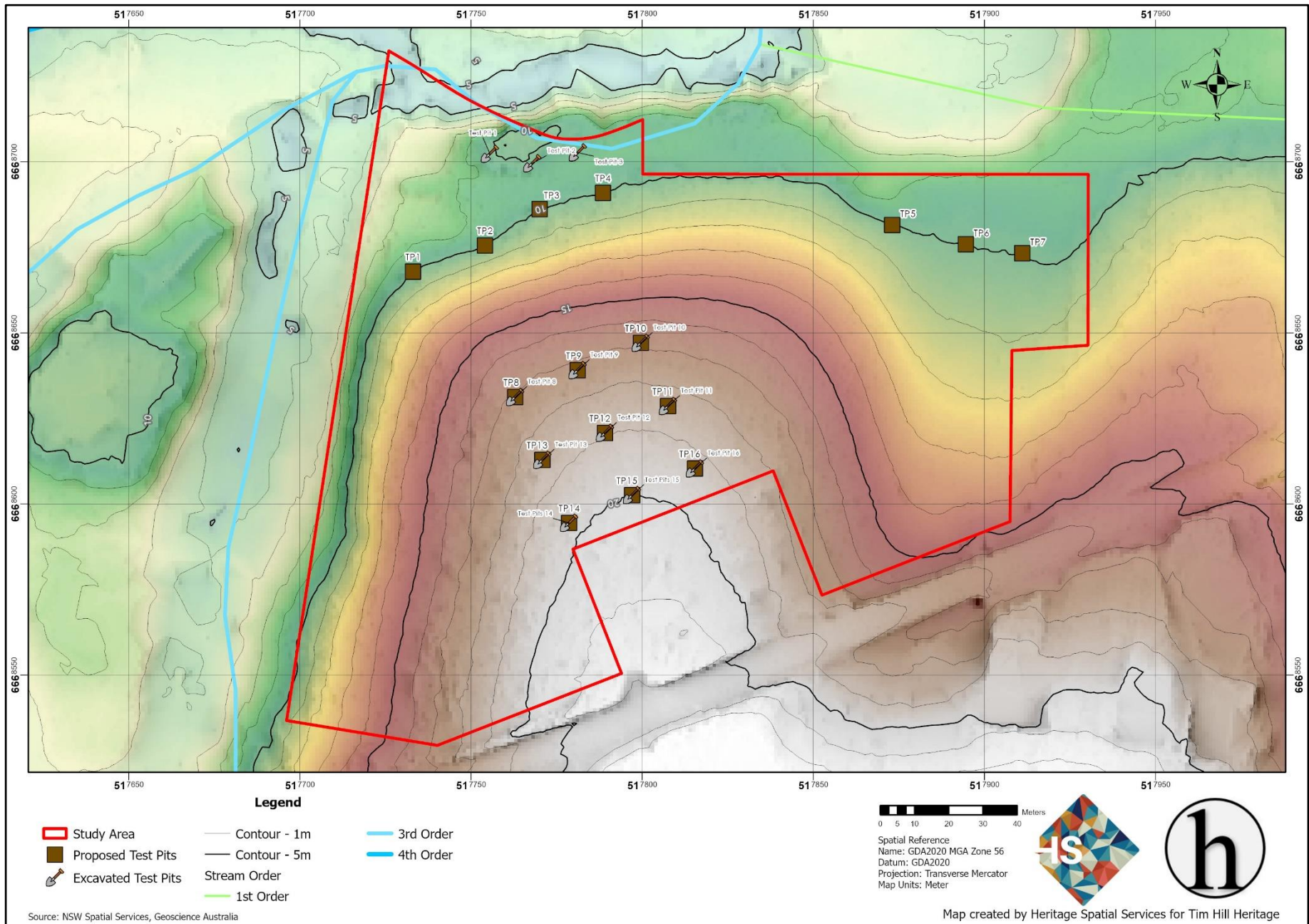


Figure 21: 54 Pullen Street- Location of archaeological test pits vs test pit proposal/ sampling strategy

Table 11: Summary of archaeological test pit locations

Test-Pit	Coordinates	XU	Soil type	Surface	Termination	Wall
1	517756/ 6668702	0 1 2	Mixed grass Mixed topsoil with angular gravel Angular gravels, some topsoil Terminated c60mm due to compacted clays and gravels			
2	517773/ 6668700	0 1 2	Mixed grass Mixed topsoil with angular gravel Angular gravels, some topsoil Terminated c70mm due to compacted clays and gravels			
3	517781/ 6668703	0 1 2	Mixed grass Mixed topsoil with angular gravel Angular gravels, some topsoil Terminated c90mm due to compacted clays and gravels			
8	517767/ 6668634	0 1 2 3	Bare earth- tilled Mixed topsoil Mixed topsoil - some clays Mixed topsoil - increased clays Terminated c170mm due to compacted clays and gravels			
9	517783/ 6668638	0 1 2	Bare earth- tilled Mixed topsoil - some gravels/ clay Terminated c150mm due to compacted clays.			

