

ABORIGINAL CULTURAL HERITAGE AND ARCHAEOLOGICAL ASSESSMENT REPORT

Residential Development Planning
Proposal - Stockton Rifle Range, Stockton
NSW

FINAL

June 2017



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Stockton Rifle Range, Stockton NSW

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Prepared by
Umwelt (Australia) Pty Limited
on behalf of
Defence Housing Australia

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Report No. 3772/R02
Date: June 2017



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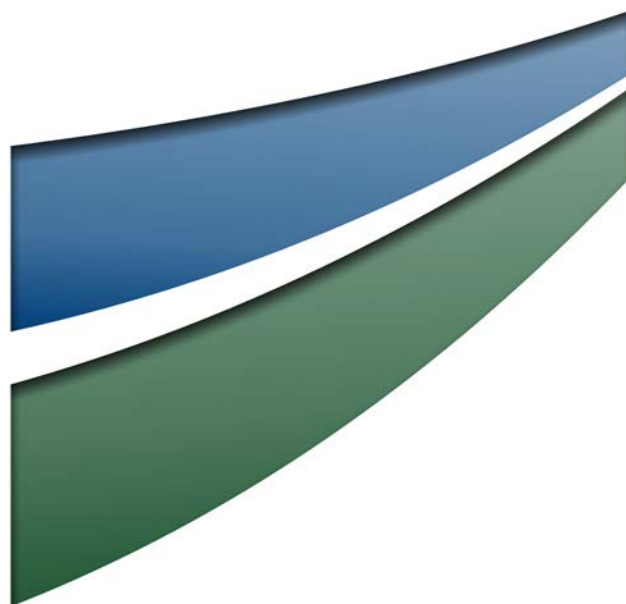
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Executive Summary



Defence Housing Australia (DHA) purchased from the Department of Defence the Fort Wallace and Stockton Rifle Range sites to facilitate the development of the properties for residential use by Australian Defence Force personnel and private individuals. Umwelt (Australia) Pty Limited (Umwelt) has been commissioned by DHA to prepare an Aboriginal Cultural Heritage and Archaeological Assessment for a rezoning application for the Stockton Rifle Range boundaries within Lot 5 DP233358 and the subsequent residential development of the site (the project area) in Fern Bay, NSW (refer to **Figure 1.1**). It is proposed to rezone a portion of the project area from the current SP2 Defence to R1 General Residential under the Port Stephens Local Environmental Plan (LEP) 2013 to allow for the residential subdivision.

DHA has an ongoing requirement for additional housing in the Newcastle area to cater for Newcastle-based Defence members and their families and to replace existing DHA dwellings that do not meet current standards. The proposed Master Plan is prepared to demonstrate how the site could appropriately facilitate a residential development and includes a mix of residential typologies primarily placed within the former Stockton Rifle Range footprint (refer to **Figure 1.2**). The Master Plan has sought to retain the Stockton Rifle Range landscape and focus development within the previously disturbed areas of the site.

Aboriginal party consultation for the Project was conducted in accordance with the Office of Environment and Heritage's Aboriginal Cultural Heritage Consultation Requirements for Proponents (Office of Environment and Heritage 2010). Five Aboriginal organisations registered for consultation for the Project. These parties have been consulted

regarding the assessment strategy and draft assessment report and four groups who registered early in the process were invited to participate in a field survey for the Project. All of the registered Aboriginal parties were invited to an onsite meeting during the review period of the draft report to discuss the conclusions and recommendations of this report.

The proposed development area includes a portion of the Fern Bay site complex (38-4-0895) and six sites (burials (recorded at incorrect coordinates, since corrected on AHIMS refer to **Section 5.4.2.3**) and artefact scatters). A further seven sites (artefact scatters, shell middens and an artefact reburial site) are located within the property boundary outside of areas of proposed impact. The Fern Bay site complex consists of middens, artefact scatters and isolated finds. The site card noted that traditional knowledge records the presence of ceremonial sites and traditional burials within the site area. Based on the review of archaeological context, it is likely that further artefacts and shell will occur within the site complex. The extent of historical disturbance associated with the establishment and ongoing use of the Rifle Range has impacted much of the project area and is likely to have also impacted any sub-surface deposits that may be present within the disturbed areas. However, outside the disturbance footprint (that is, where sub-surface disturbance does not extend to the depth of deposits), it is possible that intact or partially intact deposits may be present. The artefact reburial site is the artefacts that were collected during the monitoring of decommissioning works undertaken by the Department of Defence in 2008.

A field survey was conducted on the 21 September 2016 of the areas of pedestrian accessibility. In the

southern end of the former Rifle Range many of the recorded sites were inaccessible due to dense vegetation. Eleven new sites were recorded (detailed in **Section 5.4.1** and **Figure 5.2**). The high level of surface disturbance that has affected the distribution of surface sites within the former rifle range and obscured the natural landforms of the area has restricted the ability to identify specific areas of archaeological potential. However the archaeological pattern for the area demonstrates that artefacts can be present at depth throughout the Fern Bay area and it is possible that deposits may be present below the current depth of disturbance.

Registered Aboriginal parties identified the area to the north of the central access road as a culturally sensitive area that needs to be protected in order to protect story lines. The Aboriginal parties identified that, due to the high values, no development should occur in this area except facing Popplewell Road in line with existing houses. The area in the south west corner of the site was identified by the Aboriginal parties as the correct locations of the recorded burials that also requires protection. Similarly, the Aboriginal parties identified that the burial reported at the intersection of Braid Road and Popplewell Road should be avoided and this intersection should not be used for access into the development. The entire area was identified as important as a part of the Fern Bay site complex. The registered Aboriginal parties provided detail for mapping to outline cultural sensitivity and recommendations (refer to **Figure 2.1**).

The recommendations presented below were provided by registered Aboriginal party representatives participating in the survey.

- No development should occur on the north side of the current access road that runs through the project area including no establishment of roads. The only residential construction that may be permissible in this area should occur on the current Popplewell Road frontage.
- The south western corner of the project area is the location of previously recorded burials and the reburial of artefacts collected during Defence remediation works. No impact should occur in this area.
- Surface collection of all sites to be impacted should be undertaken.
- Due to the dense vegetation during the survey the vegetation should be removed with rubber tracked machinery (or burnt) and further survey and

recording and collection of any sites discovered should occur.

- Excavation of test pits to investigate the sites identified.
- Full salvage excavation of the development footprint where excavations to the natural ground surface will occur including structural supports and drainage.
- The artefacts could be potentially stored at Worimi LALC with the artefacts to be reburied when works are completed.

The following recommendations have been developed in light of the archaeological context of the region, the findings of the survey, the archaeological assessment of the project area, the cultural assessment of the area by Aboriginal parties; the potential impacts of the project and current cultural heritage legislation.

- From an archaeological perspective, there are no factors that should prevent the rezoning of the project area as described throughout this report. However, any subsequent proposal to rezone areas currently proposed for environmental protection would require additional assessment as the current assessment does not involve any consideration of impacts within these areas.

Should the rezoning be approved, any future development activities within the section of the project area zoned 'Residential' should occur with reference to the recommendations provided below.

- DHA should ensure that its employees and contractors are aware that it is an offence under Section 86 of the NPW Act to harm or desecrate an Aboriginal object unless that harm or desecration is the subject of an Aboriginal Heritage Impact Permit (AHIP).
- DHA should apply to the Director-General of OEH for an AHIP in accordance with Section 90 of the NPW Act, with this AHIP to cover the entirety of the impact area on the finalised master plan. The need to cover the entirety of the impact area is in recognition that archaeological material has been identified and/or predicted throughout the project area as a result of the disturbance of former dunes throughout the site. The AHIP should include provision for the completion of salvage works (both surface collection and sub-surface investigation), which should be conducted in

accordance with the methodology specified in **Section 10.0**.

- The AHIP should specifically exclude impacts to recorded burial sites. In the event that suspected human skeletal material is identified within the other portions of the project area, all works should cease immediately and the NSW Police Department, OEH and the registered Aboriginal parties should be contacted so that appropriate management strategies can be identified.

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1.0 Introduction

Defence Housing Australia (DHA) recently purchased from the Department of Defence the Fort Wallace and Stockton Rifle Range sites to facilitate the development of the properties for residential use by Australian Defence Force personnel and private individuals. Umwelt (Australia) Pty Limited (Umwelt) has been commissioned by DHA to prepare an Aboriginal cultural heritage and Archaeological Assessment for a rezoning application for the Stockton Rifle Range boundaries within Lot 5 DP233358 and the subsequent residential development of the site (the project area) in Fern Bay, NSW (refer to **Figure 1.1**). It is proposed to rezone a portion of the project area from the current SP2 Defence to R1 General Residential under the Port Stephens Local Environmental Plan (LEP) 2013 to allow for the residential subdivision, with the remainder of the site that is not subject to proposed development to be rezoned E2 Environmental Protection.

