

APPENDIX C



Aboriginal Heritage Desktop Assessment of Deferred Areas from the Draft Local Environment Plan 2013: Hearnes Lake/Sandy Beach, Emerald Beach and Moonee Beach, NSW

April 2014

Local Government Area: Coffs Harbour City Council

Nearest Town: Woolgoolga, NSW

Consultant Name: Niche Environment and Heritage Pty Ltd

Authors: Georgia Roberts, Fiona Leslie & Cameron Harvey

Proponent: Monteath & Powys Pty Ltd and Coffs Harbour City Council

Document Controls

Project No.	1552		
Document Description	Aboriginal heritage desktop assessment of deferred areas from the draft Local Environmental Plan 2013: Hearn's Lake / Sandy Beach, Emerald Beach and Moonee Beach.		
	Name	Signed	Date
Niche Project Manager(s)	Fiona Leslie		5 November 2013
	Cameron Harvey		7 April 2014
Document Manager	Fiona Leslie		
Authors	Fiona Leslie and Cameron Harvey		
Internal Review	Cameron Harvey and Renée Regal		
Client Review	Darren Holloway, Monteath & Powys Pty Ltd		
Document Status	Final		
Date	7 April 2014		
Prepared for:	Monteath & Powys Pty Ltd and Coffs Harbour City Council		

Cover Photo: 1994 aerial photograph of Emerald Beach (Source: NSW LPI, 2013)

Table of Contents

Tables	2
Figures	2
Plates	2
Summary	3
1. Introduction	4
2. Aims	4
3. Scope	5
4. Location	5
5. Regulatory and Assessment Framework	8
5.1 The NSW Environmental Planning & Assessment Act, 1979	8
5.2 The National Parks and Wildlife Act 1974 (NSW)	8
5.3 The National Parks and Wildlife Regulation 2009 (NSW)	9
6. Literature Review	9
6.1 Consultancy Reports	9
7. Heritage Register Search Results	18
7.1 Commonwealth Registers	18
7.2 State Registers	18
8. Environmental Context	22
8.1 Soils, Geology and Topography	22
8.2 Hydrology	22
8.3 Flora and Fauna	23
9. Ethnohistorical Context	28
10. Modern Land Use History	28
11. Discussion & Predictive Model	30
11.1 Results	32
12. Conclusions and Recommendations	35
13. References	36

Tables

Table 1: AHIMS sites located within the Subject Area (Source: AHIMS).....	19
Table 2: Disturbance characteristics and approximate area effected for each of the Deferred Areas. ..	29
Table 3: Predicted site types and associated landforms for each of the nine Deferred Areas.	31

Figures

Figure 1: General location of the Subject Area (Source: Niche, 2013).....	6
Figure 2: Localised extent of the Subject Area, showing the various Deferred Areas. (Source: Niche, 2013)	7
Figure 3: Previous heritage surveys conducted within the Subject Area since 2000 (Source: OEH and Niche, 2014)	17
Figure 4: AHIMS registered sites registered within the locality of Deferred Areas A, B, C & D (Source: Niche with data provided by OEH).....	20
Figure 5: AHIMS registered sites registered within the locality of Deferred Areas E, F, G, H & I (Source: Niche with data provided by OEH).....	21
Figure 6. Soil landscape and hydrology mapping in relation to Deferred Areas A - D (Source: NSW Lands Department)	24
Figure 7. Soil landscape and hydrology mapping in relation to Deferred Areas E - I (Source: NSW Lands Department)	25
Figure 8. Geology and hydrology mapping in relation to Deferred Areas A - D (Source: NSW Lands Department)	26
Figure 9. Geology and hydrology mapping in relation to Deferred Areas E - I (Source: NSW Lands Department)	27
Figure 10: Regions of archaeological sensitivity both within and surrounding Deferred Areas A-D (Source: Niche, 2014).	33
Figure 11: Regions of archaeological sensitivity both within and surrounding Deferred Areas E-I (Source: Niche, 2014).	34

Plates

Plate 1: The subject area in 1964 (left) and southern half in 1984 (right). Source: NSW LPID.	30
--	----

Summary

This report presents the results of an Aboriginal heritage desktop assessment of deferred areas from the draft Coffs Harbour Local Environmental Plan (LEP) 2013, which includes land at Hearn's Lake / Sandy Beach, Moonee Beach and Emerald Beach situated south of Woolgoolga on the NSW mid-north coast.

The purpose of this assessment was to investigate the nature and extent of Aboriginal archaeology previously recorded in the Hearn's Lake/Sandy Beach, Emerald Beach and Moonee Beach areas and to provide management recommendations to promote the conservation and effective management of significant Aboriginal sites and sensitive landforms.

The desktop assessment involved a consideration of background and contextual information only. The assessment concluded that Aboriginal archaeological sites are likely to survive within the subject area; given the high number of previously identified sites and the relative integrity of landforms. Regions of archaeological sensitivity have been identified within and surrounding the subject area. It is recommended that an archaeological surface survey and consultation with the Local Aboriginal Land Council be undertaken to supplement this report as part of any future development application process. This would provide valuable information on the integrity of landforms within the subject area and further define the potential for subsurface archaeological sites.

1. Introduction

Niche Environment and Heritage Pty Ltd (Niche) was commissioned by Monteath & Powys Pty Ltd, on behalf of Coffs Harbour City Council, to prepare an Aboriginal heritage desktop assessment of deferred areas from the draft Coffs Harbour Local Environmental Plan (LEP) 2013, which includes land at Hearnese Lake / Sandy Beach, Moonee Beach and Emerald Beach situated south of Woolgoolga on the NSW mid-north coast (hereafter referred to as 'the subject area'). This assessment is a required component of a local environmental study and planning proposal being prepared by Monteath & Powys to inform:

- ☐ an amendment to the Coffs Harbour LEP 2000;
- ☐ the preparation of the draft Coffs Harbour LEP 2013;
- ☐ the preparation of Development Control Plans (DCP) for Coffs Harbour City Council; and
- ☐ Developer Contribution Plans (CP) for the deferred areas.

The purpose of this assessment was to investigate the nature and extent of Aboriginal archaeology previously recorded in the Hearnese Lake/Sandy Beach, Emerald Beach and Moonee Beach areas and to subsequently provide management recommendations to promote the conservation and effective management of significant Aboriginal sites and sensitive landforms.

The assessment involved an extensive review of previous Aboriginal heritage assessments, a search of the Aboriginal Heritage Information Management System (AHIMS) for known Aboriginal heritage constraints, and analyses of sensitive landforms and the distribution of previously identified Aboriginal sites and objects.

As a desktop exercise, this assessment should be viewed as a preliminary study only. No fieldwork, visual inspections or consultation with the local Aboriginal community was conducted as part of this study.

This report has been prepared by Fiona Leslie (Senior Archaeologist, Niche) and Georgia Roberts (Archaeologist, Niche) and has been reviewed by Cameron Harvey (Heritage Team Leader, Niche) and Renée Regal (Archaeologist, Niche).

2. Aims

The aims of this assessment were to:

- ☐ Investigate the nature and extent of Aboriginal archaeology previously recorded in the Hearnese Lake/Sandy Beach, Emerald Beach and Moonee Beach areas; and

- ☐ Provide mitigation and management recommendations to promote the conservation and effective management of significant Aboriginal sites and sensitive landforms.

3. Scope

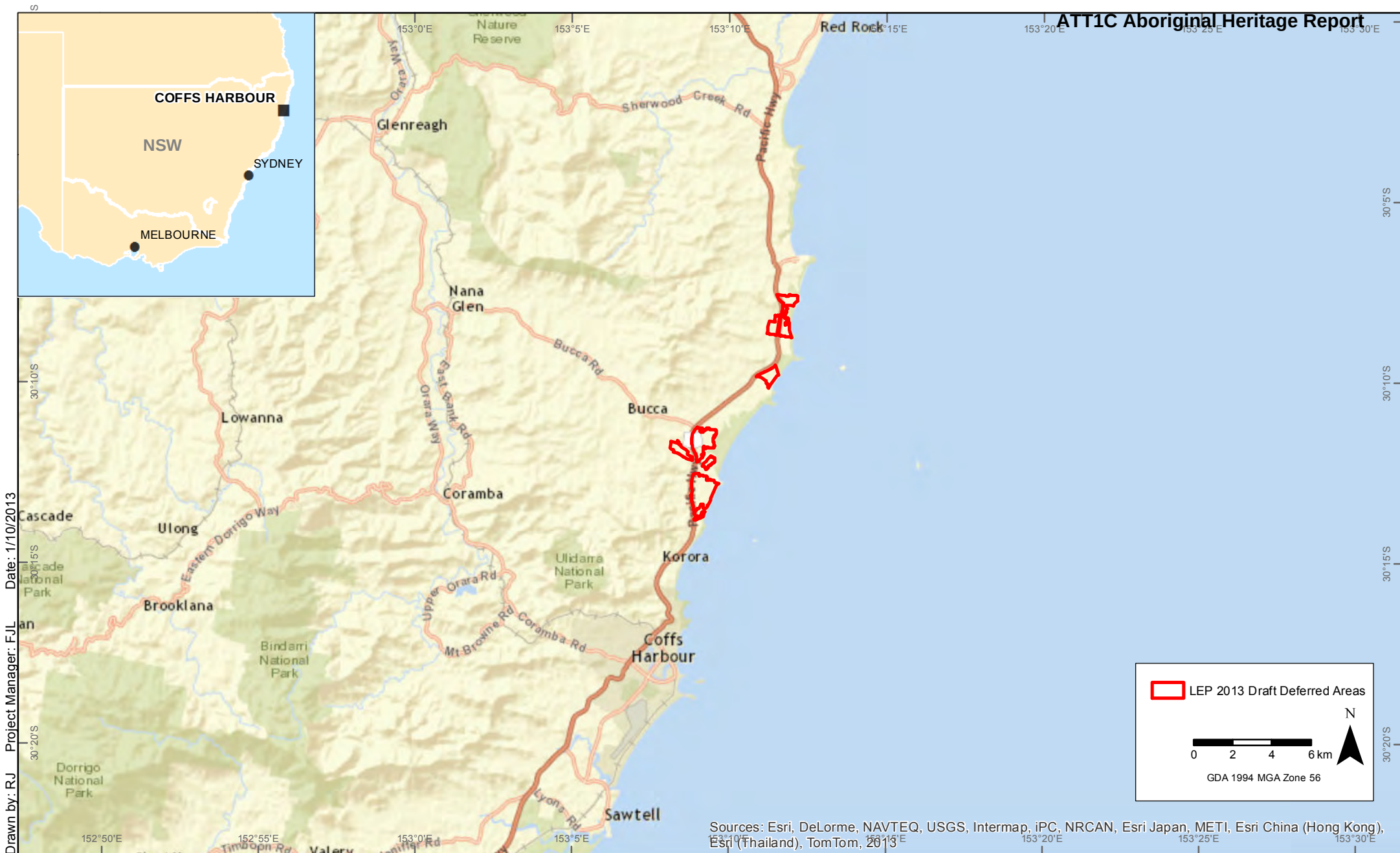
The scope of our assessment included the following tasks:

- ☐ A desktop review of previous studies and reports relevant to the subject area;
- ☐ A search of the AHIMS maintained by the Office of Environment and Heritage (OEH) to identify known Aboriginal objects and sites within and in proximity to the subject area;
- ☐ Consideration of the landscape context and land use history of the subject area;
- ☐ Identification of sensitive landforms within the subject area that have potential for Aboriginal sites and objects; and
- ☐ Provision of management recommendations to promote the conservation and effective management of significant Aboriginal sites and sensitive landforms.