Test-Pit	Coordinates	XU	Soil type	Surface	Termination	Wall
10	517800/ 6668648	0 1 2	Bare earth- tilled Mixed topsoil - some gravels/ clay Terminated c140mm due to compacted clays.			
11	517780/ 6668595	0 1 2	Bare earth- tilled Mixed topsoil - some gravels/ charcoal Mixed topsoil - some gravels/ charcoal Terminated c130mm due to compacted clays and gravels			
12	517780/ 6668595	0 1 2	Bare earth- tilled Mixed topsoil - some gravels/ charcoal Mixed topsoil - some gravels/ charcoal Terminated c120mm due to compacted clays and gravels			
13	517780/ 6668595	0 1 2	Bare earth- tilled Mixed topsoil - some gravels/ charcoal Mixed topsoil - some gravels/ charcoal Terminated c140mm due to compacted clays and gravels			
14	517780/ 6668595	0 1 2	Bare earth- tilled Mixed topsoil with some small gravels Mixed topsoil with some small gravels Terminated c110mm due to compacted clays and gravels			

Test-Pit	Coordinates	XU	Soil type	Surface	Termination	Wall
15	517786/ 6668616	0 1 2	Bare earth- tilled Mixed topsoil with some small gravels Mixed topsoil with some small gravels Terminated c150mm due to compacted clays and gravels			
16	517786/ 6668616	0 1 2	Bare earth- tilled Mixed topsoil with some small gravels Mixed topsoil with some small gravels Terminated c140mm due to compacted clays and gravels			



Figure 22: Test Pit 13- Excavation



Figure 23: Test pit 9- excavation



Figure 24: 54 Pullen St- Sieve station



Figure 25: 54 Pullen St- Sieve station

6.7 Archaeological excavation results

For the purposes of the ACHAR the following describe the outcomes of the archaeological test excavations of the Study Area to inform the cultural heritage impact assessment:

- Seven Aboriginal stone artefacts were identified during the excavations, comprising flake pieces (n=4/57%), Halved cobble adze (n=2/28%) and a primary flake (n=1/14%)- the relatively large proportion of flake pieces can be attributed to the recent tilling as smaller flakes are more likely to be retained within the soil profile whereas larger flakes are more likely to sit above the soil profile after disturbance
- two chert/ mudstone flake pieces were identified- chert is a common stone material type in sub-coastal archaeological assemblages and is accessible within the Coramba Beds that outcrop across the hinterland of the Coffs Coast
- the greywacke artefacts are substantially consistent with the assemblage identified during the pedestrian survey and consistent with the assemblage predicted during the preliminary site inspection
- the overall density of artefacts is consistent with other studies in the local area (total of 7 artefacts across 3m² or c.1 artefact per 0.5m²)- artefact densities in the order of 1 artefact per >5m² are consistent on the sub-coastal forests of the north coast
- the indications of use wear are consistent with the functional use of the artefacts as choppers- artefacts are typically discarded rather than reworked and reused as the material is readily available along the beaches, and
- the artefacts were located within the test pits on the ridge crest as predicted in the excavation sampling strategy- the three test pits across the creek bank had very high levels of angular gravels consistent with the erosion and deposition of shales during floods.

Table 12: 54 Pullen St- Artefact data from excavations

ID	East	North	Landform	Type	Stone material	L	W	T	Cortex (%)	Notes
TP8-1	517767	6668634	Ridge	Flake piece	Chert	34	22	8	0	
TP8-2	517767	6668634	Ridge	Flake piece	Greywacke	39	31	10	0	
TP9-1	517783	6668638	Ridge	Halved cobble- adze	Greywacke	122	83	57	40	
TP9-2	517783	6668638	Ridge	Halved cobble- adze	Greywacke	120	81	36	0	Damage along two of the cobble edges
TP15-1	517797	6668602	Ridge	Flake piece	Greywacke	83	54	26	0	
TP15-2	517797	6668602	Ridge	Flake piece	Chert	31	14	6	0	
TP16-1	517786	6668616	Ridge	Halved cobble- adze	Greywacke	51	78	16	30	edge damage along the distal edge of the core

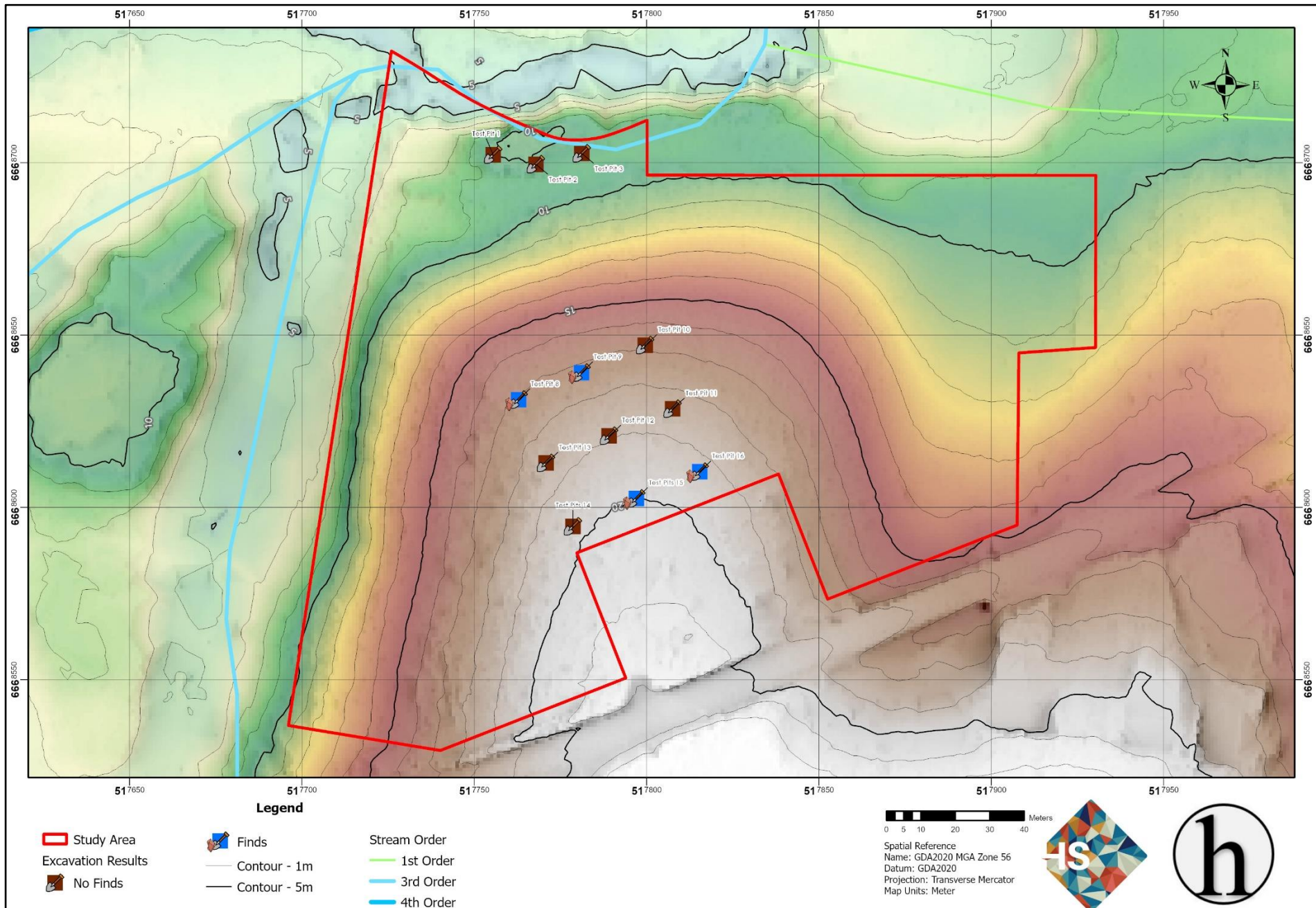
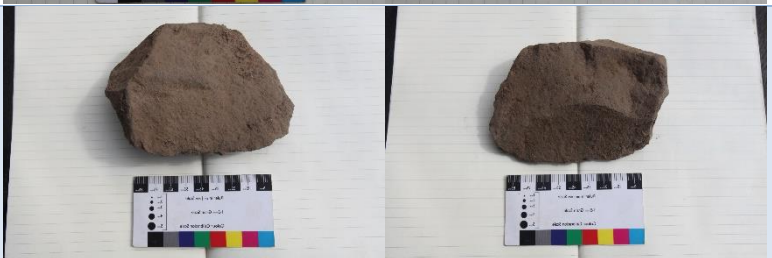