This assessment is part of a suite of specialist assessments of the site that have informed consideration of the site's potential for redevelopment. These assessments have been used as the basis of master plan options and the development of a recommended Master Plan, which has subsequently informed proposed revised planning controls for the site with respect to land use and height of buildings.

It is intended that a planning proposal will be lodged with Port Stephens Council, seeking support of the strategic merit of the proposal to proceed to a Gateway Determination by the Department of Planning and Environment (DPE). It is intended that the planning proposal, if supported by both Council and DPE, would then proceed to public exhibition and finalisation through an amendment to the LEP. Key outcomes of the master plan may be established in a site specific Development Control Plan or Stage 1 DA. Appropriate approvals will then be sought for the subdivision and development of the site under the amended planning controls.

The Master Plan has been used as a demonstration of how the site could appropriately accommodate residential uses in response to best practice urban design and planning principles. Where appropriate, this report has considered the likely impacts of the master plan on the Aboriginal cultural heritage and archaeology of the site to enable as detailed an assessment as possible. However, it is acknowledged that further detailed work will be undertaken and consideration given to potential archaeological and Aboriginal heritage impacts at subdivision and detailed design stage.

1.1 Project Description

DHA has an ongoing requirement for additional housing in the Newcastle area to cater for Newcastle-based Defence members and their families and to replace existing DHA dwellings that do not meet current standards. In response to this, DHA purchased two sites: Fort Wallace, Stockton, NSW and the Rifle Range, Fern Bay, NSW. DHA intends to obtain the necessary planning approvals to develop these sites for residential use with a mix of housing suitable for both Australian Defence Force (ADF) personnel and the private market. It is noted that development for residential use is only proposed for a portion of project area, as shown in **Figure 1.2**. This assessment focuses primarily on the area of proposed redevelopment due to the potential impacts associated with residential development as compared to the remainder of the project area which is to be rezoned for environmental protection and not subject to direct impact.

The two sites are located close to the Royal Australian Air Force (RAAF) Base Williamstown which lies 11 to 12 kilometres to the north of the sites. The Newcastle central business district lies a few kilometres to the south across the Hunter River.



Legend

 Site Boundary (Rifle Range)

FIGURE 1.1
Locality Plan

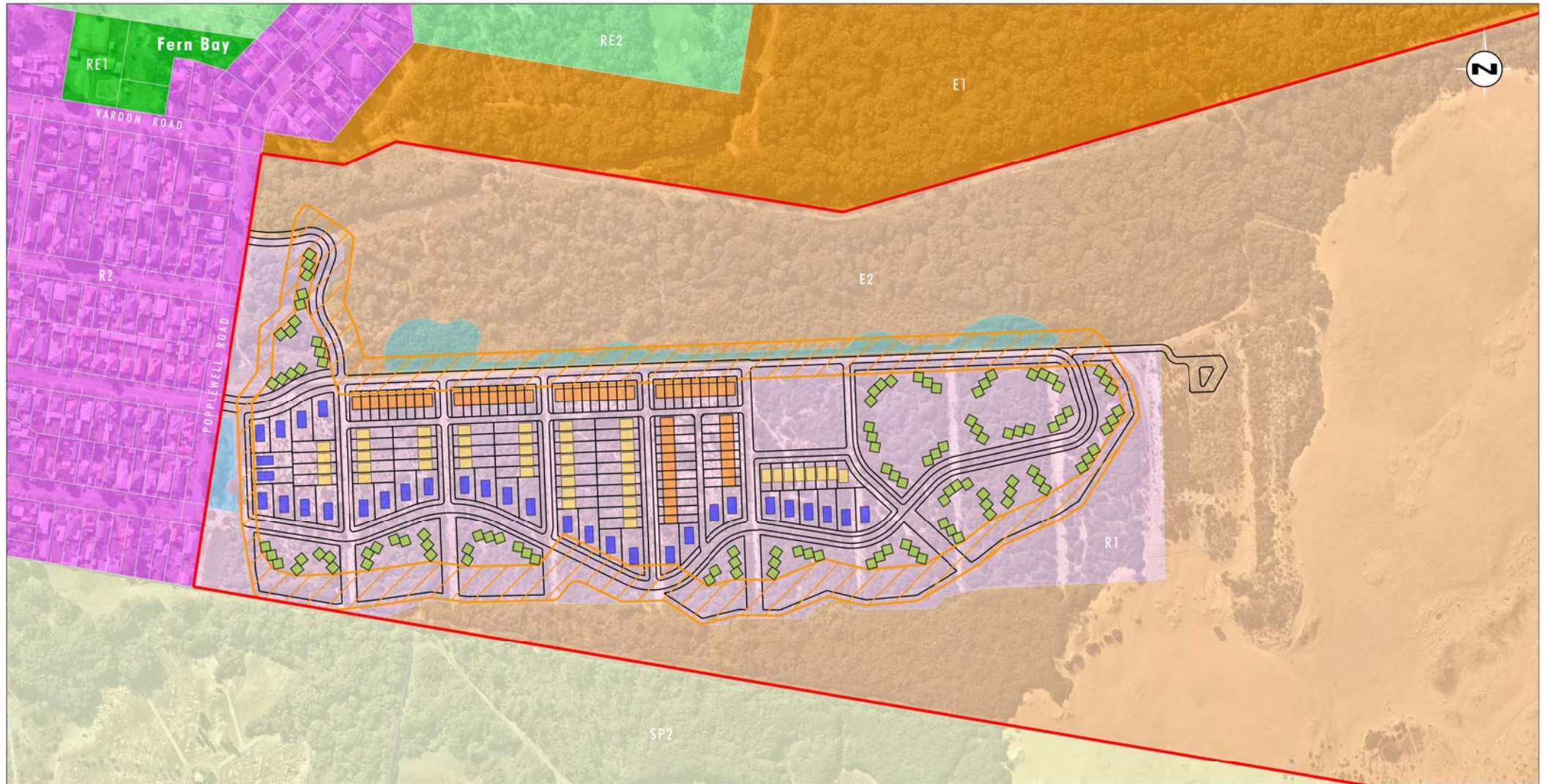


Image Source: Nearmap (May2016)
Data Source: LPI NSW (2009), Architectus (2016)

0 100 200 250m
1:5000

Legend

- Site Boundary
- Asset Protection Zone
- Single Eco Home
- Stormwater Detention Basin (Subject to design resolution)
- Townhouse

- Courtyard Home
- Cluster Home

- Land Zoning:
- E1 - National Parks and Nature Reserves
 - E2 - Environmental Conservation
 - R1 - General Residential
 - R2 - Low Density Residential

- RE1 - Public Recreation
- RE2 - Private Recreation
- SP2 - Infrastructure

FIGURE 1.2

Proposed Master Plan

1.1.1 Proposed Master Plan – Rifle Range

The proposed Master Plan is prepared to demonstrate how the site could appropriately facilitate a residential development including a mix of residential typologies primarily placed within the former Rifle Range footprint (refer to **Figure 1.2**). The Master Plan has sought to retain the Rifle Range landscape and focus development within the previously disturbed areas of the site. As previously discussed, the remaining less disturbed portions of the project area will be zoned for environmental conservation and will not be subject to development.

The residential typologies for the Rifle Range include the following:

- **Townhouses** – up to 56 attached 1-3 storey dwellings with a lightweight design that facilitates layouts that are responsive to site features and context.
- **Coastal cluster houses** – up to 113 townhouse style dwellings set within natural landscape areas. Private open space is limited to decks and immediate terrace areas attached to each dwelling.
- **Courtyard homes** – up to 40 large courtyard family homes including 4 bedrooms, 3 bathrooms, open plan living space, single garage and an ample rear garden.
- **Single eco-homes** – up to 26 lightweight, climate responsive individual homes set within generous lots.

1.2 Legislative Context

This section incorporates a review of legislation and planning instruments relevant to the assessment of Aboriginal cultural heritage within the project area.

1.2.1 Environmental Protection and Assessment Act 1979

The *Environmental Protection and Assessment Act 1979* (the EP&A Act) regulates development activity in New South Wales. Specifically Part 3 of the EPA Act provides the legislative framework for plan making including the process for LEP amendments. In accordance with the requirements of Part 3, this assessment includes consideration of Aboriginal cultural heritage. The Office of Environment and Heritage (OEH) has provided updated advice regarding planning proposals that specifies that planning proposals should identify whether Aboriginal cultural heritage values are known or likely to occur, involving an assessment of archaeological factors and consultation with Aboriginal parties ‘who have appropriate cultural information relevant to determining cultural significance.’ This advice has been taken into consideration in the preparation of the current assessment.

Any subsequent development of the project area will be regulated under Part 4 of the EPA Act. Section 79C establishes the matters which the consent authority is required to consider in determining a development application, including the likely environmental impacts, which in turn, requires consideration of potential impacts to Aboriginal cultural heritage, as undertaken in this report.