4. Location

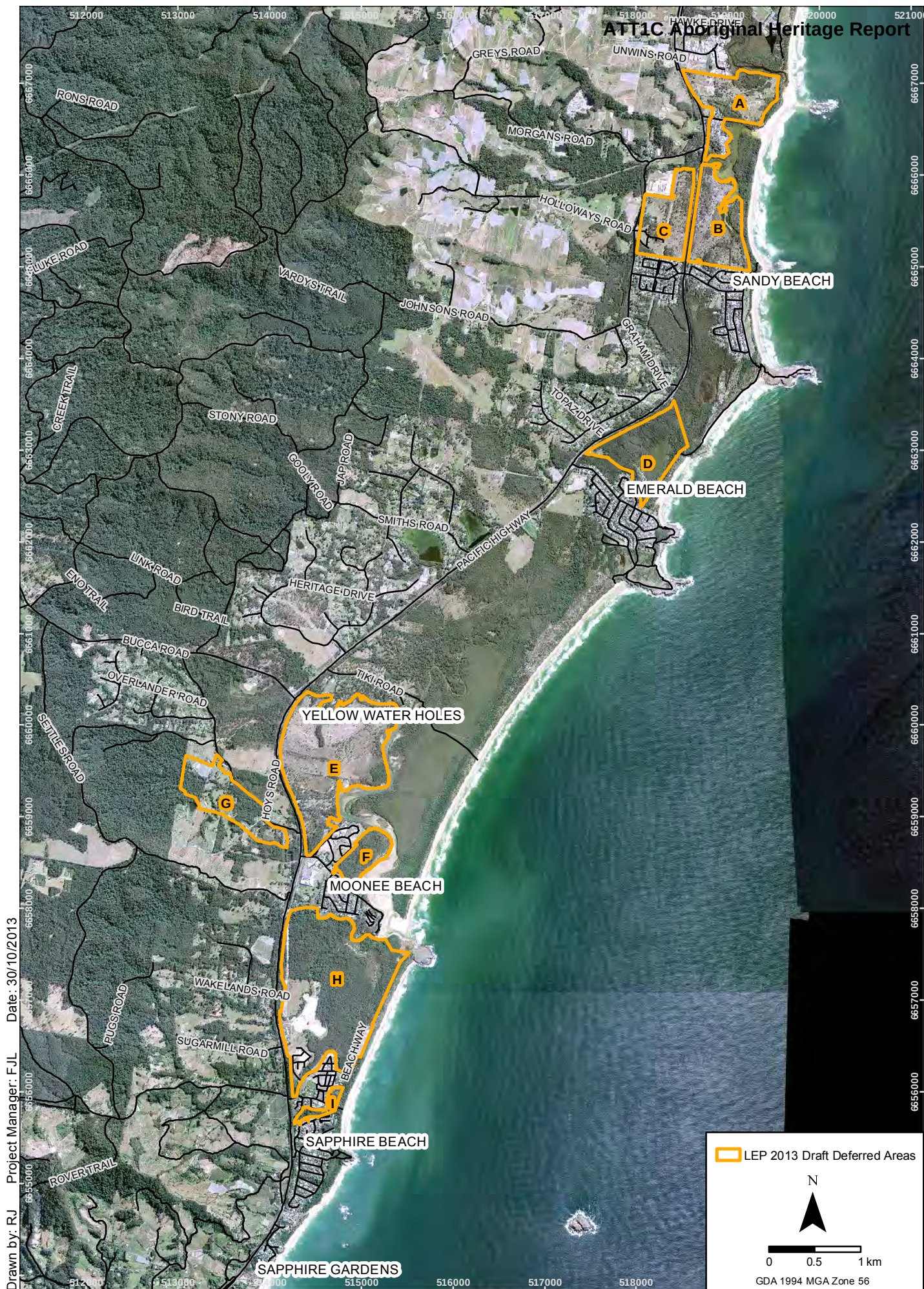
The subject area is located south of the town of Woolgoolga on the NSW mid-north coast. It includes nine areas of land of varying size situated within the townships of Hearn's Lake/Sandy Beach, Emerald Beach and Moonee Beach. For ease of reference these areas are referred to as 'Deferred Areas' and labelled alphabetically (A - I). The extent and location of the subject area is shown in Figures 1 and 2.

The majority of the subject area is currently zoned Residential and Environmental Protection under the Coffs Harbour City LEP 2000.



Regional Project Location
Coffs Harbour – Desktop Aboriginal Heritage Assessment

FIGURE 1



Drawn by: RJ Project Manager: FJL Date: 30/10/2013

Subject Areas
Coffs Harbour – Desktop Aboriginal Heritage Assessment

FIGURE 2

5. Regulatory and Assessment Framework

5.1 The NSW Environmental Planning & Assessment Act, 1979

The NSW *Environmental Planning and Assessment Act* 1979 establishes the framework for cultural heritage values to be formally assessed in the land use planning and development consent process and requires that environmental impacts are considered prior to land development; this includes impacts on heritage items and places. The Act also requires that local governments prepare planning instruments [such as Local Environmental Plans] in accordance with the principles of the legislation to provide guidance on the level of environmental assessment required.

5.2 The National Parks and Wildlife Act 1974 (NSW)

The *National Parks and Wildlife Act* 1974 (NSW) (the 'NPW Act') is the primary piece of legislation for the protection of Aboriginal cultural heritage in New South Wales. The Office of Environment and Heritage (OEH) administer the NPW Act. The NPW Act provides statutory protection for Aboriginal objects by making it illegal to harm Aboriginal objects and Aboriginal places, and by providing two tiers of offence against which individuals or corporations who harm Aboriginal objects or Aboriginal places can be prosecuted. The NPW Act defines Aboriginal objects and Aboriginal places:

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 place means any place declared to be an Aboriginal place under section 84.

The highest tier offences are reserved for knowledgeable harm of Aboriginal objects or knowledgeable desecration of Aboriginal places. Second tier offences are strict liability offences—that is, offences regardless of whether or not the offender knows they are harming an Aboriginal object or desecrating and Aboriginal place—against which defences may be established under the *National Parks and Wildlife Regulation* 2009 (NSW) (the 'NPW Regulation').

Section 87 of the NPW Act establishes defences against prosecution under s.86 (1), (2) or (4). The defences are as follows:

- ☐ An Aboriginal Heritage Impact Permit (AHIP) authorising the harm (s.87(1))
- ☐ Exercising due diligence to establish Aboriginal objects will not be harmed (s.87(2))
Due diligence may be achieved by compliance with requirements set out in the *National Parks and Wildlife Regulation* 2009 (the NPW Regulation) or a code of practice adopted or prescribed by the NPW Regulation (s.87(3))

- ❑ Undertaking “low impact” activities (s.87 (4)).

5.3 The National Parks and Wildlife Regulation 2009 (NSW)

The NPW Regulation 2009 (cl.80A) assigns the *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW* (NSW Department of Environment, Climate Change and Water 2010)(the Code) as one of the codes of practice that can be complied with pursuant to s.87 of the NPW Act. In 2010, the *NSW Minerals Industry Due Diligence Code of Practice for the Protection of Aboriginal Objects* published by NSW Minerals Council Ltd and based on the Due Diligence Code was gazetted as an industry specific code of practice that can be complied with pursuant to s.87 of the NPW Act.

In addition, the NPW Regulation describes “certain low impact activities” in s.80B in conjunction with the presence of disturbed land. Disturbed land is defined by cl.80B (4) as “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”. Examples given in the notes to cl.80B (4) include “construction or installation of utilities and other similar services (such as above or below ground electrical infrastructure, water or sewerage pipelines, stormwater drainage and other similar infrastructure)”.

As a desktop-only exercise, this assessment does not fulfil the minimum requirements to comply with the Code. A visual inspection of the subject area to see if Aboriginal objects can be identified, or are likely to be present below the surface, would be required to ensure compliance. As such, this assessment should be considered preliminary advice only.

6. Literature Review

Numerous heritage assessments and studies have been completed by archaeologists and heritage consultants during the last decade for development within, and in close proximity to, the subject area. A brief summary of these reports is included below to provide a context for this assessment and for our understanding of the distribution of Aboriginal sites on AHIMS.

6.1 Consultancy Reports

Collins (2004), Hearnese Lake / Sand Beach Development Control Plan - Aboriginal Heritage Assessment

In 2004 Collins conducted an archaeological survey of Lot 21 within the Hearnese Lake / Sandy Beach Development Control Plan area. The survey was attended by representatives of the Coffs Harbour Local Aboriginal Land Council (CHLALC) and Yarrawarra Aboriginal Corporation / Garby Elders. The survey followed a selective sampling strategy to maximize coverage of the various landforms represented within the study area. Exposed tracks and disturbed ground were targeted for evidence of Aboriginal stone tool manufacture. Mature trees were also inspected across the property for evidence of cultural

scarring. 12.6 hectares of land (1.3% of Lot 21) was effectively surveyed, including ridge crests, lagoon margins and alluvial lowlands.