Figure 26: 54 Pullen St- Location of artefacts from excavation

Table 13: 54 Pullen St- Artefact photos from excavation

ID	Coordinates	Type	Photo
TP8-1	517767/ 6668634	flake piece	
TP8-2	517767/ 6668634	Flake piece	
TP9-1	517783/ 6668638	Halved cobble- adze	
TP9-2	517783/ 6668638	Halved cobble- adze	
TP15-1	517797/ 6668602	Flake piece	
TP15-2	517797/ 6668602	flake piece	
TP16-1	517786/ 6668616	Halved cobble- adze	

6.8 Archaeological analysis and scientific assessment

Based the outcomes of the archaeological investigation it is possible to make the following statements to inform the ACHAR:

- The Pullen Street Woolgoolga Open Campsite 1 comprises a stone artefact scatter with a known assemblage of 28 artefacts comprising:
 - i. Flaked piece (n=12/42%)
 - ii. Halved cobble- adze (n=11/29%)
 - iii. Unifacial chopper- (n=3/10%), and
 - iv. Hammerstone (n=2/7%).
- the primary stone material type is Greywacke (n=26/92%) and a fine grained sedimentary/ chert material (n=2/7%)- the relative proportion of locally available greywacke artefacts is consistent across the sub-coastal forests of the Coffs Coast
- the artefact assemblage comprised relatively large cobble tools which had been lifted to the ground surface by agricultural tilling (average 72mm x 48mm x 25mm)- the smaller chert/ fine grained sedimentary flakes and flake pieces were predominately found within the test pit excavations and it is reasonable to proceed on the basis that the balance of larger and smaller artefacts would balance out within increased excavation sample size
- as the artefacts were produced on coastal cobbles many had relatively high percentages of cortex (average = 31%)- the proportion of cortex indicates an overall low degree of stone material conservation as the stone source is relatively close and widely available near rocky headlands
- many artefacts had indications of edge wear and damage however no artefacts had obvious indications of 'retouch' or reworking of the useable edge- this is consistent with coastal artefact assemblages where the tools are inferred to have been used for processing food and not for the production of wooden implements and artefacts, and
- the overall site density is in the order of 1 artefact per c. 5 metres squared across the ridge crest- this is consistent with archaeological surveys on similar residential projects in the sub-coastal forests around Woolgoolga.

6.9 Cultural landscape values

The following statements summarise the cultural landscape values of the Study Area as informed by consultation with the RAPs

- Mens and womens sites are known to occur in close proximity to Woolgoolga Creek above and below the Study Area
- the Study Area (creek flats) forms part of the Woolgoolga Creek catchment which is a culturally significant waterway that connects the coastline to the elevated ranges and forests and the headwaters of the estuary

- landforms within the sub-coastal zone were used as hunting areas between the coast and sub-coastal forests, and
- the forests of the northern beaches were utilised in the historic period by Aboriginal groups travelling down from Grafton and the from New England Tablelands for seasonal camping and for forestry and agricultural work- many Aboriginal people were known to camp under permissive occupancy arrangements up until 1960's undertaking seasonal work as farm and mill labourers.