1.2.2 Port Stephens Local Environmental Plan 2013

The Port Stephens Local Environmental Plan (LEP) is established under the provisions of the EP&A Act. It provides guidance for development activities within the Port Stephens Local Government Area. Part 5.10 establishes the requirements for development consent in relation to heritage conservation. The objectives of this part of the LEP include conservation of Aboriginal objects or Aboriginal places of heritage significance. In accordance with these provisions, development consent is required for any activity that will involve:

- demolishing or moving an Aboriginal object
- disturbing or excavating an Aboriginal place of significance
- erecting a building on land on which an Aboriginal object is located or that is within an Aboriginal place of heritage significance
- or subdividing land containing an Aboriginal object or Aboriginal place of heritage significance.

There are some minor exceptions to these provisions, including activities that meet the requirements for exempt development.

With reference to consideration of the effects of development, Clause 8 of Part 5.10 specifies, that for developments in an Aboriginal place of significance, the consent authority must '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 by means of an adequate investigation and assessment.... and notify the local Aboriginal communities about the application and take into consideration any response received within 28 days.'

1.2.3 National Parks and Wildlife Act 1974

The *National Parks and Wildlife Act 1974* (NSW) (hereafter NPW Act) is the primary statutory control relevant to this report. The Office of Environment and Heritage (OEH) is primarily responsible for regulating the management of Aboriginal cultural heritage in New South Wales under the NPW Act. The NPW Act is accompanied by the *National Parks and Wildlife Regulation 2009* (the Regulation), the *Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010a – hereafter referred to as the Code of Practice), and other codes of practice relating to demonstration of due diligence.

The NPW Act defines an Aboriginal object as:

..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

Under Section 84 of the NPW Act, an Aboriginal Place must be declared by the Minister as a place that, in the opinion of the Minister, is or was of special significance with respect to Aboriginal culture.

In accordance with Section 86(1) of the NPW Act, it is an offence to harm or desecrate a known Aboriginal object, whilst it is also an offence to harm an Aboriginal object under Section 86(2). Similarly, Section 86(4) states that a person must not harm or desecrate an Aboriginal place.

Harm to an Aboriginal object or place is defined as any act or omission that:

- a) *destroys, defaces or damages an 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, (noting that desecration constitutes a separate offence to harm), or*
- f) is trivial or negligible, or*
- g) is excluded from this definition by the regulations.*

Section 87(1) of the NPW Act specifies that it is a defence to prosecution under Section 86(1) and Section 86(2) if the harm or desecration of an Aboriginal object was authorised by an Aboriginal Heritage Impact Permit (AHIP) and the activities were carried out in accordance with that AHIP. Sections 87(2) and (4) establish that it is a defence to prosecution under Section 86(2) if due diligence was exercised to reasonably determine that the activity or omission would not result in harm to an Aboriginal object or if the activity or omission constituting the offence is a low impact act or omission (as defined in Section 80B of the Regulation). Furthermore, Clause 3A of the Regulation specifies that an act carried out in accordance with the Code of Practice is excluded from the definition of harm.

1.2.4 Environment Protection and Biodiversity Conservation Act 1999

To determine if there were any federally listed Aboriginal heritage sites or places present within the proposal area, a search was undertaken of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) Protected Matters Search Tool (refer **Appendix A**). No sites or places were identified and therefore there are no requirements under the EPBC Act in relation to this Aboriginal cultural heritage and archaeological assessment.

1.3 Project Team

All Aboriginal cultural input for this report has been provided by the registered Aboriginal parties and their representatives, as noted through the text. The inspection of the survey area was completed by Dave Feeney (Karuah Indigenous Corporation), Jamie Merrick (Worimi Local Aboriginal Land Council), Lennie Anderson (Nur-Run-Gee), and Rebecca Young (Murrooma). The archaeological component of the inspection was undertaken by Alison Lamond (Archaeologist - Umwelt).

This report (including facilitating the recording of Aboriginal cultural input) was prepared by Alison Lamond (Archaeologist – Umwelt) and Nicola Roche (Manager Cultural Heritage – Umwelt).

All cultural information provided by the registered Aboriginal parties (RAPs) is documented in this ACHAA report. All registered Aboriginal parties were provided the opportunity to review the draft of this ACHAA, particularly in relation to the Aboriginal cultural values of the project areas, and the ways in which the ACHAA may, or may not contribute to the documenting and managing of these values.

2.0 Aboriginal Party Consultation

Consultation regarding the Aboriginal cultural values associated with the project area has been undertaken in accordance with Part 8A, Clause 80C of the Regulation. A detailed Aboriginal party consultation log and all correspondence is summarised in **Table 2.1** and included in **Appendix B**. Notifications were developed with reference to the requirements of Clause 80C Sub-clause (4), and the registration of Aboriginal parties was completed in accordance with Clause 80C Sub-clause (5). As a result of this process, five Aboriginal parties registered an interest in ongoing consultation regarding the project.

The registered Aboriginal parties are:

- Karuah Indigenous Corporation
- Mur-Roo-Ma Inc.
- Nur-Run-Gee Pty Ltd
- Worimi Local Aboriginal Land Council and
- Wonn1

A draft methodology for the ACHAA was provided to all Aboriginal parties registered by 2 August 2016. It was requested that all Aboriginal parties provide comment on the proposed assessment methodology, particularly in relation to the Aboriginal cultural values of the project area and the way in which the assessment may or may not contribute to documenting these values and assisting in their management. No objections were raised with reference to the draft methodology.

Wonn1 responded to the registration of interest later in the project. They were provided with the methodology and all information regarding the project.

Karuah Indigenous Corporation, Mur-Roo-Ma Inc, Nur-Run-Gee Pty Ltd and Worimi Local Aboriginal Land Council were provided with the opportunity to be involved in the pedestrian survey of the survey area. The inspection of the survey area was conducted on the 22 September 2016 by Dave Feeney (Karuah Indigenous Corporation), Jamie Merrick (Worimi Local Aboriginal Land Council), Lennie Anderson (Nur-Run-Gee), Rebecca Young (Mur-Roo-Ma) and Alison Lamond (Archaeologist - Umwelt).

The registered Aboriginal parties that participated in the survey provided feedback as a group after the survey of the project area, summarised below and provided in full in **Appendix B**.

The survey response provided the following statement with regard to significance:

- The northern side of the current access road has storylines attached to it, the whole area is extremely important to our traditional owners.

The recommendations presented below were provided by registered Aboriginal party representatives as a part of their response to the survey:

- No development on the northern side of the access road. If houses on the northern side are needed they can be positioned along the Popplewell Road in line with the existing houses to the north, this area is already disturbed and will not affect our Aboriginal Sites.

- No impact at the intersection of Braid Road and Popplewell Road because of known burials in the area.
- No impact in the southwest corner of the rifle range due to known burials.
- Surface collection of sites.
- Artefacts should eventually be reburied on site.
- Due to the limitations of access and visibility from vegetation in the initial survey, all areas were not accessed and there are sites from previous works in this area that have been since covered by vegetation. Vegetation needs to be completely cleared, with all vehicles or machinery to be rubber tyred in order to minimise impact of sites. Once vegetation cleared another needs to be completed in order to record and salvage any further sites.
- Excavation of test pits across entire impact footprint to test the extent of the sites.
- Full salvage excavation of the footprint/damage of development is recommended in order to protect all Aboriginal objects. This includes all areas to be developed that will be excavating the natural ground, e.g. structural supports or drainage.

Figure 2.1 was developed with the registered Aboriginal parties who participated in the survey to identify areas of cultural sensitivity and provide further detail to mitigation recommendations.

A draft version of this ACHAA report was supplied to all the registered Aboriginal parties on 18 April 2017 with an invitation to review all aspects of this document, particularly those related to mitigation and management. Registered Aboriginal parties were asked specifically to provide any cultural information they deemed appropriate to the preferred management of the project area. Mur-Roo-Ma endorsed the recommendations and methodologies provided in this report (via email 18 May 2017).

All registered Aboriginal parties were invited to attend an onsite meeting on 12 May 2017 to discuss the draft report including cultural values of the area and management and mitigation recommendations. David Kirk (Karuah Indigenous Corporation), Brett Chambers (Worimi Local Aboriginal Land Council), Lennie Anderson (Nur-Run-Gee), Anthony Anderson (Mur-Roo-Ma), Gully Coote (DHA), Nicola Roche (Umwelt) and Alison Lamond (Umwelt) attended the meeting. A summary of the meeting discussion was provided to all the registered Aboriginal Parties via email on the 14 June 2017 and is provided below:

- Archaeological management recommendations (involving surface collection and 2 phases of excavation) were agreed to be a suitable way of managing the landscape. The Aboriginal parties recommended that Phase 1 of excavations should be undertaken as a priority to assist in clarifying the nature and extent of deposits. The Aboriginal parties supported the recommendation that these excavations should be undertaken mechanically (with the option to revert to hand excavation where applicable) due to the potential depth of deposits, the preliminary nature of the investigations, the disturbance to the upper soil profile and the extent of area subject to excavation.
- The registered Aboriginal parties identified that the decision regarding whether any further community collection/salvage (outside the archaeological works described above) could not be made until the Phase 1 archaeological works had been completed as this will provide a better understanding as to whether any deposits exist that require management outside the archaeological works.
- The registered Aboriginal parties agreed that undertaking a controlled burn to reduce the invasive species to the north of the access road appears to be a suitable management strategy, provided that the burn is undertaken in consultation with Aboriginal parties. The Aboriginal parties requested that

further discussions should be had with Dan Pederson (ecologist) regarding the burn planning prior to commencement.