The survey identified one low-density stone artefact scatter, roughly 500 m north-west of Lot 21. The artefacts were distributed at intervals along the length of a low-gradient crest. Given the distribution of the artefacts the landform was assessed to have potential for additional buried and/or obscured artefacts. The scatter was assessed to have low to moderate cultural and scientific significance and further archaeological investigation of the site and associated ridgeline in Lot 21 was recommended prior to the commencement of residential development.

Umwelt Environmental Consultants (2006), 'Aboriginal and Archaeological Survey and Assessment of Lot 66 DP551005, Moonee Beach NSW

In December 2006 Umwelt was engaged by Hillview Heights Estate to prepare an Aboriginal cultural heritage and archaeological assessment of a proposed subdivision for residential development of Lot 66 DP551005, Moonee Beach. The assessment was required as part of a Master Plan application to the (then) Department of Planning and Coffs Harbour City Council, under the former Part 3A of the EP&A Act. The proposal involved residential subdivision of two distinct sections within the project area, with construction requiring clearing of vegetation, installation of services and the creation of access roads within each area. A walkway between each of the two residential areas to Green Bluff was also proposed, although its design and placement was flexible.

Research on the history of the study area found that it had been subject to logging, clearing and sand mining in the past. Prior to such disturbance, the study area was found to be suitable for occupation year round. Occupation sites were predicted to be restricted to elevated, vegetated areas protected from seasonal winds, such as behind the dune system. Low lying areas were predicted to have been used during dry winter months on a temporary basis.

The site survey identified one new site (an artefact scatter on a cleared track) and two previous recorded sites (a midden and small artefact scatter). Two areas of Potential Archaeological Deposit (PAD) were also identified in a subsequent stage of field survey, on elevated land close to local water sources. Various management options for each site were presented by Umwelt, including conservation, destruction without salvage, destruction with salvage and subsurface investigations. It was recommended that the newly identified site be collected and subsurface investigation of the two areas of PAD be undertaken prior to vegetation clearance and disturbance.

Collins (2007), Lot 21 DP 714858, Hearn's Lake Road, Woolgoolga - Aboriginal Cultural Heritage Assessment

In December 2007 Collins prepared an Aboriginal Cultural Heritage Assessment of a property on Hearn's Lake Road, Woolgoolga for BBK Development Corporation, who wished to subdivide the land for residential development. The report followed the *Draft Guidelines for Aboriginal Cultural Heritage*

Impact Assessment and Community Consultation (DECC 2005) to inform an Environmental Assessment (EA) for the proposal. Project approval was sought under Part 3A of the EP&A Act (now repealed). The location of the study area in relation to the current subject area is shown in Figure 3.

The assessment involved background research, Aboriginal community consultation and field survey. The study area was found to be part of a resource-rich landscape that included traditional mythological and story places and more recent camping and resource areas. However, despite the resource-rich environment, sites recorded in Hearn's Bay were small in size and thought to be associated with temporary resource acquisition, rather than more permanent base camping.

Given the topography and landforms within the study area the ridge crest was thought to have a high potential for subsurface / buried Aboriginal objects and sites. Areas of higher ground were generally used by Aboriginal people as transport corridors between the coast and more inland sites and places of cultural significance. The ridge slopes and low lying areas, in contrast, were assessed to have a low potential for background artefact scatters or discarded isolated artefacts. Further archaeological investigation of the crest was subsequently recommended by Collins prior to the commencement of earthworks. Protection of the mythological site located within proposed allotment 28 was also recommended.

Collins (2009), Lot 21 DP 714858, Hearn's Lake Road, Woolgoolga - Aboriginal Test Excavation

Following Part 3A approval of the subdivision of Lot 21 DP714858, Collins was engaged by BBK Development Corporation to conduct archaeological test excavation of the ridge crest identified as having potential for subsurface Aboriginal sites and objects. The purpose of the test excavation was to determine if Aboriginal objects were present on the ridge crest and, if present, whether they required salvage or in-situ conservation. Given the size of the area, a sampling methodology using 2m long x 1m wide test pits was followed to ensure adequate coverage of the landform. Thirteen (13) test pits were excavated using a 3 tonne excavator, with sediments removed in 10cm spits and sieved to recover any Aboriginal cultural material. Nineteen (19) stone artefacts were recovered from the topsoil of seven (7) of the test pits. Occasional shell fragments and a number of pebble 'manuports' were also identified during the testing.

The results of the investigation revealed that the ridge crest was unlikely to have been used for sustained camping, stone reduction or food preparation. Collins concluded that the evidence indicated off-site use of the ridge by small groups engaged in resource acquisition or travelling between more permanent base camps. The assemblage recovered from testing was not stratified and had little potential to provide further insights in former Aboriginal occupation and use of the area. The site was therefore assessed to have low scientific significance. No further Aboriginal heritage constraints were identified prior to subdivision and residential development of the ridge crest. The Aboriginal

stakeholders requested that the cultural material be relocated to the proposed Habitat and Catchment Protection Area within Lot 21.

Archaeological Surveys & Reports Pty Ltd (2007), 'Management Plan for the Salvage of Artefactual Material, Lot 21 DP 1070182, Sandy Beach, North Coast, NSW'

Archaeological Surveys & Reports (ASR) were commissioned by Anthony L. Ferris on behalf of E. and E. Robinson to prepare an archaeological and cultural management plan for the documentation and collection of Aboriginal stone artefacts associated with site 'Sandy Beach AS1'. The subject site was within Lot 21 DP 1070182, located 2 km south of Woolgoolga on the northern NSW coast. The Sandy Beach AS1 site was recorded by ASR in surveys of Lot 21 SP 1070182 in April 2007. The site comprised an open artefact scatter, with 12+ artefacts scattered over a 20m x 9 m wide strip of ground within an actively eroding surface. The site was being used as a car park.

The plan recommended a methodology to follow for the recording and recovery of the artefacts, including the participation of Aboriginal representatives in the salvage process.

ERM (2007), 'The Glades' Residential Development, Moonee Beach NSW - Aboriginal Cultural Heritage Assessment

In 2007 Environmental Resources Management Australia Pty Ltd (ERM) was engaged by Rothwell Boys Pty Ltd to prepare an Aboriginal Cultural Heritage Assessment for a proposed residential community known as 'The Glades', north of Moonee Beach. The proposed development was classified as a Major Project and assessed under the former Part 3A of the EP&A Act. The location of the study area in relation to the current subject area is shown in Figure 3.

The purpose of the assessment was to *"identify and assess the Aboriginal cultural heritage of the study area and to provide recommendations for its management"* (ERM, 2007:1). The assessment involved desktop research, heritage register searches, Aboriginal community consultation, predictive modelling, a field survey and preparation of the report. A review of the environmental context of the study area demonstrated that resources were plentiful in the past with fresh water available in nearby creeks. Sources of workable stone were also present in the local area. Previous heritage assessments of the study area identified a number of stone artefact scatter and isolated finds near Skinners Creek and Moonee Creek. There was also potential for scarred trees, however, historic land uses removed much of the original vegetation and significantly disturbed surface soils.

The field survey located four (4) artefact scatters, all of which had been identified by Collins (1994) during a previous survey of the site. The sites were situated within a range of landforms, including ridgelines, flat areas and gentle slopes. Mudstone was the most common raw material worked followed by igneous, quartz, quartzite and chert. Flakes were the most common artefact type, although no formal tool types were identified with the exception of two possible hammerstones. None of the artefacts featured cortex. Areas with potential for obscured surface and subsurface artefacts included

level elevated areas close to Moonee and Skinner Creek and an area of remnant vegetation within Site 2. The distribution and pattern of artefact density was found to support Collins (1994) theory that the area had not been extensively occupied or used by Aboriginal people in the past. An area of cultural importance was also identified by the Aboriginal community above the junction of Moonee Creek and Skinners Creek.

Following an assessment of the impact of the proposal on Aboriginal heritage it was recommended that areas with potential for archaeological deposits and the area of cultural significance remain undisturbed. A number of sites were located outside the development footprint and it was recommended that they be protected during construction. Surface collection of artefacts within Site 2 and in the vicinity of Site 1 and Site 5 was also recommended prior to commencement of earthworks.

Bonhomme Craib & Associates (2009), 'A Cultural Heritage Assessment for the Proposed Residential Development at Lot 211 DP 1044292 Moonee Beach, NSW'

Bonhomme Craib & Associates (BCA) and the Coffs Harbour Aboriginal Land Council conducted a cultural heritage assessment of Lot 211, located at Moonee Beach, approximately 12 km north of Coffs Harbour. The subject area was proposed for subdivision into 35 lots. This assessment was an amendment report to an earlier assessment conducted by BCA in 2005 for the same subject area.

The subject area was located west of Woodhouse Road to the Pacific Highway Reserve, and 1 km to the west of the open beach. The area was steeply sloping to the north and cut by a small watercourse running east-west. It had been cleared of vegetation, and regrowth was occurring along the margins of the watercourse. BCA (2009: 16) concluded that if Aboriginal objects were present on the surface, they were mostly likely to be isolated finds and located on a ridge crest along the subject area boundary with adjacent Lot 18. This ridge crest had also been disturbed by previous land use activities, including cattle grazing and, more recently, by construction of houses, sheds and driveways. Subsurface potential was considered low. The general area was considered to have potential significance to Aboriginal people due to the proximity of a 'sacred site' approximately 1 km to the west of Moonee Creek.

Low visibility (10% visible ground surface) impeded the field assessment which was undertaken for the original assessment in 2005. No Aboriginal heritage sites were located. No further archaeological work was required, and a process recommended for the management any Aboriginal heritage located during future project works.

Davies Heritage Consultants Pty Ltd (2009), 'Preliminary Cultural Heritage Assessment: Northern Portion of Lot 260 DP1110719, Graham Drive, Sandy Beach, Coffs Harbour, Northern New South Wales'

Davies Heritage Consultants (DHC) were commissioned by Sandy Beach Mill Pty Ltd to prepare a preliminary desktop cultural heritage assessment in advance of the proposed subdivision of the northern portion of Lot 260 into 43 residential allotments at Sandy Beach, Coffs Harbour. The subject area

abutted the project's Stage 1 residential area to the south, swamp land to the east, Double Crossing Creek to the north, and Graham Drive to the west.