6.10 Adequacy of the assessment

A key issue that the ACHA investigation needed to resolve was the requirement for archaeological excavation as the Study Area is located in an area which is known to contain Aboriginal archaeological sites. The following statements on the reasons for not undertaking archaeological excavation as part of the planning proposal phase are provided to inform the assessment:

- the preliminary consultation has identified the need to undertake additional archaeological investigation using test pits to better understand the archaeological values of the Study Area
- based on the archaeological study it is considered that the known archaeological site is consistent with other sites recorded within the local area and comprise low-density stone artefact scatters which are relatively common in the local area and the Coffs Coast region, and
- the layout of the proposal provides space to relocate and stockpile topsoils containing archaeological sites within the environmental/ conservation reserves and the involvement of the Aboriginal community in designing the public spaces and community areas along Darkum Creek- there is no requirement for extensive archaeological salvage excavations as a mitigation measure as the artefacts can be retained 'on-country'

7 ABORIGINAL CULTURAL HERITAGE ASSESSMENT

7.1 Significance Assessment

7.1.1 ICOMOS Burra Charter

The following comments are provided to understand the significance of the Study Area in accordance with the *Australian ICOMOS Burra Charter* (2013) (Table 14):

Table 14: Summary of significance assessment (ICOMOS Burra Charter 2013)

VALUE	COMMENT
Social/ Cultural	The Study Area forms part of the Woolgoolga Creek catchment which includes a culturally significant waterbody near Woolgoolga Beach/ Lake.
Historic	The forests around the northern beaches were used by Aboriginal people in the mid-20th century as campsites while travelling or working in the area.
Scientific (Archaeological)	The Study Area contains archaeological sites which are typical of the local area, being stone artefact scatters, which have been moderately disturbed by forest clearing and agriculture.
Aesthetic	The Study Area is not considered to have aesthetic value as it does not contain significant views to the coastline.

7.1.2 NSW Heritage Office- Guidelines for Assessing Heritage Significance

The following comments are provided to assess whether the Study Area meets the criteria of significance as set out in the Department of Planning and Environment (2023) *Guidelines for Assessing Heritage Significance* (Table 15).

Table 15: Significance Grading (Department of Planning and Environment (2023))

Value	Assessment question	Significance
Historic	A place or object is important in the course, or pattern, of the local area's cultural or natural history.	No
Historical association	A place or object has strong or special association with the life or works of a person, or group of persons, of importance in the cultural or natural history of the local area.	No
Aesthetic/creative/technical achievement	A place or object is important in demonstrating aesthetic characteristics and/or a high degree of creative or technical achievement in the local area.	No
Social, cultural and spiritual significance	A place or object has strong or special association with a particular community or cultural group in the local area for social, cultural or spiritual reasons.	No
Research potential	A place or object has potential to yield information that will contribute to an understanding of the local area's cultural or natural history.	No
Rare	A place or object possesses uncommon, rare or endangered aspects of the local area's cultural or natural history.	No
Representative	A place or object is important in demonstrating the principal characteristics of a class of the local area's: • cultural or natural places • cultural or natural environments.	No

7.1.3 Assessment of scientific value

In accordance with section 4.2.2 of the *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011:9, 10) the following comments are provided to understand the scientific significance of the Study Area (Table 16).

Table 16: Scientific significance assessment.

SITE	RESEARCH POTENTIAL	REPRESENT-ATIVENESS	RARITY	EDUCATIONAL POTENTIAL
Pullen Street Woolgoolga Open Campsite 1 (#22-1-0696)	Low	Low	Low	Low

7.1.4 Summary Statement of Significance

The known Aboriginal stone artefact scatters, being sites S2W17, S2W18, S2W26 and S2W26 Redeposit sites, have been assessed as being of socio-cultural significance to the Aboriginal community and of low scientific significance (see Table 10 above). The Pullen Street Woolgoolga Open Campsite 1 (#22-1-0696) has been assessed as being of socio-cultural significance to the Aboriginal community and of moderate scientific significance. This assessment is consistent with other low-density stone artefact scatters along the coastal hinterland of the NSW Coffs Coast and is substantially in response to the following considerations:

- Stone artefact scatters are very common on ridge crests and spurs throughout the sub-coastal zone and primarily relate to hunting, the use of forests for resource use and as pathways between the mountains and coastline- these sites typically comprise larger primary flakes and choppers made from coastal cobbles
- The Pullen Street Woolgoolga Open Campsite 1 has limited scientific significance as it includes flakes and flake pieces which are produced from stone material sources away from the local beaches- this demonstrates movement and trade within a much larger cultural landscape and connects the Study Area to both the coastline and the sub-coastal forests
- Archaeological sites within former forest and agricultural landscapes have typically been subject to significant topsoil erosion and are rarely considered to be 'insitu' or have any spatial integrity and therefore have limited research potential, and
- There are established precedents for the management of stone artefact scatters through the engagement of Aboriginal sites officers to relocated artefacts during construction works.

7.2 Impact Assessment and Mitigation

7.3 The Proposed Works

The proposed project consists of the subdivision of land into 22 residential lots and a residual Lot to be transferred to City of Coffs Harbour Council as a riparian/ open space Lot including the southern bank of Woolgoolga Creek. The development application will include the construction of civil infrastructure and required servicing utilities and house pads. The lots will be between 451 and 1589m² per lot, with internal roads for access, as seen in the general layout below.

The Proposed Works includes the following works associated with the proposed residential masterplan subdivision, which would reasonably include the following ground disturbing works (see **Error! Reference s** **ource not found.**):

- Bulk earthworks including the construction of internal roads, kerbs, gutters and drains
- Stormwater detention basin above Woolgoolga Creek
- Underground utilities including power, water and sewer
- Public reserves and open space including recreational infrastructure along Woolgoolga Creek
- Building pads including retaining walls, and
- Landscaping and remediation works.

7.4 Impact Assessment

The following summarises the potential impacts to Aboriginal archaeological values known to occur within the Study Area (**Table 17**).