Karuah Indigenous Corporation, Mur-Roo-Ma Inc, Nur-Run-Gee Pty Ltd and Worimi Local Aboriginal Land Council all responded to the email confirming agreement with the proposed approach. Information provided by the registered Aboriginal parties during the meeting and in response to the draft report is summarised in **Sections 6.1** and **9.1** and provided in full in **Appendix B**.

Table 2.1 Aboriginal party consultation log

Date	Type of Consultation	Parties Contacted	Outcome
18/05/16	Provision of project notification letter requesting identification of any parties who may hold knowledge relevant to Aboriginal cultural heritage within the project area.	Office of Environment and Heritage	25/05/16 provided
		Port Stephens Council	Phone call 19/5/16: suggested to contact Worimi Local Aboriginal Land Council.
		City Of Newcastle	Phone call 24/5/16: suggested to contact Worimi Local Aboriginal Land Council.
		Worimi Local Aboriginal Land Council	Registered and interest in the project.
		Hunter Local Land Services	No response.
		National Native Title Tribunal	No response.
		Native Title Services (NTS Corp)	No response.
		Office of the Registrar Aboriginal Land Rights Act 1983 (NSW)	No response.
30/05/16	Provision of project notice to Aboriginal parties identified by OEH.	Maaiangal Aboriginal Heritage	No response.
		Mur-Roo-Ma Inc.	Email (6/06/16): registered an interest in the project.
		Nur-Run-Gee Pty Ltd	Phone Call (8/06/16): registered an interest in the project.
		Worimi Aboriginal Community Co-operative	No response.
		Garrigal Aboriginal Community Inc	No response.
		Doo-Wa-Kee	No response.

Date	Type of Consultation	Parties Contacted	Outcome
		Lakkari NTCG	No response.
		Lower Hunter Aboriginal Incorporated	No response.
		Gimbay Gatigaan Aboriginal Corporation	No response.
		Karuah Indigenous Corporation	Email (6/06/16): registered an interest in the project.
		Wonn1	Email (11/07/16): contacted to register an interest 28 days after registration closed. Agreed to provide with all information regarding the project.
2/08/2016	Provision of draft Assessment Methodology to Registered Aboriginal parties	Mur-Roo-Ma Inc.	No response
		Nur-Run-Gee Pty Ltd	No response
		Karuah Indigenous Corporation	No response
		Worimi Local Aboriginal Land Council	No response
4/08/16	Provision of draft Assessment Methodology to Wonn1	Wonn1	No response
7/09/2016	Invitation to Registered Aboriginal Parties to Participate in a survey of the project area on 21/9/16	Mur-Roo-Ma Inc.	Accepted
		Nur-Run-Gee Pty Ltd	Accepted
		Karuah Indigenous Corporation	Accepted
		Worimi Local Aboriginal Land Council	Accepted
21/9/2016	Survey of project area	Mur-Roo-Ma Inc.	Representative participated
		Nur-Run-Gee Pty Ltd	Representative participated

Date	Type of Consultation	Parties Contacted	Outcome
		Karuah Indigenous Corporation	Representative participated
		Worimi Local Aboriginal Land Council	Representative participated
1/11/2016	Registered Aboriginal Parties provided a joint response to the survey	Mur-Roo-Ma Inc.	Response: described the area as of high cultural significance, in particular the area to the north of the central access road. The response included mitigation recommendations detailed in Sections 2.0, 6.1 and 9.1 . The response is provided in full in Appendix B .
		Nur-Run-Gee Pty Ltd	
		Karuah Indigenous Corporation	
		Worimi Local Aboriginal Land Council	
17/12/2016	Public advertisement in Newcastle Herald providing notification of assessment and opportunity to register interest for on-going project consultation.		
5/12/2016	Email contact in response to advertisement	Wonn1	Wonn1 emailed responding to the advertisement. As group had previously responded to registration letter, had previously been provided information regarding the project.
18/04/2017	Draft ACHAA provided to Registered Aboriginal Parties	Mur-Roo-Ma Inc.	Provided response via email (18/05/2017)
		Nur-Run-Gee Pty Ltd	
		Karuah Indigenous Corporation	
		Worimi Local Aboriginal Land Council	
		Wonn1	

Date	Type of Consultation	Parties Contacted	Outcome
10/05/2017	On site meeting with DHA to discuss Draft report	Mur-Roo-Ma Inc.	Representative attended meeting.
		Nur-Run-Gee Pty Ltd	Representative attended meeting.
		Karuah Indigenous Corporation	Representative attended meeting.
		Worimi Local Aboriginal Land Council	Representative attended meeting.
		Wonn1	Unable to attend meeting.
14/06/2017	Provision of email summarising meeting discussions	Mur-Roo-Ma Inc.	Response via email (16/06/2017).
		Nur-Run-Gee Pty Ltd	Response via email (14/06/2017).
		Karuah Indigenous Corporation	Response via email (16/06/2017).
		Worimi Local Aboriginal Land Council	Response via email (28/6/2017)
		Wonn1	Umwelt follow up calls left message, no response (20/06/2017 and 26/06/2017).

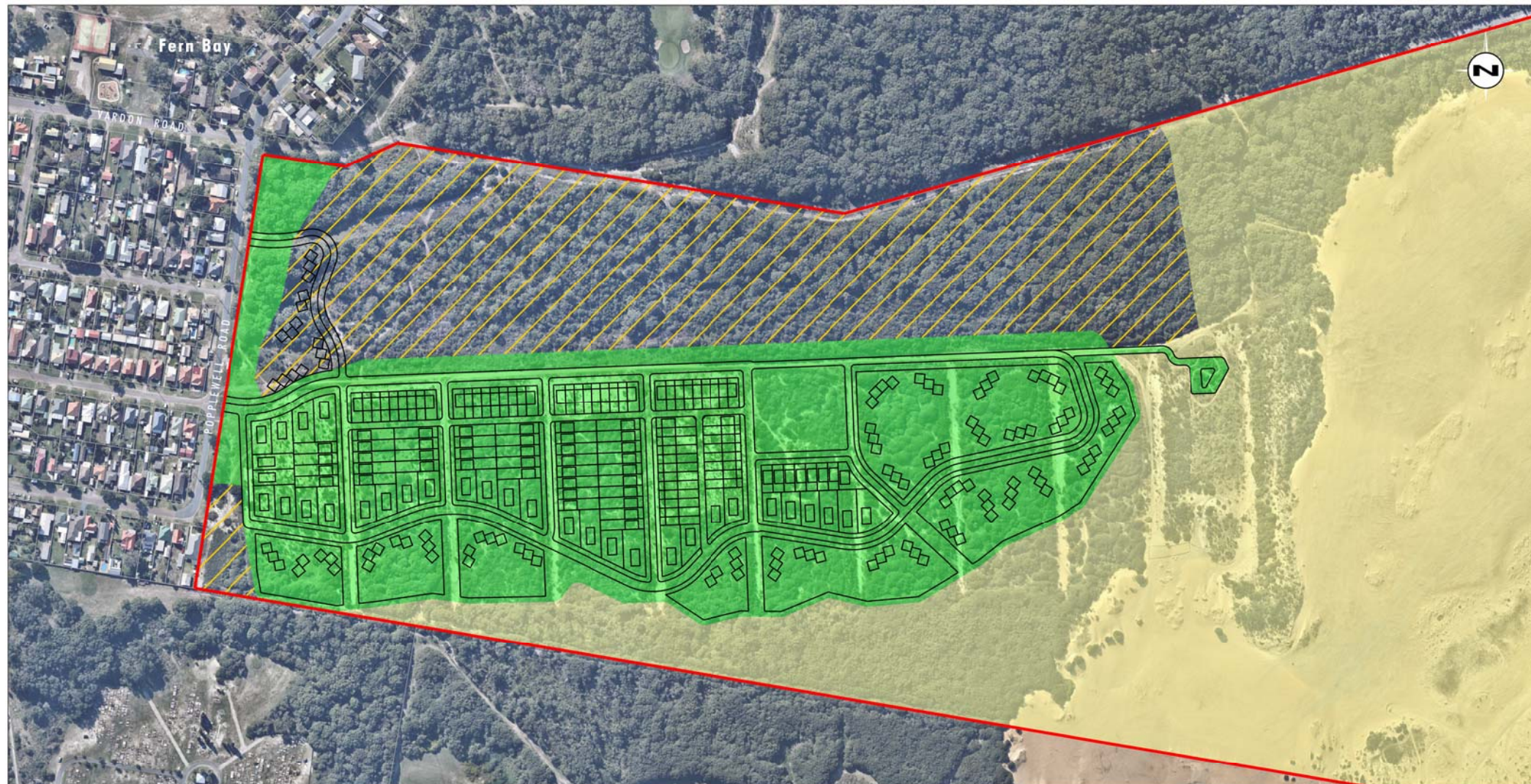


Image Source: Nearmap (May2016)
Data Source: LPI NSW (2009), Architectus (2016)