The subject area was comprised of Quaternary deposits of alluvial mud, silt, sand gravel. The majority of native vegetation had been cleared. Remaining vegetation was primarily regrowth, though older trees were located closer to the creek in the north. The subject area had previously been disturbed by construction and operations of a timber mill, which required excavation and installation of underground facilities. Much of the area had been subjected to cut and fill events. Timber Mill buildings were removed in 2006 (DHC 2009: 6). A number of Aboriginal sites had previously been recorded in proximity to the subject area, including mythological sites and a stone artefact scatter (DHC 2009: 19).

Based on the subject area environment and past land use and disturbance, DHC predicted that while the area may have been used by Aboriginal people in the past, it was unlikely that in situ surface archaeological material would be located, or that scared trees would be present (DHC 2009: 22).

Bonhomme Craib & Associates (2010), Lot 4 DP612977 Hearn's Lake Road, Woolgoolga, NSW - Proposed Land Subdivision: Part 3A project under the provisions of the State Environmental Planning Policy (Major Development 2005): Cultural Heritage Assessment

BCA were commissioned by Geoff Smyth Consulting on behalf of Woorpe Beach Pty Ltd to prepare a desktop cultural heritage assessment in advance of a proposed 98 residential lot subdivision of land at Lot 4 DP612977 located at Woolgoolga, east of the Pacific Highway, within the Coffs Harbour LGA. The subject area comprised 11.33 ha of land which was bounded by the Pacific Highway to the west, Hearn's Lake Road to the south, and a light industrial area to the north. To the east is the beach. Consultation was undertaken with the Yarrawarra Aboriginal Corporation and The Garbi Elders.

The subject area had been previously cleared for agricultural purposes, including crop cultivation. Cattle grazing had also occurred over the subject area. Previous use as a caravan park was deemed to have caused disturbance to the majority of the subject area.

BCA predicted that due to the environment of the subject area, the most likely Aboriginal sites would be isolated stone artefacts or scatters, particularly along any ridges, and middens indicating potential camp sites (BCA 2010: 11).

Archaeological Surveys & Reports Pty Ltd (2011), 'The archaeological investigation for sites of Indigenous Cultural Significance on Lot 2 DP 840016, Emerald Beach, Mid-North Coast, NSW

Archaeological Surveys & Reports (ASR) were commissioned to provide an assessment of Lot 2 DP 840016, located approximately 16 km north of Coffs Harbour, within the County of Fitzroy, but still within the Coffs Harbour Local Council area. The assessment was an update to an earlier study of the same area conducted by ASR in 1995. The purpose was to ensure compliance with then current Part 3A requirements of the EP&A Act. Representatives of the Coffs Harbour & District Local Aboriginal Land Council, Gumbular Julipi Elders, Yarrawarra Aboriginal Corporation and The Garbi Elders assisted with

the assessment. The subject area comprised 14.4 ha of proposed subdivision and upgrades to approximately 380 m of access track linking the proposed subdivision area with the Pacific Highway. The subject area had been previously cleared of vegetation with some regrowth areas, but dominated by heath, sedges and rushes. Trees had been cleared to create bullock pastures. The nearest fresh water source, Fiddamans Creek, runs parallel with the southern boundary of the subject area, though had also been previously disturbed and possibly diverted. Dunes to the east of the subject area had been previously disturbed by sand mining activities and recreational activities.

ASR predicted that it was 'unlikely' that surface evidence of past Aboriginal occupation or use of the subject area or any other Aboriginal heritage values would be found. It was also considered 'extremely unlikely' that subsurface artefact deposits would be located within the subject area. Pedestrian survey of the subject area with Aboriginal community representatives failed to locate any surface Aboriginal sites, potential archaeological deposits or other places of Aboriginal cultural significance.

Castlereagh Lachlan Environmental Services (2012), 'Aboriginal Objects Due Diligence Site Inspection & Assessment Report: Lot 1 DP 1121000 Split Solitary Road & Lot 15 DP 882816 North Sapphire Road, Sapphire Beach - Coffs Harbour LGA'.

In March 2012 Castlereagh Lachlan Environmental Services (CLES) undertook a due diligence report under the Due Diligence Code of Practice for these two lots at Sapphire Beach, 6 km north of Coffs Harbour. The assessment was undertaken as the subject area was proposed for subdivision into 26 residential lots. A representative of the Coffs Harbour & District Local Aboriginal Land Council participated in the assessment. The subject area comprised of low hill slopes and a flattened hill crest associated with the eastern margin of the Coast Ranges immediately west of the major settlements of the Coffs Harbour area (CLES 2012: 5). The geology and soils within the subject area were noted as of 'high erodibility' (CLES 2012: 5), and vegetation had been completely modified due to historic use of the area for logging, as a banana plantation, dairy farm and most recently, residential purposes.

Regardless of the degree of past disturbance note, the presence of a known Aboriginal site within 1 km of the subject area and consideration of potential cultural landscape elements, CLES assessed the potential of the subject area to contain Aboriginal heritage to be 'moderate' (CLES 2012: 17). Pedestrian survey did not locate any Aboriginal objects. However, the northern sections of the subject area were identified by LALC participant as an area of potential archaeological deposit. Following additional analysis of the information available about the subject area, this was discounted by CLES (CLES 2012: 22). No further Aboriginal heritage assessment was recommended, though a risk management strategy was proposed to management the inadvertent discovery of Aboriginal heritage during any future site works.

Myall Coast Archaeological Services (2013), 'Lot 1 DP1097743 and Lot 6 DP252223, Pacific Highway, Moonee Beach, NSW'- Aboriginal Heritage Assessment

Myall Coast Archaeological Services was commissioned by JW Planning in 2013 to prepare an Aboriginal Cultural Heritage Assessment of proposed residential development of two allotments on the Pacific Highway at Moonee Beach (Lot 1 DP1097743 and Lot 6 DP252223). The proposed development was classified as a Major Project and the assessment was required under former Part 3A of the EP& A Act. Despite the requirement for both allotments to be assessed, only Lot 1 was surveyed, “*access to Lot 6 was not available*” (Myall Coast Archaeological Services, 2013:2). The location of the study area in relation to the current subject area is shown in Figure 3.

The assessment involved a desktop review of relevant literature, predictive modelling, an archaeological survey and consultation with the local Aboriginal community. Its aim was to “*identify the Aboriginal heritage and archaeological values of the proposal site in particular and the entire study area in totality and the potential impacts on those values as a result of the proposal*” (Myall Coast Archaeological Services, 2013:2). The study area was described as being disturbed rural land used for grazing and timber getting and contained a small elevated crest overlooking an estuarine floodplain.

The results of the desktop assessment found that Aboriginal base camps in the general region were located close to freshwater and food sources on higher ground, with trails between camps following creeks and ridgelines. It was predicted that elevated areas overlooking estuarine swamps or creeks in the Moonee Beach area were favoured for short term occupation or foraging and that Aboriginal objects may be found in topsoils on such crests. Soils in the area were identified as being sandy clay and loam. The potential for stratified archaeological deposits was considered to be low.

One artefact scatter was identified during the field survey of Lot 1. The scatter was found on a gravel road and, after careful inspection, was assessed to be imported as part of the driveway fill. No areas of archaeological or cultural significance were identified within the study area. Despite the imported nature of the identified artefacts, it was recommended that a management plan be prepared for the artefact scatter. Further consultation with the local Aboriginal community throughout the duration of the project was also recommended.

ATT1C Aboriginal Heritage Report

The map displays the Moonie Beach area, showing Prior Heritage Surveys (blue hatched areas) and LEP 2013 Draft Deferred Areas (red outlined areas). The map includes labels for roads, beaches, and reserves.

Legend:

- Prior Heritage Surveys
- LEP 2013 Draft Deferred Areas

Scale: 0 0.5 1 km

North Arrow: N

Coordinate System: GDA 1994 MGA Zone 56

Sources: Esri, DeLorme, NAVTEQ, USGS, Intermap, IPC, NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, 2013

FIGURE 3

7. Heritage Register Search Results

7.1 Commonwealth Registers

National Heritage Registers

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) establishes two registers for listing exceptional natural and cultural places that contribute to Australia's national identity - the National Heritage List (NHL) and the Commonwealth Heritage List (CHL).

The NHL provides protection to places of cultural significance to the nation of Australia. The EPBC Act requires that approval be obtained before any action takes place that could have a significant impact on the national heritage values of a NHL place. The CHL is a list of natural, Aboriginal and historic heritage places owned and controlled by the Commonwealth.

The Register of the National Estate (RNE) is an archive of heritage places and items that were listed under the *Australian Heritage Commission Act 1975* (repealed). There are no statutory management constraints associated with listing on the RNE which now serves as an advisory and educational archive. There are no management constraints associated with listing on the Register of the National Estate unless the listed place is owned by a Commonwealth agency.

- ☐ Searches of the NHL, CHL and RNE were undertaken on 1 November 2013. No listed places were identified within the subject area.

7.2 State Registers

Extensive AHIMS searches were conducted on 16 September 2013 (AHIMS IDs 111699 and 111703; Appendix 1) for the Subject Area and surrounds. The search included an area covering approximately 30km². The searches identified 96 previously recorded Aboriginal sites of which 28 are located within the subject area (Table 1) (Figure 5).