Table 17: Impact assessment table

Site number	/ Name		Type of harm	Degree of harm	Consequence of harm
#22-1-0696	Pullen	Street	Direct	Total	Total loss of value
	Woolgoolga	Open			
	Campsite 1				

7.5 Impact Avoidance and Management Strategies

The primary management consideration is that the topsoil are not suitable for civil construction and will be removed and stockpiled for landscaping or stored within areas identified for passive open space or environmental conservation. The retention of soils, and documentation of the movement of soils from the ridge crests, is the main strategy to mitigate impacts to Aboriginal archaeological sites within the Study Area. The clay and shale rich subsoils have a very low potential to contain Aboriginal objects and will not be subject to controls to mitigate impacts to cultural values during construction works.

Based on the outcomes of the desktop assessment, the archaeological site inspection and the consultation with the Aboriginal community it is possible to make the following statements regarding avoidance and management strategies for archaeological sites known to occur within the Study Area (**Table 18**).

Table 18: Summary of impact avoidance and management strategies

AVOIDANCE & DISCUSSION MANAGEMENT STRATEGIES	
Site avoidance	There are no known sites with high conservation value within the Study Area, such as burials, middens, ceremonial sites or scarred and modified trees, that would require exclusion zones/ conservation areas to mitigate impacts to the sites.
Site relocation	This site is identified as being of low cultural significance and there are precedents for relocating the artefacts to nearby areas under a AHIP or management plan.
Archaeological investigation	Based on previous studies along the northern beaches hinterland it is considered that there is a moderate/high likelihood the ridge crests and spurs above creeks contain Aboriginal stone artefact scatters. There is an overall low potential for side slopes to contain archaeological sites as these areas have lost a lot of topsoil during successive phases of clearing and agricultural activities. There are a number of historic campsites known around the Study Area however the exact location of the sites is not known- this would require a oral history/ cultural landscape mapping approach to identify whether these campsites may have been located within the Study Area.
Water quality controls	A significant portion of the creek lines and creek banks along Woolgoolga Creek will be retained as open space or environmental protection areas- which will protect archaeological sites along the creek and water quality going into Darkum Creek. Consultation with the Aboriginal community will inform the management of these spaces and protect cultural values of Woolgoolga Creek downstream.

7.6 Ecologically Sustainable Design principles

The *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (OEH 2011) specifically identifies the following principles as part of the impact assessment (OEH 2011:12):

- Precautionary Principle, and
- Principle of inter-generational Equity

The Environmental Defenders Office (2022) factsheet on Ecologically Sustainable Development (ESD) provides the following comments on the Precautionary principle and the Principle of Intergenerational equity

The Precautionary principle

If there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. If risk to the environment is high, but scientific certainty of the risk eventuating is low, the precautionary principle can fill the gap and essentially requires decision-makers to act as though the risk to the environment is real.

There is an implicit acknowledgment that science and scientific methodologies have limitations. Because of these limitations, it is unlikely that the full consequences a particular act or activity upon the environment can be known in advance. A lack of full scientific certainty is therefore the norm, rather than the exception.

Inter-generational equity

This principle states that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations. When applied to Aboriginal cultural heritage management the application of ESD principles is problematic as the ESD principles are primarily developed to inform decision making around ecological values whereas the cultural heritage process includes Aboriginal knowledge holders and Elders who are the primary stakeholders/ decision makers with respect to Aboriginal cultural values and have different value systems. The EDO (2022) makes the following comment on the practical application of the ESD principles that is relevant to this assessment:

ESD seeks to maximise the combined total of economic, social and environmental values relevant to a decision but to do this, value judgments may need to be made by the decision-maker.

The Aboriginal community consultation process has an inherent mechanism to provide opportunities for Aboriginal knowledge holders/ RAPS to inform the investigation process, significance assessment and management response based on their individual or collective values and judgements on the acceptable level of change or impact to their culture. The following ESD considerations / statements are provided to inform the assessment (Table 19).

Table 19: ESD considerations and statements

ESD Principle	Comment	Management response
Apply Precaution	The impact assessment and management response is informed by the precautionary principle: - the ACHA has been informed by consultation with three Aboriginal groups that are familiar with the cultural landscape of Woolgoolga and the northern beaches - the assessment has concluded there is the potential for isolated artefacts and low-density artefacts scatters but it is considered likely that the main campsites were located around Woolgoolga Lake and the coastline - a substantial portion of the Study Area will be retained as public reserve, environmental conservation area or rural landscape which managed through a collaborative design project with the Aboriginal community - the final lot layout will determine the amount of topsoil from the ridge crests that will need to be relocated and managed within the open space areas to retain any Aboriginal objects on country, and - there are opportunities for additional archaeological investigation prior to development consistent that can be	The primary management response is to: - undertake archaeological investigation of the ridge crest during the development application phase when the project constraints are better understood - retain sufficient space within the masterplan area to retain topsoil from the ridge crest in the event that archaeological excavations demonstrate this area contain Aboriginal objects, and - undertake a collaborative design process with representatives of the Aboriginal community to identify appropriate community use and public infrastructure in the low-lying environmental conservation area.

ESD Principle	Comment	Management response
	better informed by engineering and other land-use constraints.	
Intergenerational equity	The impact assessment and management response has been informed by the principle of inter-generation equity: • artefacts will be retained on country at a repatriation site within the public reserves and open space that can be accessed in the future for community led research, and • the public reserves will provide opportunities for Aboriginal families to share stories and knowledge in areas which are currently private freehold land.	• The ACHA has included consultation with RAPs and the management response has been informed by previous experiences managing sites on residential projects in the Coffs region, and • The archaeological excavation and salvage program will provide opportunities for younger Aboriginal sites officers to work with older sites officers to identify and recover artefacts.