0 100 200 250 m
1:5000

Legend

- Site Boundary
- Area Not Assessed for Impact
- Cultural Sensitivity - Surface Collection and Salvage Excavation
- High Cultural Sensitivity - No development

FIGURE 2.1

Registered Aboriginal Parties
Preliminary Recommendations
Stockton Rifle Range

2.1 Fieldwork Participation

In recognition of the essential involvement of registered Aboriginal parties in the fieldwork program, the opportunity to participate in the survey was provided to Karuah Indigenous Corporation, Mur-Roo-Ma Inc, Nur-Run-Gee Pty Ltd and Worimi Local Aboriginal Land Council. Dave Feeney (Karuah Indigenous Corporation), Jamie Merrick (Worimi Local Aboriginal Land Council), Lennie Anderson (Nur-Run-Gee), Rebecca Young (Murrooma) and Alison Lamond (Archaeologist - Umwelt).participated in the survey. Registered Aboriginal party participation in the fieldwork program is detailed in **Section 5.2**.

2.2 Native Title

A search of the Native Title Tribunal register was undertaken on the 7 November 2016. No Native Title Claims and no Indigenous Land-Use Agreements (ILUAs) have been registered or notified by the National Native Title Tribunal as being in place over the project area.

3.0 Environmental Context

The decisions that people make regarding such things as where they live, the range of resources that they use and other aspects of daily life may be influenced by the environment in which they live. The preservation and visibility of sites is also affected by environmental factors such as vegetation cover, past land use and disturbance. A review of the environmental context of the project area is therefore integral to considerations of site visibility, preservation and occurrence within the project area.

The project area is approximately 112 hectares in size and is broadly located between Popplewell Road, Fern Bay, and the high water mark at Stockton Beach. The project area is surrounded by residential development and conservation lands including the Fern Bay township to the west, the Worimi Regional Park adjoining the northern portion of the site and land owned by Port Stephens Council to the south.

3.1 Landscape Geomorphology and Soils

The project area is located within a large dual barrier formation known as Stockton Bight. The development of the Stockton Bight dual barrier system has been the subject of considerable geomorphic research which has been summarised by several authors (Dean-Jones 1990: Chapter 2; Thom et al 1992; Umwelt 2000:4.2-4.4; ERM 2006:5-9). A summary of the landscape history of Stockton Bight is provided below with an emphasis on the project area.

Stockton Bight consists of an inner barrier of Pleistocene age (referred to as the Inner Barrier), a seaward barrier of Holocene age (referred to as the Outer Barrier) and a low-lying swampy depression that divides the barriers and is known as the Inter-Barrier depression. Prior to approximately 120,000 years before present (BP), the Hunter River flowed to the north-east of its present route, passing through what is now Fullerton Cove. During the last Interglacial period (approximately 120,000BP), sea levels increased, exceeding current levels and depositing sediments to form the initial stage of the Inner Barrier. These swamps provided a broad range of resources for Aboriginal people. The nature of poorly drained low-lying areas within this context also has significant implications for how Aboriginal people lived within the landscape and the likely location of archaeological sites.

During the last Glacial period (approximately 116,000 to 10,000BP) climatic conditions changed again and sea levels fell such that the shoreline was approximately 30 kilometres seaward of the current shoreline. The beach sands that had been deposited as the Inner Barrier strand plain were subsequently exposed to aeolian reworking across much of Stockton Bight, resulting in the formation of wind-blown sand dunes across the majority of the Inner Barrier. These sediments blocked watercourses fed from the surrounding valleys, resulting in the formation of fresh water swamps such as Grahamstown Swamp and also causing the Hunter River to begin to assume its current course. As the climate became warmer and wetter from approximately 10,000 to 6500BP, sea levels gradually rose again and deposited former beach sands as back-barriers and enclosed tidal deltas to form estuarine lagoons. Approximately 7900 to 7400BP sea level rose to approximately 1 to 1.5 metres above its current level. Sea level remained at this elevation until approximately 2000BP, after which time it gradually receded until reaching its current level (Sloss et al. 2007). Between approximately 6000 and 4500BP the Outer Barrier began to develop due to the deposition of wind-blown sand along the coastline and inland. This created a series of beach ridges and strand plains that further impeded drainage from low-lying areas and increased siltation of lagoons to form the Inter Barrier depression, including the commencement of the formation of Fullerton Cove. A series of additional phases in the formation and subsequent evolution of the Outer Barrier took place throughout the Holocene period and continues to the present day.

It is important to note that the sandy sediments within the project area belong to the Holocene beach ridge, strand plain and dune sequence mentioned above, and have a maximum age of approximately 6000BP (Dean Jones 1992:4). This sequence includes up to three phases of dune transgression estimated at approximately 4500 - 4000BP, 2300 - 1200BP, and the current coastal phase which is still active and began no earlier than approximately 300BP (Dean Jones 1992:4).

The project area is partially located within the Hawks Nest soil landscape which typically comprises a speckled brownish grey to brownish black loose loamy sand (A1 horizon) overlying a bleached yellow orange loose sand (A2 horizon), which in turn overlies a mottled dark brown to brown sand with organic/iron staining mottles (yellow orange to pale brown) B horizon (Murphy 1995). The easternmost end of the project area (outside of proposed impacts from residential development) is located within the Stockton Beach soil landscape. This is a highly dynamic area of beach and unstable dunes. The beach typically consists of coarse shelly greyish yellow brown marine sand and the unstable dunes typically consist of loose fine to medium grained aeolian sand. These sands are subject to extensive movement by wind in particular in areas without vegetation cover and extreme wave erosion during high seas.

Within the Hawks Nest soil landscape, unconsolidated sands were originally blown up to form dunes/strandplains and then have been subject to the impacts of wind and water based erosion and deposition until such time as enough vegetation covered the dune/strandplain to consolidate the sand, with the root systems of the vegetation stabilising the sand and dead vegetation enriching the sands to form what is known as a podsol. However, stabilised dunes can still be affected by water and wind erosion moving sands downslope (degrading) or by the addition of new wind-blown sand or ongoing podsol formation (aggrading). At various times the currently stable dunes within the project area may have been both aggrading and degrading surfaces. This in turn may have affected the location and integrity of any archaeological deposits they may have contained.

3.2 Flora and Fauna

The project area is situated in proximity to fresh water, marine and estuarine environments (MCH 2005:9). The northern section of the project area consists of a moderately open forest with a shrubby understorey. The canopy is dominated by smooth-barked apple (*Angophora costata*) and blackbutt (*Eucalyptus pilularis*). The midstorey was dominated by old man banksia (*Banksia serrata*), Sydney golden wattle (*Acacia longifolia*) and coastal tea-tree (*Leptospermum laevigatum*), with occasional coast banksia (*B. integrifolia*). The ground cover consisted primarily of bracken fern (*Pteridium esculentum*) with spiny-headed mat-rush (*Lomandra longifolia*), raspwort (*Gonocarpus teucroides*), blue flax lily (*Dianella caerulea*), blady grass (*Imperata cylindrica*) and kangaroo grass (*Themeda triandra*) also present (Umwelt 2016). The central portion of the project area which has been subject to clearing and modification though use as a rifle range consists of shrubland and is primarily dominated by coastal tea-tree (*Leptospermum laevigatum*) with occurrences of coastal wattle (*Acacia longifolia* subsp. *sophorae*), tree broom-heath (*Monotoca elliptica*) and coast banksia (*Banksia integrifolia*). The native groundcover consisted primarily of pig face (*Carpobrotus glaucescens*), spiny-headed mat-rush (*Lomandra longifolia*), *Hibbertia* sp. and kidney weed (*Dichondra repens*). The exotic bitou bush (*Chrysanthemoides monilifera*) and lantana (*Lantana camara*) also occur in this community. Disturbance of this community is varied with some areas recently cleared with sparse vegetation cover and other areas presenting dense coastal tea-tree stands (Umwelt 2016). The eastern section of the project area is primarily unvegetated active dunes with communities of the sand stabilising grass hairy spinifex (*Spinifex sericeus*) with patches of bitou bush (*Chrysanthemoides monilifera*) (Umwelt 2016). These vegetation communities contain many plants recorded as having been used by Aboriginal people for various purposes including food, medicine and raw materials for the construction of storage vessels, weapons and tools (refer to ERM 2006). Vegetation communities of this type would also have supported a range of mammal, reptile and bird species that provided food and other resources for Aboriginal people.