Table 1: AHIMS sites located within the Subject Area (Source: AHIMS)

Site ID	Site Name	Site Type	Landform	Distance to water	Slope
22-1-0072	DH 2;Moonee (Site 2)	Open Camp Site	Upper slope	10	Moderate
22-1-0074	DH 4;Moonee (Site 5)	Open Camp Site	Gentle slope	75	Low
22-1-0075	DH 6;Moonee;	Open Camp Site	Flat	750	Flat
22-1-0118	Moonee Caravan Park 2	Open Camp Site	Estuary bank	2000	Flat
22-1-0166	ISF 2 + PAD	Isolated Find, PAD	Data unavailable		
22-1-0167	ISF 1	Isolated Find	Data unavailable		
22-1-0168	MSB2 + PAD	Open Camp Site, PAD	Data unavailable		
22-1-0194	MSB4 Moonee Beach	PAD	Data unavailable		
22-1-0198	Moonee Beach_03	Open Camp Site, Resource Area	Upper slope	100	Unstated
22-1-0232	HL-2	Natural Mythological (Ritual)	Dune	0	Flat
22-1-0234	HL-1	Natural Mythological (Ritual)	Crest	300	Flat
22-1-0296	Sugar Mill Creek 2 (SMC 2)	Open Camp Site	Mid slope	4000	Flat
22-1-0299	Site 1 Rothwell Boys	Open Camp Site	Ridge	0	Unstated
22-1-0359	Hearn Rd Lot 21 Ridge Site	Open Camp Site	Upper slope	100	Flat
22-1-0360	Sandy Beach AS1	Open Camp Site	Crest	600	Unstated
22-1-0361	Sandy Beach IF1	Isolated Find	Lower slope	500	Flat
22-1-0362	Sandy Beach AS2	Open Camp Site	Lower slope	500	Flat
22-1-0363	HL-4	Isolated Find			
22-1-0374	S2W-15	Isolated Find	Valley flat	150	Flat
22-1-0385	SBN1	Open Camp Site	Flat	100	Flat
22-1-0386	SBN2	Open Camp Site	Flat	250	Flat
22-1-0387	SB ISF2	Isolated Find	Lake foreshore	100	Flat
22-1-0388	PAD1 (Moonee Beach)	PAD	Flat	250	Flat
22-1-0413	Moonee Beach Road Seddon 2	Open Camp Site	Data unavailable		
22-1-0414	Moonee Beach Road Seddon 3	Isolated Find	Data unavailable		
22-1-0415	Moonee Beach Road Seddon 4	Open Camp Site	Data unavailable		
22-1-0416	Moonee Beach Road Seddon_1	Isolated Find	Data unavailable		
22-4-0138	Moonee Beach RD Seddon1	Isolated Find	Undulating hills	2000	steep

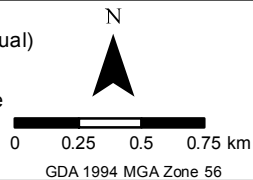
Drawn by: RJ Project Manager: FJL Date: 30/10/2013



- LEP 2013 Draft Deferred Areas
- AHIMS 2013-09-16
- Burial
 - Isolated Find

- Isolated Find, Burial
- Midden
- Midden, Natural Mythological (Ritual)
- Midden, Open Camp Site

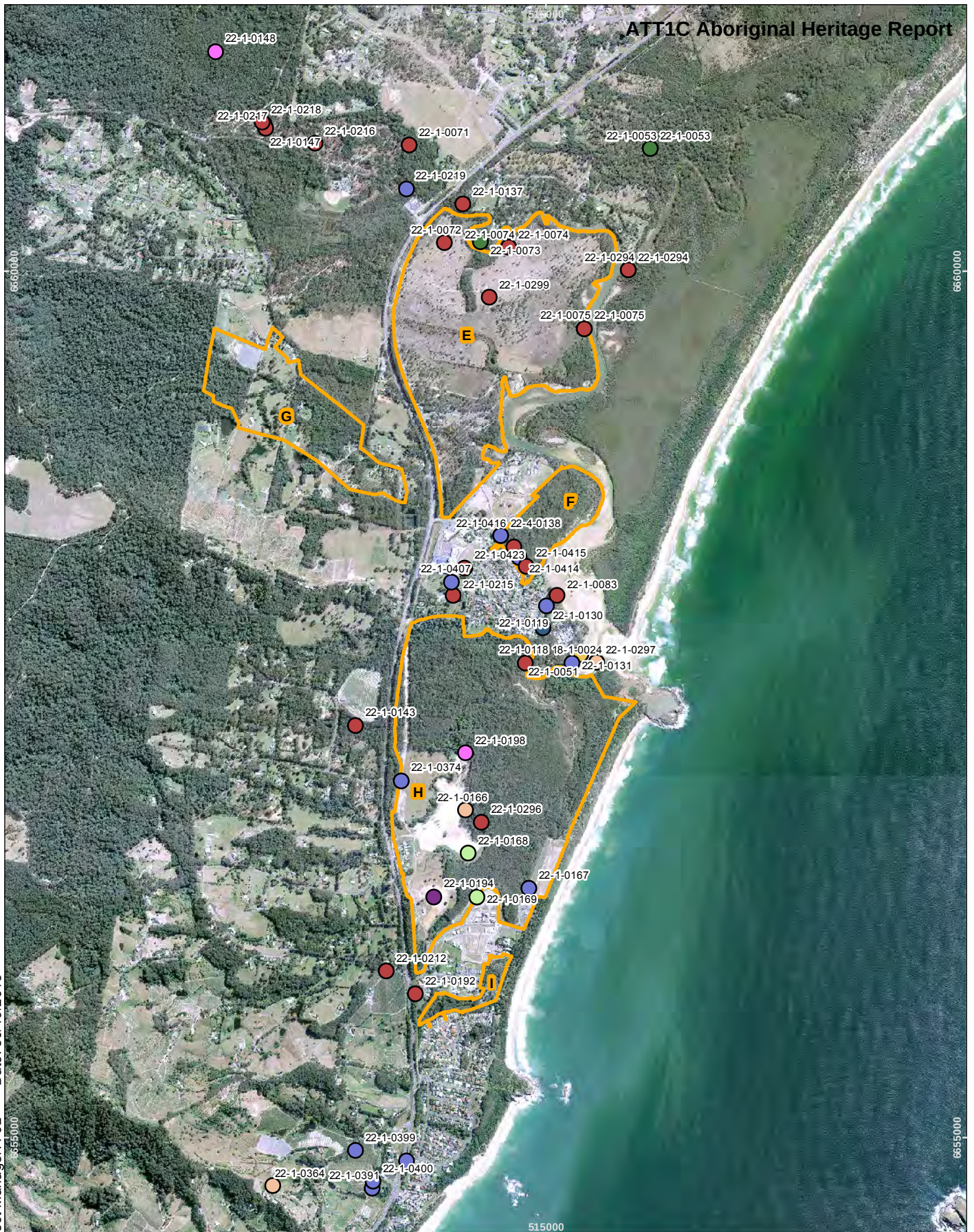
- Natural Mythological (Ritual)
- Open Camp Site
- Open Camp Site, Art Site
- PAD



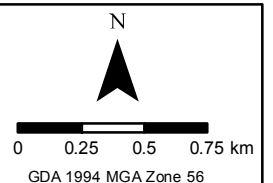
AHIMS Data Search Results: North
Coffs Harbour – Desktop Aboriginal Heritage Assessment

FIGURE 4

Drawn by: RJ Project Manager: FJL Date: 30/10/2013



- | | | |
|---|---|--|
| <ul style="list-style-type: none"> LEP 2013 Draft Deferred Areas AHIMS 2013-09-16 ● Isolated Find ● Isolated Find, PAD | <ul style="list-style-type: none"> ● Midden ● Open Camp Site ● Open Camp Site, Midden ● Open Camp Site, PAD | <ul style="list-style-type: none"> ● Open Camp Site, Resource Area ● PAD ● Scarred Tree |
|---|---|--|



AHIMS Data Search Results: South
Coffs Harbour – Desktop Aboriginal Heritage Assessment

FIGURE 5

8. Environmental Context

8.1 Soils, Geology and Topography

The subject area is located on a low lying coastal plain, bounded to the west by low foothills. Sediments in the area range from Quaternary alluvial sand, silts and clays along the plain to Palaeozoic Coramba Beds in the foothills containing greywacke, siliceous claystone, quartzite and chert (Dept. Mineral Resources 1992). Soil landscapes range through beaches (Coffs Harbour soil landscape), estuaries (Toormina soil landscape), swampland (Newport's Creek soil landscape) and erosional zones (Megan, Ulong and Look-At-Me-Now soil landscapes) (NSW Govt. Trade and Investment 2013). Chert and greywacke were often used in the production of stone artefacts, with chert pebbles commonly found along the coastline and in creek lines. Outcrops of greywacke are found to the south of the subject area around Coffs Harbour.

The topography increases steadily to the west, rising to 200-300m within 2km of the coastline in the south and within 4.5km in the north of the subject area. The coastal plain, while undulating, is generally of low relief, being less than 25m AHD in most areas. The relief of the undulating landscape is correlated with movement west, where ridgelines and spurs dominate.

8.2 Hydrology

There are several permanent water courses both within and bounding the subject areas. In the north, Double Crossing Creek runs west-east along the borders of the three northern subject areas. Double Crossing Creek is a fourth order stream, representing a permanent source of fresh water throughout the year as well as other resources such as fish and muscles. An unnamed second order creek runs through the central subject area, located to the west of Emerald Beach. Skinners Creek, a third order stream, is found in the southern-central region of the subject areas, running west-east towards to coast. Again, it is likely that Skinners Creek would have provided a permanent source of fresh water. Cunninghams creek runs through the south-western subject area. As a third order creek, it would likely have provided water and resources. Moonee Creek, located in the south-eastern portion of the subject area, is tidal, thus not consistently providing drinkable water. Finally, Sugarmill Creek is a fifth order stream, running in the south of the subject areas.

Prior to draining the region, swamp lands would most likely have constituted the most reliable source of water. Aquatic resources such as fish, amphibians and bird life would have also been a characteristic of these areas. Hearn's Lake, located in the north of the subject area, is also tidal.

8.3 Flora and Fauna

Most of the subject area has been cleared of its native vegetation, dominated by low closed grasslands. Areas of remnant vegetation include discrete regions of dry open forest dominated by blackbutt (*Eucalyptus pilularis*), stringybark (*E. planchoniana* and *E. tindaliae*), swamp mahogany (*E. robusta*), bush turpentine (*Syncarpia glomulifera*), grey ironbark (*E. sideropholia*) and pink bloodwood (*Corymbia intermedia*) (ERM 2009). Open swamp forest is found creeklines and is dominated by paperbark tea-tree (*Melaleuca quinquenervia*), Sieber's paperbark (*Melaleuca sieberi*) and swamp oak (*Casuarina glauca*). Swampy mangrove communities and areas of wetland vegetation are present in small areas within and surrounding the subject area.