8 MANAGEMENT RECOMMENDATIONS

8.1 Cultural Heritage Inductions

The AHIP should be conditioned to require:

- Cultural heritage inductions delivered by RAPs are required for any contractors and staff involved in early works affecting topsoils within the Study Area to outline the requirements and conditions of the AHIP and will be delivered with representatives of the RAPs.
- Inductions for civil/ bulk earthwork contractors must include the Unexpected Find Procedure, Aboriginal human remains and Vegetation Management Plan (VMP) requirements.

8.2 Inclusion of AHIP in Works Plans and Documents

The AHIP should be included in:

- any contracts which involve early works with the potential to impact on topsoils
- any design and construction plans
- any construction inductions or management plans, and
- a physical copy within the site office in a reasonably accessible location.

8.3 Artefact Collection

Where they still occur in the landscape, artefacts which form part of the previously recorded sites, or are consistent in terms of nature, extent and significance, with the previously recorded sites will be collected by Aboriginal sites officers and reburied in a permanent artefact storage area within the passive open space area to the west of the residential subdivision in the intact bushland). The artefact collection will include the following sites, and any stone artefacts within the AHIP area which are identified by RAPs and considered to be consistent the Pullen Street Woolgoolga Open Campsite 1 (#22-1-0696).

The following procedure must apply to the Pullen Street Woolgoolga Open Campsite 1:

- the collection of artefacts from the known sites must take place as part of the 'early-works' for the subdivision
- the collection must be undertaken by Aboriginal sites officers identified by the RAPs- no more than three Aboriginal sites officers will be engaged at any time for collection works
- the collection must include a unique identifier for each artefact, a location using phone GPS and a photographic record using phone camera- all artefacts must be individually bagged and labelled including the site officer name and date to assist with the management of the artefact recording
- outcomes of the collection must be recorded on AHIMS via a Site Impact Record Form
- the collected artefacts may be subject to temporary storage in a secure area of the work compound/ site office established to support the early works program,
- if a secure location in the site office is not available, the collected artefacts may be subject to temporary storage underground within the permanent artefact storage area, and

- the permanent storage of the artefacts to the permanent artefact storage area must take place at the end of the early works phase of the project and prior to the commencement of the main civil/ bulk earthworks contract.

8.4 Topsoil Relocation Areas (Archaeological Topsoil Strip)

The following procedure applies to the topsoil relocation/ strip areas – being the ridge crest above Woolgoolga Creek (c. 10 metres above sea level) (see **Figure 27**):

- the collection must be undertaken by Aboriginal sites officers identified by the RAPs- no more than three Aboriginal sites officers will be engaged at any time for collection works
- the topsoils from the ridge crest mapped must be stripped and relocated to the permanent topsoil storage area
- stripping of topsoil may be undertaken with a larger excavator (c. 15-25 ton) and there are no specific controls on excavation depths- the turf layer may be retained for later use as part of revegetation works under the VMP
- subject to safe work practices set by the contractor-Aboriginal sites officers may collect artefacts from the excavated ground surface during stripping operations
- Aboriginal Sites Officers may collect artefacts as the stripped topsoil is deposited on the permanent topsoil storage area
- all artefacts which are collected from the topsoil relocation area should be relocated under the supervision of RAPs to the designated permanent artefact storage area
- at the completion of the topsoil stripping the community collection works must be recorded on AHIMS as a Site Impact Record Form
- the collected artefacts may be subject to temporary storage in a secure area of the work compound/ site office established to support the early works program, and
- the burial of the artefacts in the permanent artefact storage area will happen as soon as possible after collection and prior to the completion of the early works.

8.5 Unexpected find procedure

The following procedures will apply to any unexpected finds within the residual AHIP area during the civil/ bulk earthwork and will apply after the early works/ community collection in accordance with the AHIP are complete:

- the find is identified by the site supervisor and documented with a digital or phone camera
- the find will be bagged and labelled with the date, site coordinates and the name of the site supervisor at the time
- the bagged and labelled artefact will be relocated to a secure temporary storage location in the works compound/ site office

- the site supervisor will notify the project archaeologist who will notify RAPs via email to inspect the find(s) to make arrangements to identify the artefact
- at the completion of the civil/ bulk earthworks all artefacts which are collected by the civil contractor in accordance with the unexpected find procedure will be relocated under the supervision of RAPs to the designated permanent artefact storage area
- any artefacts which are collected in accordance with the unexpected find procedure must be recorded on AHIMS as a Site Impact Record Form for the respective sites, or as a new site if appropriate, and
- the burial of the artefacts in the permanent artefact storage area will happen as soon as possible after collection and prior to the completion of the civil/ bulk earthworks.

8.6 Permanent artefact storage area

The following procedures will apply to the permanent artefact storage area:

- a permanent artefact storage area must be established within the subdivision near the bank of Woolgoolga Creek and will involve the excavation of a pit approximately 40x40cm wide and approximately 500cm deep- or larger if required.
- any artefacts collected under the AHIP will be relocated to this site by Aboriginal sites officers and retained permanently 'on-country'- artefacts will be stored in accordance with Requirement 26 of the CoPAI unless requested otherwise by RAPs.
- at the completion of the collection works the pit is to be backfilled and a large rock placed over it to allow for future identification of the site.
- the permanent artefact storage area will be recorded on AHIMS- no additional works to the site, other than burial of artefacts, will be permissible under the AHIP
- the permanent storage of the artefacts will happen as soon as possible after collection to avoid having artefacts subject to temporary storage.
- any environmental management requirements around the permanent artefact storage area will be subject to approval by City of Coffs Harbour Council as part of the Vegetation Management Plan for the subdivision.
- City of Coffs Harbour Council will be responsibility for the ongoing management of the permanent artefact storage area at the completion of the project- the AHIP may be transferred to City of Coffs Harbour Council if required under the VMP.