The nearby Hunter River Estuary area (including Fullerton Cove) (located to the west and northwest of the project area) contains mangrove and saltmarsh communities that form important breeding environments for native fish and crustaceans (Matthei 1995:192), and would have supplied abundant plant and animal resources to the Aboriginal inhabitants of the area. In addition, the beachfront to the east would have hosted a range of important marine resources.

3.3 Other Resource Availability

Due to the nature of its formation, the project area does not provide immediate access to suitable stone resources for the manufacture of stone implements. The nearest identified high-quality stone resource frequently utilised for the manufacture of stone implements by the Aboriginal people that inhabited this region consists of outcropping tuff at Nobbys Head, which is approximately 5 kilometres south of the project area (Umwelt 2011b). Outcropping tuff from the Tomago Coal Measures is also present at Shortland in association with an identified quarrying site (approximately 10 kilometres to the west of the project area), and in the Tomago area (approximately 9 kilometres to the northwest of the project areas). While an Aboriginal quarrying site has been identified at Shortland, there is no evidence of quarrying by Aboriginal people being undertaken at Tomago (Dean-Jones 1990:116).

Siliceous tuffs with the characteristics of silcrete have also been identified at Tomago and on the eastern margin of Grahamstown Dam (approximately 12 kilometres to the north of the project areas). A potentially utilised quartzite resource was also recorded to the west of Medowie, approximately 17 kilometres northeast of the project area (Dean-Jones 1990:116).

3.4 Land-use History

It is important to consider the extent to which past land use and disturbance factors have affected the integrity and visibility of archaeological material within the project area. The project area was located within a larger parcel of land purchased by James Mitchell from the Crown in 1837. It was later acquired by the North Stockton Land Company but it was undeveloped prior to its military use (Suters Architects 1999).

The Stockton Rifle Range was utilised as firing range with the land acquired by the Commonwealth in 1939 and construction beginning in 1940. The rifle range consisted of a flat grassed area with raised firing mounds at 100 yard intervals with the target system and stop butts at the eastern end (refer to **Figure 3.1**). Early upgrade works on the site are described as 'lowering mounds to grade and removing high portions of the range area and filling gully, turfing mounds, grassing the range area and provision of windbreaks' (Suters Architects 1999: 8). The Links anti-aircraft battery consisted of five reinforced concrete structures (four gun emplacements surrounding the central control bunker) located north of the still extant central access road. By the time of decommissioning of the site in the late 1990's a series of buildings had been constructed parallel to Popplewell Road and along the northern side of the central access road including stores, toilet block, clubhouses and the rangers quarters. Licences for sand mining within the site were granted between 1951 and 1979 (Suters Architects 1999: 8). During the remediation of the site by the Department of Defence during decommissioning all of the structures were demolished (except the anti-aircraft battery) and the firing mounds were removed.

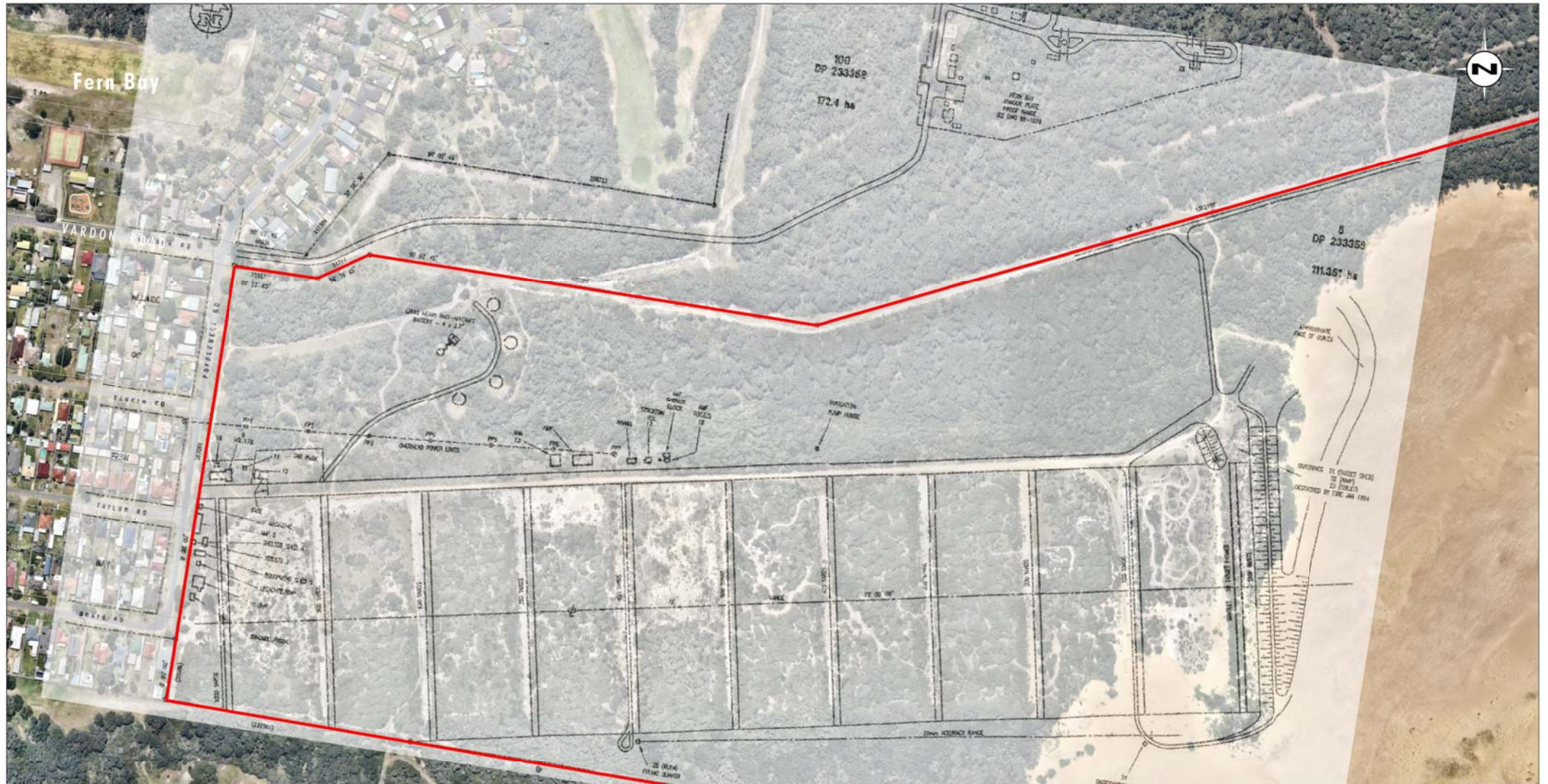


Image Source: Department of Defence No. 99-1074
Data Source: LPI NSW (2009)

0 50 100 200m
1:5 000

Legend
Site Boundary

FIGURE 3.1

1999 Plan of Stockton Rifle Range

The integrity of archaeological deposits can also be affected by processes of dune formation and other natural factors commonly referred to as bioturbation. These include insect/animal burrowing and/or the active growth and subsequent decay of trees and their roots. These factors can act to relocate or generally disturb archaeological deposits from their primary depositional contexts. In general terms, the level of human impact to the areas proposed to be rezoned for environmental project is relatively low (aside from the areas previously subject to sand mining, as discussed in GML 2008 and Suters Architects 1999). In contrast, the level of human-generated disturbance within the proposed development area is high, as would be expected given the prior development of the area by the Department of Defence and the establishment of associated infrastructure such as electricity, water and other services. However, due to the nature of dune formation, undisturbed sections of the soil profile may continue to considerable depths within the dune fields. Geotechnical testing within the proposed redevelopment area (Douglas Partners 2016) indicates that A horizon sands remain present within this area to varying depths, which in turn means that archaeological deposits may also remain present. The occurrence of surface disturbance therefore does not necessarily indicate that sub-surface deposits (if present) have been subject to the same level of impact unless it can be demonstrated that effects of disturbance extend for considerable depth.

3.5 Summary

The project area is situated within a Holocene transgressive dune field in an area that would have provided access to a range of very rich resource zones that would have made this area attractive to Aboriginal occupation, and/or a suitable place for the procurement of resources. The portion of the project area proposed for redevelopment has been subject to significant disturbance, which in turn has the potential to impact on the distribution and integrity of archaeological material within the site. However, due to the nature of soil landscapes within the area, there remains the potential for archaeological deposits with varying degrees of integrity to remain present within disturbed portions of the project area. This potential is greater within the less disturbed, vegetated dunes to the north and south of the area proposed for development. The eastern end of the project area is located within the active dunes while this includes areas of recent and current deposition it also includes potential for buried soil profiles (where these profiles have not been removed as a result of sand mining).