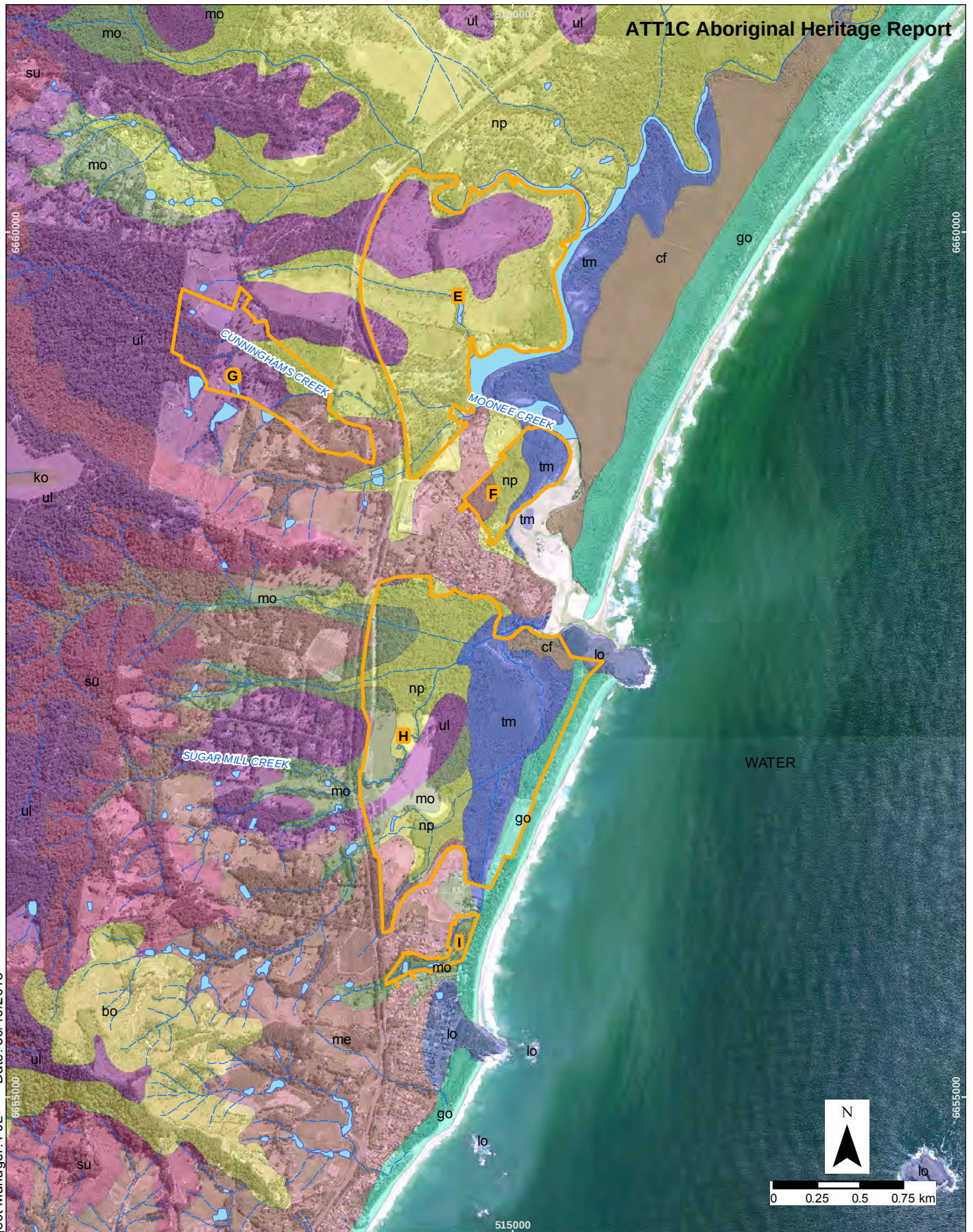
 LEP 2013 Draft Deferred Areas	 GOOLAWAH, BEACH, go	 NEWPORTS CREEK, SWAMP, np
Soil Landscapes 100k	 KOORALBYN, TRANSFERRAL, ko	 SUICIDE, COLLUVIAL, su
 COFFS HARBOUR, AEOLIAN, cf	 LOOK-AT-ME-NOW, EROSIONAL, lo	 TOORMINA, ESTUARINE, tm
 DISTURBED TERRAIN, DISTURBED TERRAIN, xx	 MEGAN, EROSIONAL, me	 ULONG, EROSIONAL, ul
	 MOONEE, TRANSFERRAL, mo	

GDA 1994 MGA Zone 56

Coffs Harbour – Desktop Aboriginal Heritage Assessment

FIGURE 6

Drawn by: RJ
Project Manager: FJL
Date: 30/10/2013

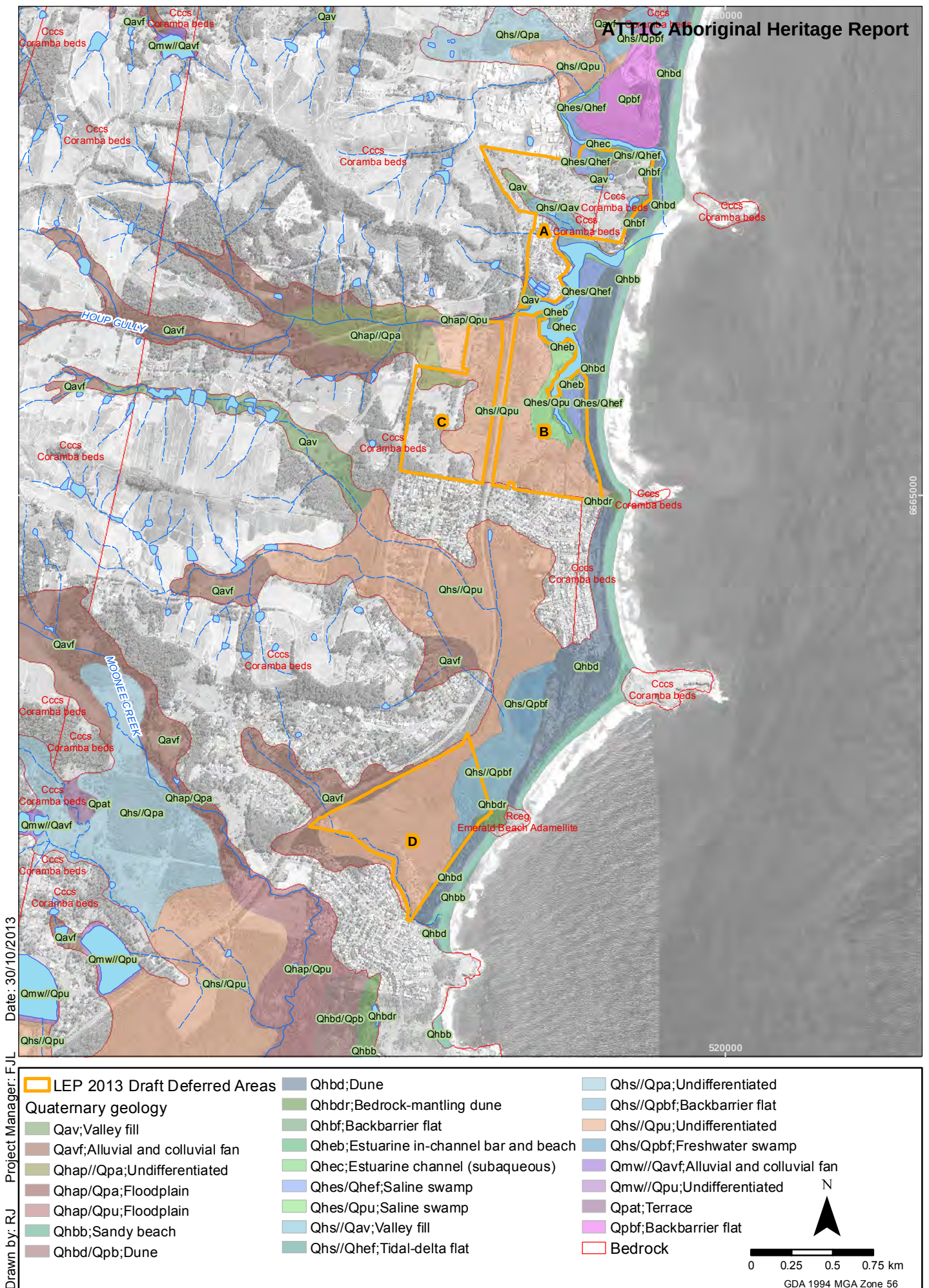


- | | | |
|---|--|--|
| LEP 2013 Draft Deferred Areas | GOOLAWAH, BEACH, go | NEWPORTS CREEK, SWAMP, np |
| BOBO, COLLUVIAL, bo | KOORALBYN, TRANSFERRAL, ko | SUICIDE, COLLUVIAL, su |
| COFFS HARBOUR, AEOLIAN, cf | LOOK-AT-ME-NOW, EROSIONAL, lo | TOORMINA, ESTUARINE, tm |
| | MEGAN, EROSIONAL, me | ULONG, EROSIONAL, ul |
| | MOONEE, TRANSFERRAL, mo | |

GDA 1994 MGA Zone 56

Soil Landscapes and Hydrology - South
Coffs Harbour – Desktop Aboriginal Heritage Assessment

FIGURE 7



Geology and Hydrology - North

Coffs Harbour – Desktop Aboriginal Heritage Assessment

FIGURE 8



9. Ethnohistorical Context

Early ethnohistoric accounts suggest that the broader Coffs Harbour region was inhabited by people of the Kumbainggiri or Gumbaynggir language group, which spread from the lower Nymboida River to Urunga and Bellingen, along the coast from Nambucca Heads to Woolgoolga and inland to South Grafton (Tindale 1974).

Population densities prior to European contact and settlement are likely to have been variable, based on the comparative availability of resources. Ethnographically, it has been noted that European diseases had a heavy impact on both the overall population of the region and densities within smaller local areas (Butlin 1982).

Ethnohistoric accounts describe the use of a broad variety of animal resources including kangaroo, possum, snake, lizard, a variety of birds, echidna, flying foxes, fish (marine, estuarine and saltwater species) and shellfish (Ryan 1964). Plants were also used for food and medical purposes and as a source of raw materials for the manufacture of items such as string, fishing line, canoes, shelters, weapons and storage implements (Ryan 1964).

10. Modern Land Use History

The region has been utilised for a number of purposes, including settlements, infrastructure, recreation and agriculture. Agricultural uses dominated during the historic period, with settlement sizes and densities increasing significantly since the 1960s. Infrastructure development is associated with this trend, with roads and subsurface pipelines being laid in response to increased demand. Recreational facilities, such as golf courses, have developed to accommodate a growing retiree population since the 1980s.