8.7 Permanent topsoil storage area (Archaeological Topsoil Relocation)

The following procedures will apply to the permanent topsoil storage area- located in the north-western portion of the Study Area between the main road and Woolgoolga Creek (see **Figure 27**):

- the permanent topsoil storage area must be established to permanently storage topsoils from the topsoil relocation area where artefacts are collected during the early works

- topsoil from this area should be retained so that it can be respread over the permanent topsoil storage area to support the subsequent revegetation works under the Vegetation Management Plan.
- the permanent topsoil storage area must be recorded on AHIMS as a relocation site
- any additional harm that may arise from revegetation of the permanent topsoil storage area will be covered by the AHIP, and
- City Coffs of Harbour Council will be responsibility for the ongoing management of the permanent topsoil storage area at the completion of the project.

8.8 Aboriginal skeletal remains

Aboriginal skeletal remains are excluded from the AHIP. Any skeletal remains will be managed in accordance with policies in place at the time and subject to ongoing consultation with RAPs. This may include a variation to the AHIP to provide for the permanent storage of the remains within the permanent artefact storage area.

8.9 Duration of AHIP

The AHIP should be in place for at least 5 years or the life of the DA, whichever is longer. The AHIP may be extended to provide for works required under the approved Vegetation Management Plan.

8.10 Transfer of the AHIP

Subject to the requirements of the Vegetation Management Plan - the AHIP may be transferred to City Coffs of Harbour Council to provide for the management of bushland and open space in the vicinity of the permanent artefact storage area and the permanent topsoil storage area.

8.11 Reporting

The following reporting conditions will apply for the AHIP:

Collection and Harm Report- a interim report should be provided to RAPS at the completion of the Early Works and the final report issued within 4 months of the completion of works as approved by the Development Consent.

AHIP project Management Report- will be issued with six months of the completion of the residential subdivision.

Aboriginal Site Impact Recording Form- will be issued with the fourteen days of the completion of any community collection works which involve movement of artefacts.

Breach of AHIP- As soon as possible after the applicant is aware of a potential breach of the AHIP.

Notice to supply information- as required by the notice.

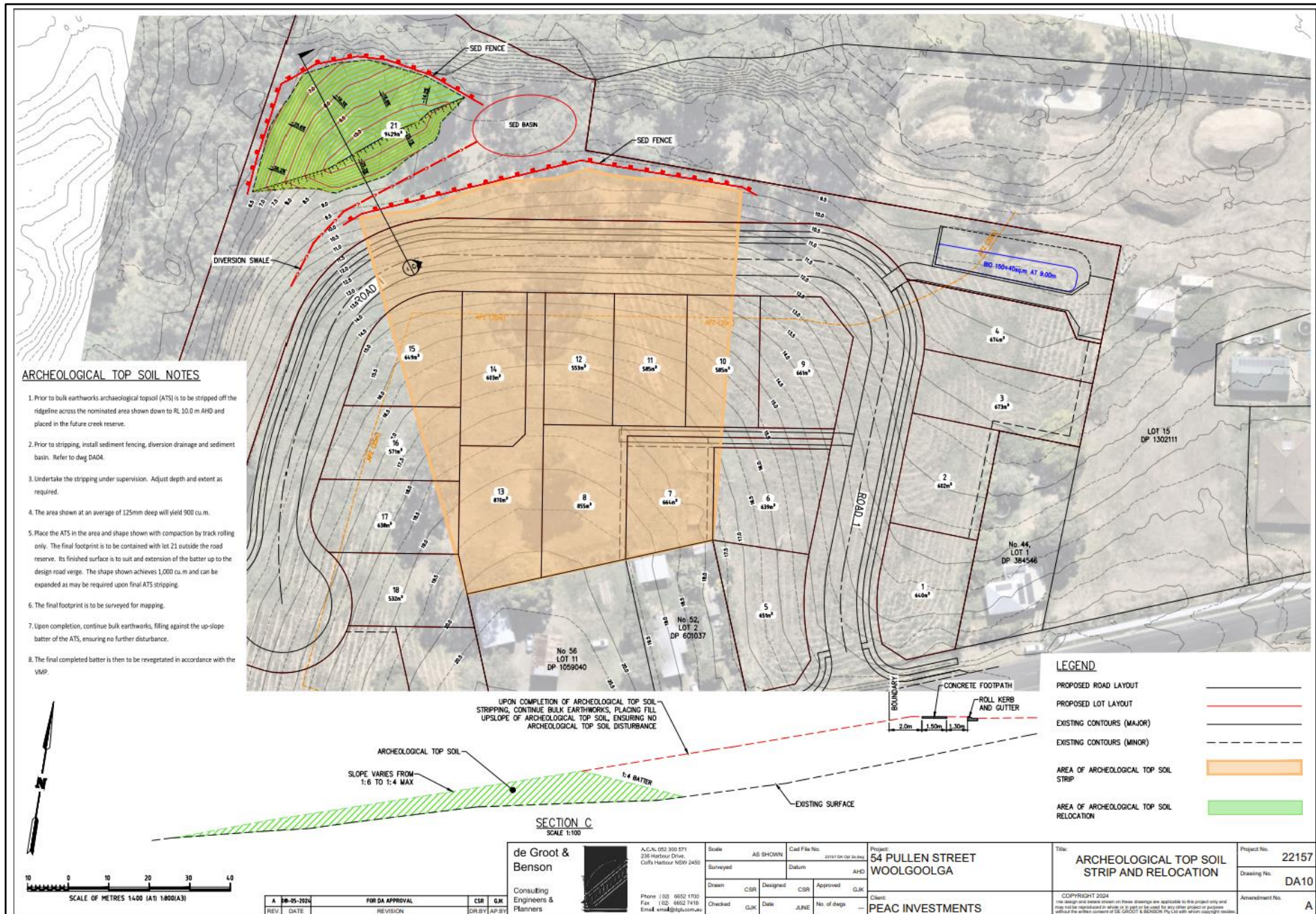


Figure 27: Location of topsoil relocation/ strip area (orange) and topsoil storage/relocation area (green)