4.0 Cultural Context

The investigation of Aboriginal cultural heritage and the identification of areas of potential archaeological deposit requires an understanding of the cultural context of the area. The cultural context of an area includes both ethnohistoric information regarding how Aboriginal people lived during the early European contact period and the results of previous archaeological investigations in the region.

4.1 Ethnohistoric Information

Ethnohistoric accounts may include information that is relevant to the way in which Aboriginal people lived during the period of early non-Aboriginal settlement. However, the reliability and accuracy of ethnohistoric records is affected by a number of factors. The majority of early historical records were written by non-Aboriginal men who would not have had access to 'closed' aspects of Aboriginal society. Aboriginal culture was largely foreign to early European settlers and was typically (and incorrectly) viewed as being 'primitive', with historical accounts often intentionally or unintentionally reinforcing this stereotype. By the time the Port Stephens, Newcastle and Lower Hunter areas were settled by Europeans, introduced diseases had already had an impact on the Aboriginal population (refer to Butlin 1982). Subsequent European settlement also resulted in significant population movement and massive social disruption and dislocation. Early ethnohistoric records generally do not distinguish between different Aboriginal tribal or clan groups and it is not possible to determine whether behaviours or practices that they describe are specific to a tribe, clan or perhaps even family or individual. Furthermore, even if ethnohistoric records could provide an accurate portrayal of Aboriginal society at the time of early settlement, it must be recognised that culture is dynamic and significant changes may have occurred throughout the very long period within which Aboriginal people may have lived in the area.

The above limitations of ethnohistoric accounts are apparent in the significant disparities in descriptions of boundaries of the Worimi area (refer to ERM 2006:20). However, according to Tindale (1974), Enright (1932) and Elkin (1932) the project area is situated within Worimi traditional lands. Considerable research regarding the archaeological and ethnohistoric context of the region has been summarised by several authors (Dean-Jones 1990, ERM 2005, ERM 2006), MCH Pty Ltd (2004, 2005a, 2005b). Overall, ethnohistoric sources indicate that the Worimi had a system of established social organisation and beliefs and an economic system that was largely focused on the rich coastal resources that were capable of supporting populations at greater density than those in the inland areas (Umwelt 2014).

Current understandings of the cultural values of the area are subject to discussion in subsequent sections of this report.

4.2 Archaeological Context

4.2.1 Aboriginal Heritage Management Information System (AHIMS) Recorded Sites

The OEH Aboriginal Heritage Information Management System (AHIMS) is a database of Aboriginal sites for which site cards have been submitted. The AHIMS database was searched on 17 May 2016 for sites located in the vicinity of project area. A total of 73 sites were identified within this search area (provided in full in **Appendix C**). Twelve previously recorded sites are located within the project area. While the registered coordinate of 38-4-0895 (Fern Bay Site complex) is located outside the project area, it is a large site and includes the western extent of the project area (refer to **Figure 4.1**). The registered sites located within the project area are detailed below in **Table 4.1**. It is noted that there are also numerous other sites that have been recorded outside the project area within the Fern Bay township, as shown in **Figure 4.1**.

Table 4.1 AHIMS Registered Sites located within Stockton Rifle Range

AHIMS Site ID	Site Name	Site Description	Location relative to proposed impacts within the project area
38-4-0895	Fern Bay site complex	The site is a major complex of middens artefact scatters and isolated finds. The site card noted traditional knowledge records the presence of ceremonial sites and traditional; burials within the site area. The site area is approximately 4 kilometres north south and 0.4 to 1 kilometres wide east west.	The western end of project area is within the site area. Residential construction is proposed within the site area and will impact the site.
38-4-1127	Cemetery Corner	Burial. Site Card not available*	The registered site location is within the project area however registered Aboriginal Parties advised that the recorded coordinates are incorrect and that the site was recorded outside the area proposed for development (refer to Section 5.4.2.3)

AHIMS Site ID	Site Name	Site Description	Location relative to proposed impacts within the project area
38-4-1128	Rifle Range 1	Burial. Site Card not available*	The registered site location is within the project area however registered Aboriginal Parties advised that the recorded coordinates are incorrect and that the site was recorded outside the area proposed for development (refer to Section 5.4.2.3)
38-4-1129	Rifle Range 2	Burial. Site Card not available*	The registered site location is within the project area however registered Aboriginal Parties advised that the recorded coordinates are incorrect and that the site was recorded outside the area proposed for development (refer to Section 5.4.2.3)
38-4-1130	Cols Corner Braid Rd	Burial. Site Card not available*	The registered site location is within the project area however registered Aboriginal Parties advised that the recorded coordinates are incorrect and that the site was recorded outside the area proposed for development(refer to Section 5.4.2.3)

AHIMS Site ID	Site Name	Site Description	Location relative to proposed impacts within the project area
38-4-0692	Stockton Rifle Range 1	An artefact scatter consisting of 7 artefacts and fragments of oyster and pipi shells on the crest and slope of a low relic beach ridge. Artefacts and shell were visible in areas of windblown sand without vegetation coverage. Here area has been subject to disturbance from past Defence use and trail bikes.	The site is located within the project area and adjacent to areas of proposed impacts.
38-4-0693	Stockton Rifle Range 2	Four loci of artefacts were identified within the former firing range. The site was assessed as likely to extend the across the rifle range. The site area had been subject to disturbance as a result of the construction of the rifle range and the use to the area by trial bikes.	The site is located within the project area and within areas of proposed impacts.
38-4-1843	Stockton Rifle Range Reburial	Reburial of Aboriginal cultural material salvaged from across the Stockton Rifle Range by Aboriginal community during remediation works.	The site is located within the project area and located outside of proposed impacts in the south west corner of the site.

AHIMS Site ID	Site Name	Site Description	Location relative to proposed impacts within the project area
38-4-0590	Fullerton 30	Artefact scatter including 10 Nobbys Tuff and 1 silcrete artefacts, including backed artefacts and a core in the mobile dunes.	Sites are located within the eastern portion of the project area outside areas of proposed impact.
38-4-0589	Fullerton 29	Shell midden and unidentified bone and charcoal in the mobile dunes.	
38-4-0588	Fullerton 28	A flake of Nobbys Tuff located on a deflating dune surface.	
38-4-0587	Fullerton 27	A flaked piece of Nobbys Tuff located adjacent to an old road within the dunes.	
38-4-0586	Fullerton 26	Artefact scatter of 10 flakes and flaked pieces of Nobbys Tuff within the mobile dunes.	
38-4-0585	Fullerton 25	Artefact scatter 36 Nobbys Tuff artefacts over an area of 100 metres by 40 metres. In the face of the mobile dune.	

* Note Burial sites understood to be recorded based on occurrence of anomalies on GPR study (ie. not confirmed).



Image Source: Nearmap (May2016)
Data Source: LPI NSW (2009), Architectus (2016), AHIMS (2016)

Legend

- | | |
|---|--|
| Site Boundary | + Burial |
| Fern Bay Complex Boundary | ● Isolated Find |
| ★ Aboriginal Resource and Gathering | ● Midden |
| ⊕ Artefact Reburial Site | ● Midden and Associated Artefact |
| ● Artefact Scatter (Open Camp Site) | P Potential Archaeological Deposit |

File Name (A4): R02/3772_016.dgn
20170505 11.53

FIGURE 4.1
Previously Recorded
Aboriginal Sites (AHIMS)

4.3 Previous Archaeological Investigations

Many of these sites associated with the project area have been recorded by Aboriginal parties and are not associated with available archaeological reports. It is understood that the burial recordings are based on the occurrence of anomalies identified during a Ground Penetrating Radar (GPR) and that the presence of human skeletal material has not been confirmed.

4.3.1 38-4-0895 – Fern Bay Complex

The main archaeological assessments undertaken for the Fern Bay site complex were undertaken in relation to the Fern Bay sewer line, with works being undertaken by McCardle Cultural Heritage (MCH 2004, 2005a and 2005b) and Nur-Run-Gee (2006) on behalf of Hunter Water Corporation. The outcomes of these assessments are discussed below. This site complex extends into the western portion of the project area, including a large portion of the area proposed for development (refer to **Figure 4.1**).

MCH (2004) undertook a survey and assessment of the sewer line that was proposed to service the residential area of Fern Bay. MCH (2004) identified that cultural materials were present throughout the survey area where disturbance resulted in the exposure of material that would previously have been in a sub-surface context. Based on this information and the fact that the survey area consisted of stabilised dune ridges in a resource-rich area, MCH (2004) stated that 'sub-surface deposits may exist throughout the survey area.' On this basis, MCH (2004) identified the Fern Bay site complex. The site was assessed as having high archaeological significance and it was recommended that test excavations be conducted prior to the commencement of the proposed works.