Despite these developments, large sections of the coastal plain remain intact, with the native vegetation having had very little disturbance. Evidence of this can be seen in aerial photographs of the region from 1926, 1964, 1975, 1984 and 1994 (Plate 1). The coastal dune systems, located within approximately 150m of the beach, appear to have been largely preserved, with little evidence for vegetation clearance or major subsurface impacts.

Within the subject area itself, disturbance appears to have been limited to vegetation clearance and some minor residential/ structural development. The extent of disturbance would be variable and dependant on the type of impact. For example, vegetation clearance of coastal, shallow rooted trees would have less impact at even shallow depths than the installation of below-ground utility infrastructure which requires deep trenching.

While past vegetation clearance practices are likely to have caused impacts to Aboriginal objects within the subject area, it is still possible that Aboriginal objects would still be found in those areas. The significance of objects found in such disturbed contexts may, however, be reduced.

The impacts of residential development, and any associated infrastructure installations, are likely to have caused substantial impacts to any Aboriginal objects, including complete destruction or loss.

Table 2 illustrates the disturbance typical to each of the nine Deferred Areas. Vegetation clearance is common to all Deferred Areas other than Deferred Area F where no disturbance is evident from the data available. An average of 44% of all Deferred Areas have been effected by some level of disturbance, ranging from 5% to 90%, as identified from modern aerial imagery.

Table 2: Disturbance characteristics and approximate area effected for each of the Deferred Areas.

Deferred Area	Disturbance Type	Approximate % of Deferred Area effected
A	Vegetation clearance; residential infrastructure and associated utilities; roadways	80%
B	Vegetation clearance	30%
C	Vegetation clearance; residential infrastructure and associated utilities; roadways	80%
D	Vegetation clearance; residential infrastructure and associated utilities; roadways	10%
E	Vegetation clearance	90%
F	None evident	0%
G	Vegetation clearance; residential infrastructure and associated utilities; roadways	80%
H	Vegetation clearance; residential infrastructure and associated utilities; roadways	20%
I	Vegetation clearance	5%

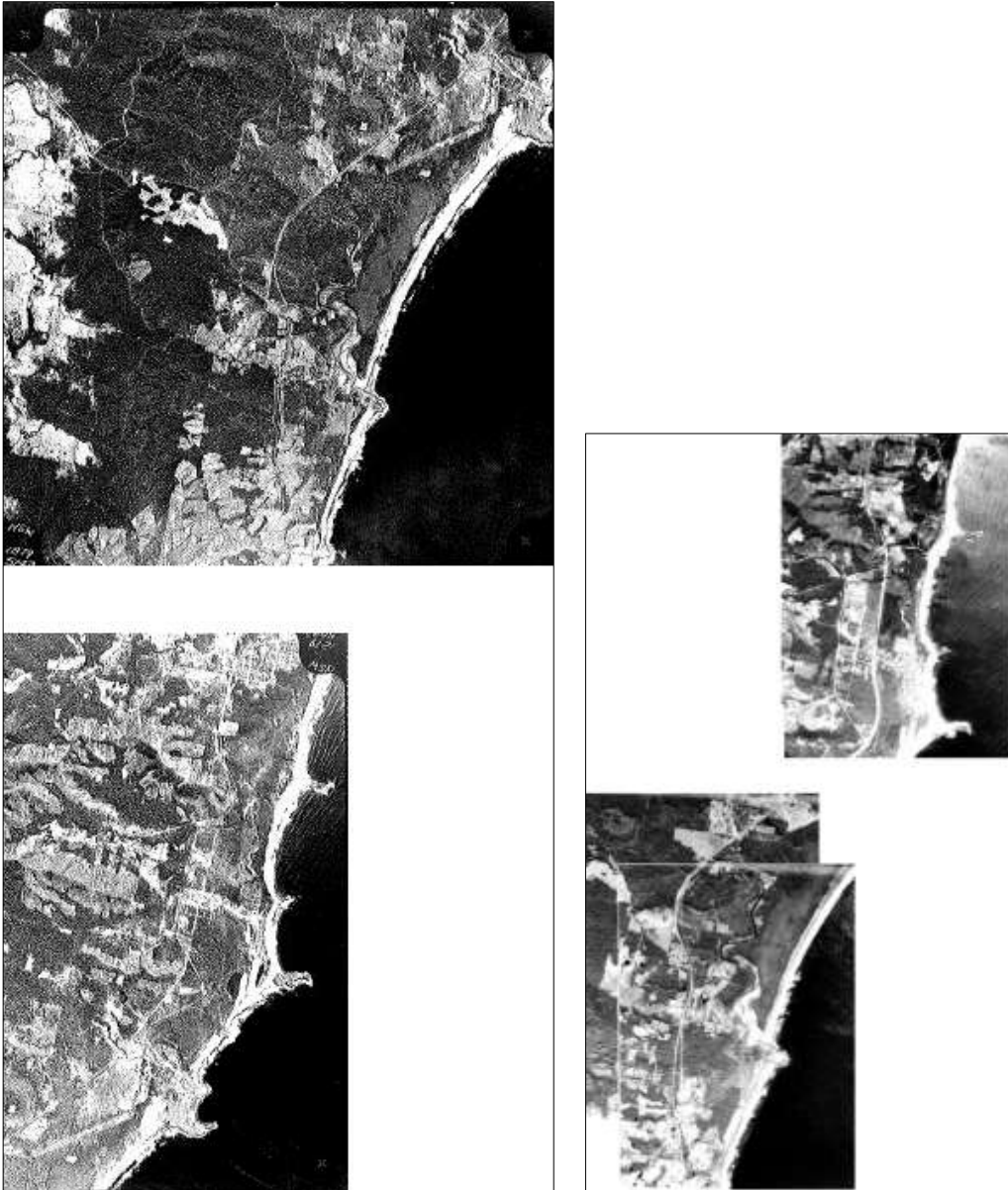


Plate 1: The subject area in 1964 (left) and southern half in 1984 (right). Source: NSW LPID.

11. Discussion & Predictive Model

As identified within Section 7.2, the most common site types within the subject area is lithic sites (open artefact scatters [$n=15$, 50%] and isolated finds [$n=8$, 6.7%]), representing 76.7% of all sites. Other site types, such as potential archaeological deposits and ritual sites, are also found throughout the Deferred Areas, but in significantly fewer numbers. Aboriginal sites are most commonly located within 200m of water ($n=9$, 47.4%), on slopes ranging from flats ($n=13$, 81.6%) to steep ($n=1$, 6.3%). The majority of registered sites have been located on flats ($n=6$, 31.6%).

These characteristics suggest that additional Aboriginal archaeological sites will most likely be located on flats and slopes within 200m of permanent fresh water. Further, due to the relatively intact nature of the beach dune system, site types such as middens or burials may also be located within 200m of the beach front. Due to the sandy nature of the soils within the subject area, burials may be present throughout, although in other coastal regions are more typically focussed within preserved dunes. Site types such as grinding grooves and rock shelters are unlikely to occur within the subject area due to the absence of necessary geological features, such as sandstone platforms. Although scar trees (trees which have had bark removed by for the creation of canoes, shields, containers, etc.) may occur within the Deferred Areas where vegetation clearance has not occurred, they are unlikely due to the absence of vegetation types that are known to be favoured by Aboriginal people, such as large eucalypts.

Modern land use history indicates variable disturbance throughout the subject area, including vegetation clearance, residential infrastructure and associated utilities and roadways. When this is combined with information on soil types, hydrology and the distribution of registered Aboriginal archaeological sites, a predictive model can be described for each Deferred Area (Table 3).

Table 3: Predicted site types and associated landforms for each of the nine Deferred Areas.

Deferred Area	Predicted Site Types (in order of potential)	Associated Landforms
A	Open artefact scatters; isolated finds; ritual/anthropological sites; middens; burials	Undulating flats; slopes; dune systems
B	Open artefact scatters; isolated finds; ritual/anthropological sites; middens; burials	Undulating flats; slopes; dune systems
C	Open artefact scatters; isolated finds; middens; burials	Undulating flats; slopes; dune systems
D	Open artefact scatters; isolated finds; middens; burials	Undulating flats; slopes; dune systems
E	Open artefact scatters; isolated finds; middens; burials	Undulating flats; slopes
F	Open artefact scatters; isolated finds; middens; burials	Undulating flats; slopes; river terraces and alluvial flats
G	Open artefact scatters; isolated finds; middens; burials	Undulating flats; slopes; river terraces and alluvial flats
H	Open artefact scatters; isolated finds; middens; burials	Undulating flats; slopes; dune systems
I	Open artefact scatters; isolated finds; middens; burials	Undulating flats; slopes; dune systems

In summary, lithic site types are the most likely to occur within the subject area, particularly in areas where ground surface visibility is good - such as areas of cleared vegetation. Burials may also be present throughout the subject area where there exists a sandy substrate, however are more likely to be located within the preserved dune systems located within 200m of the beach fronts. Despite the

disturbance evident within the subject area, Aboriginal archaeological sites are still likely to occur, as demonstrated by the presence of recorded sites on the AHIMS register.