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APPENDIX A: AHIMS SEARCH RESULTS



AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : TH182 Pullen St Woopi

Client Service ID : 871449

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
22-1-0022	Woolgoolga;	AGD	56	518500	6669000	Open site	Valid	Shell : -, Artefact : -	Midden	102143,102419
	Contact	Recorders	George England					Permits		
22-1-0144	CHSS-1	AGD	56	518550	6668170	Open site	Valid	Artefact : 35		
	Contact	Recorders	Ms.Jacqueline Collins					Permits		
22-1-0209	S2W-6	AGD	56	516400	6668970	Open site	Destroyed	Artefact : 1	103091	
	Contact Searle	Recorders	ADISE Pty Ltd,Ms.Jacqueline Collins					Permits		
22-1-0210	S2W-5	AGD	56	516495	6668874	Open site	Partially Destroyed	Artefact : 1	103091	
	Contact Searle	Recorders	ADISE Pty Ltd,Ms.Jacqueline Collins					Permits		
22-1-0211	S2W-7	AGD	56	516340	6669241	Open site	Destroyed	Artefact : 200	103091	
	Contact S Scanlon	Recorders	ADISE Pty Ltd,Ms.Jacqueline Collins					Permits		
22-1-0365	CHCC IF 1	GDA	56	519285	6668522	Open site	Partially Destroyed	Artefact : 1		
	Contact	Recorders	Ms.Jacqueline Collins					Permits	3263,4330	
22-1-0367	CHCC AS 2	GDA	56	519005	6668668	Open site	Valid	Artefact : 2		
	Contact	Recorders	Ms.Jacqueline Collins					Permits		
22-1-0439	S2W-5 Redeposit	GDA	56	516454	6668929	Open site	Valid	Artefact : -	103091	
	Contact	Recorders	Ms.Jacqueline Collins					Permits		
22-1-0443	S2W-6 Redeposit	GDA	56	516421	6669019	Open site	Valid	Artefact : -	103091	
	Contact	Recorders	Ms.Jacqueline Collins					Permits		
22-1-0444	S2W-7 Redeposit	GDA	56	516353	6669254	Open site	Valid	Artefact : -	103091	
	Contact	Recorders	Ms.Jacqueline Collins					Permits		
22-1-0432	S2W-25	GDA	56	516417	6669023	Open site	Valid	Artefact : -	103091	
	Contact Mr.Mark Flanders	Recorders	Ms.Jacqueline Collins					Permits		
22-1-0498	McIntosh Crescent IF 3	GDA	56	517490	6668770	Open site	Partially Destroyed	Artefact : -		
	Contact	Recorders	Everick Heritage Pty Ltd, Everick Heritage Pty Ltd, Mr.Tim Hill, Mr.Matt Finlayson					Permits	4190	
14-1-0007	McIntosh Crescent 1	GDA	56	517695	6669077	Open site	Partially Destroyed	Artefact : -		
	Contact	Recorders	Everick Heritage Pty Ltd, Everick Heritage Pty Ltd, Mr.Tim Hill, Mr.Matt Finlayson					Permits	4018,4190	
14-1-0008	McIntosh Crescent 2	GDA	56	517683	6669089	Open site	Valid	Artefact : -		
	Contact	Recorders	Everick Heritage Pty Ltd, Mr.Tim Hill					Permits	4018,4190	
22-1-0647	Newmans Road OS 02	GDA	56	517398	6669220	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	Contact	Recorders	Everick Heritage Pty Ltd, Doctor.Alyce Cameron					Permits		

Report generated by AHIMS Web Service on 08/03/2024 for Tim Hill for the following area at Lat, Long From : -30.1233, 153.1697 - Lat, Long To : -30.1047, 153.2006. Number of Aboriginal sites and Aboriginal objects found is 17

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : TH182 Pullen St Woopi

Client Service ID : 871449

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status **	SiteFeatures	SiteTypes	Reports
22-1-0648	Newmans Road OS 01	GDA	56	517373	6669073	Open site	Valid	Artefact : -, Potential Archaeological Deposit (PAD) : -		
	<u>Contact</u>							<u>Permits</u>		
22-1-0690	Glenwood Manufactured Housing Estate Reburial	GDA	56	517818	6668970	Open site	Valid	Artefact : -		
	<u>Contact</u>							<u>Permits</u>		
		<u>Recorders</u>	Everick Heritage Pty Ltd, Doctor Alyce Cameron							
		<u>Recorders</u>	Everick Heritage Pty Ltd, Mr. Matt Finlayson							

**** Site Status****Valid** - The site has been recorded and accepted onto the system as valid**Destroyed** - The site has been completely impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There is nothing left of the site on the ground but proponents should proceed with caution.**Partially Destroyed** - The site has been only partially impacted or harmed usually as consequence of permit activity but sometimes also after natural events. There might be parts or sections of the original site still present on the ground**Not a site** - The site has been originally entered and accepted onto AHIMS as a valid site but after further investigations it was decided it is NOT an aboriginal site. Impact of this type of site does not require permit but Heritage NSW should be notified

Report generated by AHIMS Web Service on 08/03/2024 for Tim Hill for the following area at Lat, Long From : -30.1233, 153.1697 - Lat, Long To : -30.1047, 153.2006. Number of Aboriginal sites and Aboriginal objects found is 17

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