11.1 Results

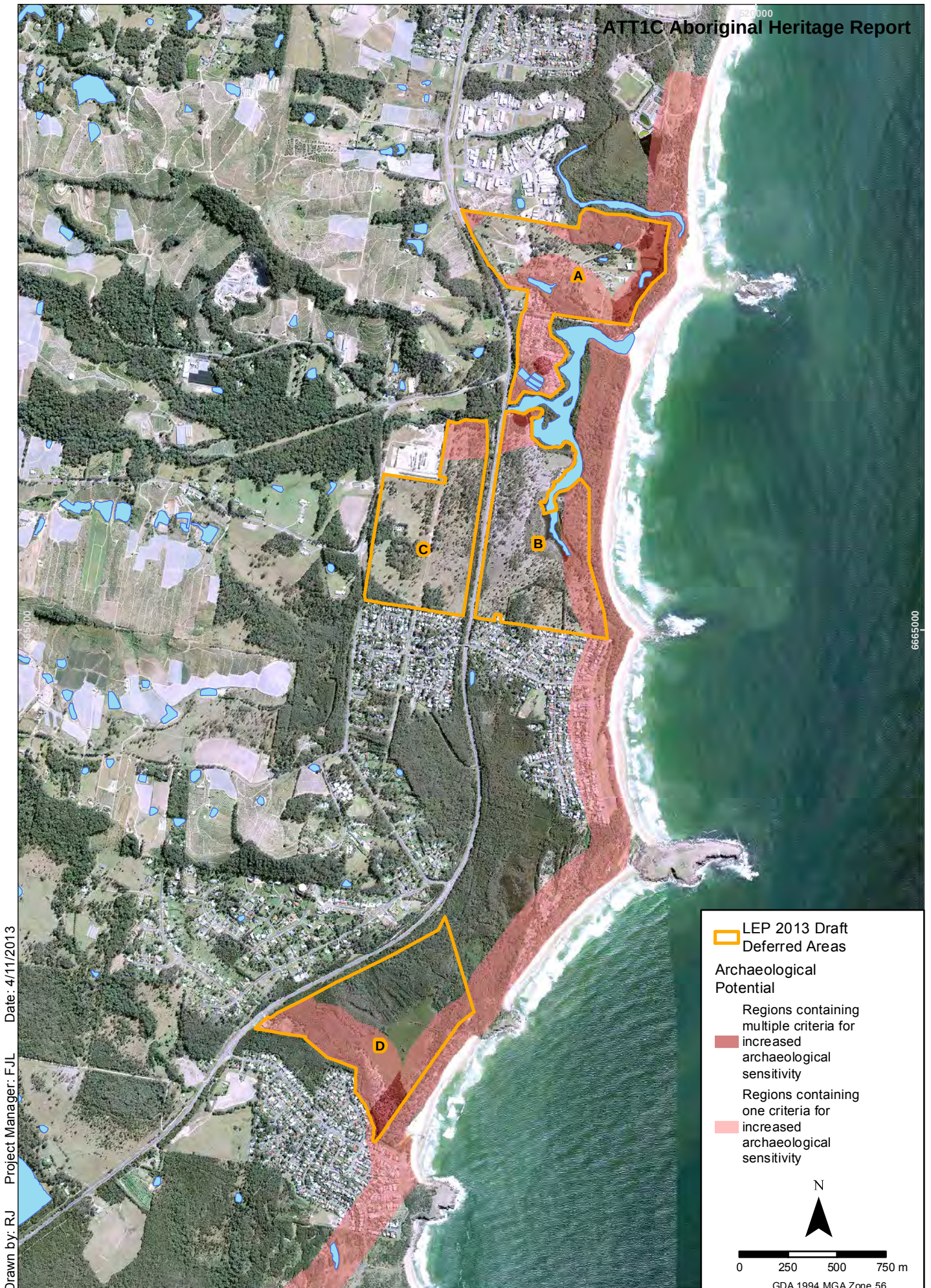
Based on our understanding of the environmental and cultural contexts, the following criteria have been determined to define archaeological sensitivity within the Deferred Areas:

- ☐ Those areas within 200m of creek lines or coastal dune systems,
- ☐ Within close proximity (50m) to known archaeological sites, and
- ☐ Those areas which demonstrate minimal ground disturbance (e.g. no residential or infrastructure development).

The results of our analysis of the Deferred Areas against these criteria are illustrated in Figure 10 and Figure 11.

Those portions of land that meet one criterion are represented as a '*Region containing one criteria for increased archaeological sensitivity*'.

Lands that meet more than one criteria are represented as a '*Region containing multiple criteria for increased archaeological sensitivity*'.

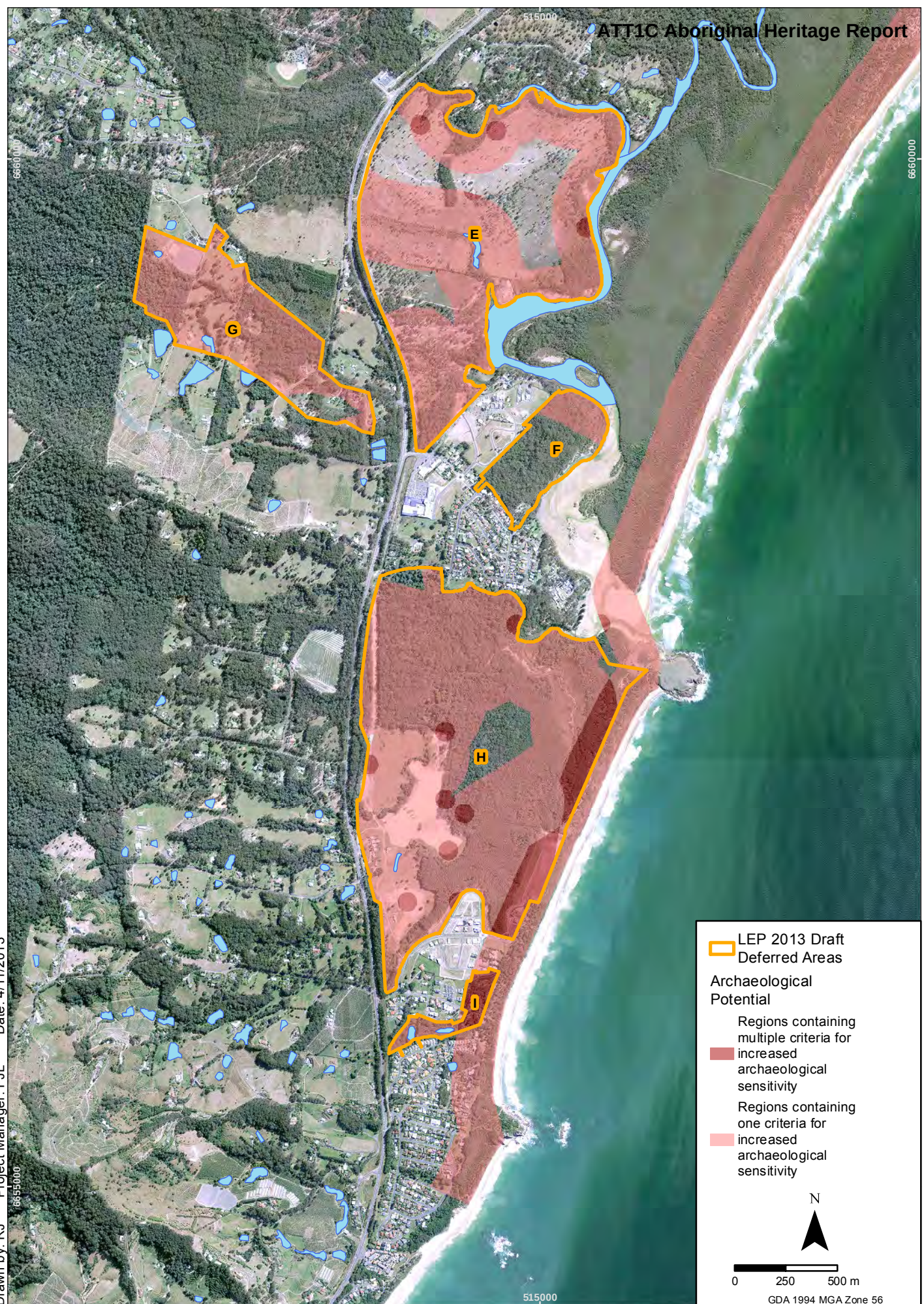


Archaeological Potential - North

Coffs Harbour – Desktop Aboriginal Heritage Assessment

FIGURE 10

Drawn by: RJ Project Manager: FJL Date: 4/11/2013



LEP 2013 Draft
Deferred Areas

Archaeological
Potential

Regions containing
multiple criteria for
increased
archaeological
sensitivity

Regions containing
one criteria for
increased
archaeological
sensitivity

N

0 250 500 m

GDA 1994 MGA Zone 56

Archaeological Potential - South
Coffs Harbour – Desktop Aboriginal Heritage Assessment

FIGURE 11

12. Conclusions and Recommendations

Additional Aboriginal archaeological sites are likely to occur within the subject area, given the high number of previously identified sites and the relative integrity of landforms evident through the available data. Regions considered more likely to contain Aboriginal archaeological sites are shown in Figure 10 and Figure 11. Regions containing multiple criteria have increased archaeological sensitivity.

It is recommended that with any further development of the sites, a visual inspection be undertaken to accompany this report. This would provide greater understanding of the integrity of landforms within the subject area and further refine the predictive model, particularly in relation to subsurface potential. Such investigations should involve consultation with the Local Aboriginal Land Council at the minimum.

No ground disturbance works should be undertaken without additional Aboriginal cultural heritage assessment, which may require consultation with representatives of the local Aboriginal community.

13. References

Collins, J. 2004. '*Hearnes Lake / Sand Beach Development Control Plan - Aboriginal Heritage Assessment*'. Unpublished report.

Collins, J. 2007. '*Lot 21 DP 714858, Hearnes Lake Road, Woolgoolga - Aboriginal Cultural Heritage Assessment*'. Unpublished report.

Collins, J. 2009. '*Lot 21 DP 714858, Hearnes Lake Road, Woolgoolga - Aboriginal Test Excavation*'. Unpublished report.

Department of Mineral Resources. 1992. Dorrigo-Coffs Harbour 1:250,000 Geological Map Sheet.

ERM. 2009. '*The Glades*' Residential Development Moonee Beach NSW Aboriginal Cultural Heritage Assessment. Unpublished report to Rothwell Boys Pty Ltd.

Myall Coast Archaeological Services. 2013. '*Lot 1 DP1097743 and Lot 6 DP252223, Pacific Highway, Moonee Beach, NSW- Aboriginal Heritage Assessment*'. Unpublished report.

NSW Govt. Trade and Investment. 2013. Geoscientific data warehouse:

<http://dwh.minerals.nsw.gov.au/CI/warehouse?minx=153&miny=-30.5&maxx=153.5&maxy=-30>

OEH 2010a. *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*. Available online at: <http://www.environment.nsw.gov.au/licences/archinvestigations.htm>

OEH 2010b. *Aboriginal cultural heritage consultation requirements for proponents 2010* (OEH 2010). Available online at: <http://www.environment.nsw.gov.au/licences/consultation.htm>

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

Umwelt Environmental Consultants. 2006. '*Aboriginal and Archaeological Survey and Assessment of Lot 66 DP551005, Moonee Beach NSW*'. Unpublished report.