Subsequent archaeological investigations conducted within the Fern Bay site complex included:

- Archaeological ground surveys of the entire sewerage route
- Ground penetrating radar (GPR) study of the project area
- Geomorphological investigations at 3 borehole locations (each measuring 2m x 1m)
- Initial archaeological testing of 7 borehole locations, each measuring 1m x 1m (see MCH 2005a:26)
- Additional archaeological testing at two borehole locations (each measuring 1m x 1m), and two 2m x 2m test excavations at the proposed pump house location (see MCH 2005b:22).

Cultural material was recovered from five locations, with consolidated shell midden material and stone artefacts identified at two locations (FB8 and FB14). Excavations at these locations resulted in the recovery of over 100 stone artefacts and over 10kg of shell (predominantly oyster).

On the basis of this information, MCH (2005b) recommended that works in the vicinity of FB14 (located south of the intersection of Braid Rd and Fullerton St) and FB8 (located at the intersection of Rankin Rd and Fullerton St) be modified to reduce impacts in these areas of high sensitivity and that works in all other portions of the site complex should be monitored, with the potential to undertake salvage excavations as required.

Following completion of these investigations, the Hunter Water Corporation received a Section 90 Consent to Destroy with permit to collect in August 2005 for the construction of the Fern Bay Sewerage scheme and associated cultural salvage works. All project related ground disturbing works were monitored by Aboriginal party representatives and salvage excavations (salvage pits and shovel probes) were undertaken at 29 locations (see Nur Run Gee 2006). The cultural salvage investigations undertaken by Nur Run Gee

(2006) included the excavation of 32 m² of land to an average depth of approximately 1 metre below ground surface. The distribution of cultural material was variable however Nur Run Gee (2006) identified that there is the potential for archaeological deposits to be present within the Fern Bay site complex in any area that has not been subject to significant sub-surface disturbance.

The assessment that identified the Fern Bay Complex did not directly assess the current project area, as it included a survey along Popplewell Road located immediately west of the project area. Artefacts were identified along the boundary of the current project area as being visible through the fence. This report also noted the possible presence of burials within the Rifle Range as reported by the Aboriginal parties (McCardle 2004).

4.3.2 Previous archaeological assessment within the project area

An assessment of the northern portion of the project area (north of the central access road) was undertaken in 2003 (Umwelt 2003b). It provided a summary of the known archaeological patterns of the Outer Barrier of the Stockton Bight, including:

- Sites recorded within the vegetated dune field (the project area, aside from the eastern active dune field) are primarily small scatters of stone artefacts or small (likely single event) pipi middens
- Most evidence within the vegetated dunes is below the soil surface within the A horizon and only visible when there is disruption of the soil surface. This is the result of a combination of bioturbation, occupation processes (eg. trampling) and natural slope movement processes
- Sites currently exposed in the modern deflation basin (which comprises the low-lying area bordering the current frontal dune in the eastern portion of the project area) include both small scatters and middens along with more complex sites. However the exposed sites are at least partially dictated by the history of deposition and deflation in the location and the destructive forces of aeolian abrasion and
- None of the sites in the Outer Barrier have been dated. While sites have been associated with soil surfaces dated as far back as 4500BP the archaeological material may be much younger than the age of the dune stabilisation.

Umwelt (2003) identified sites within exposures created by vehicle movements. A heritage assessment of the Rifle range was conducted in 2008 and summarised the past Aboriginal assessments of the area (GML 2008). The assessment identified surface sites within the rifle range area have been subject to extensive disturbance and are unlikely to be associated with subsurface deposits. In areas developed as a part of the rifle range including locations of previous structures and the rifle range itself it was assessed as unlikely that any archaeological remains survive intact. The level of disturbance was considered to be to complete involving substantial cuts into the sand dunes and the lack of any stable vegetated dune surfaces. The assessment identified that the sites located in the east of the rifle range property on the active dunes were destroyed as a result of later sandmining (GML 2008).

As a part of the decommissioning of the Stockton Rifle Range remediation was undertaken. Monitoring of the ground disturbance works was undertaken by Aboriginal stakeholders including the collection of any Aboriginal objects identified (GML 2009). These works resulted in the salvage of 551 artefacts (75 per cent flaked pieces), with 545 artefacts of Nobby's Tuff. The assemblage also included 2 river cobbles utilised as grinding stones. The shell species recovered included rock oyster, cockle, venus shell, whelk and pipi. The collected Aboriginal material was reburied within the Stockton Rifle Range.

4.4 Archaeological implications for the Project Area

The outcomes of the review of the environmental and cultural context of the project area has a number of key implications for the project area in relation to the potential for additional archaeological sites to be present within the project area and the characteristics of any such sites. The project area contains a number of previously recorded archaeological sites consisting of deposits of stone artefacts and shell. These include the Fern Bay site complex (AHIMS # 38-4-0895) which is a comprehensive site complex demonstrated to contain significant archaeological deposits in a sub-surface context.

It is also considered likely that additional archaeological evidence may be present within the project area, particularly given the dynamic nature of the environment. The sections of the project area proposed for environmental protection have been subject to lower levels of disturbance, particularly within the heavily vegetated sections of stabilised dune at the northern and southern boundaries of the project area. In contrast, the establishment, ongoing use and decommissioning of the former rifle range within the portion of the project area subject to proposed development has resulted in significant impacts. However, it is possible that this disturbance has not extended to the depth of archaeological deposits and that intact or partially intact deposits may be present.

5.0 Survey

5.1 Survey Methodology

A pedestrian survey of all accessible areas within the area proposed for impact by residential development was undertaken to assess the potential impacts of the project, including the identification of sites that may be at risk from a potential residential development of the site. The areas of the site proposed for environmental protection were subject to limited survey and the easternmost portion of the study area within the beachfront and active transgressive dunes was not subject to survey as the proposed rezoning establishes protective mechanisms for this. These areas have been subject to previous assessments and the proposed rezoning of these areas for environmental protection (refer to **Figure 1.2**) ensures they will not be subject to impact as a part of the proposal.

The survey methodology complies with the survey requirements of OEH's *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*. During the survey all participants had the opportunity to discuss any potential impacts of the project on Aboriginal cultural heritage sites and values. Information recorded during the survey included:

- the nature of the landforms and vegetation
- the levels of visibility and exposure within the survey area
- the effects of erosion and disturbance
- the availability of Aboriginal resources, with a particular focus on the types of resource plants (bush tucker) that may be present in the project area
- detailed records of archaeological sites present
- the likelihood that potential archaeological deposits (PAD) may be present within the area proposed for development
- information provided by Aboriginal parties regarding the cultural significance/or cultural values of the area.

All sites and artefacts located were recorded to OEH standards. The archaeological and Aboriginal and cultural significance of the sites/artefacts was discussed with the registered Aboriginal parties participating in the survey and any recommendations for subsurface testing of sites and PADs was also specifically discussed.

5.2 Results of Survey

The survey was undertaken on the 21 September 2016 by a field team of an archaeologist and representatives of registered Aboriginal parties, as recorded in **Table 5.1**.

Table 5.1 Field Survey Team

Dates	Organisation	Representative
1/09/2016	Karuah Indigenous Corporation	Dave Feeney
	Mur-roo-ma	Rebecca Young
	Nun Run-gee	Lennie Anderson
	Worimi Local Aboriginal Land Council	Jamie Merrick
	Umwelt (archaeologist)	Alison Lamond

5.2.1 Effective Coverage

The survey was constrained by the level of vegetation coverage. Large portions of the area surveyed were covered with dense impenetrable vegetation which prevented access to the areas. A series of 17 transects were able to be completed (refer to **Figure 5.1** and **Table 5.2**). Ground visibility within the survey transects varied considerably with areas of no ground surface visibility due to dense vegetation and other areas of exposure primarily within surviving access tracks from the rifle range, trail bike tracks and exposures on the remaining steep dunes adjacent to the area proposed for impact.

As shown in **Table 5.2**, the level of effective coverage within the surveyed areas was generally quite low. This is reflective of the heavy vegetation coverage of much of the project area, as will be discussed below.



Image Source: Nearmap (May2016)
Data Source: LPI NSW (2009), Architectus (2016), AHIMS (2016)

0 100 250 500m
1:10 000

Legend

- Site Boundary
- Fern Bay Complex Boundary
- Survey Transect

FIGURE 5.1

Survey Transects

Table 5.2 Effective Coverage

Transect	Landform	MGA Start	MGA End	Survey Unit Area (m ²) approximately	Visibility %	Exposure %	Effective Coverage	Sites within Transect
1	Modified sand dunes (former Rifle Range)	387458 E 6361992 N	387437 E 6361813 N	9000 m ² (180 x 50m)	15%	20%	270m ² 3%	Stockton Rifle Range AS1 Stockton Rifle Range AS2
2	Modified sand dunes (former Rifle Range)	387437 E 6361813 N	387561 E 6361892 N	7500 m ² (150 x 50m)	10%	25%	187.5m ² 2.5%	
3	Modified sand dunes (former Rifle Range)	387561 E 6361892 N	387569 E 6361993 N	5000 m ² (100 x 50m)	40%	40%	800m ² 16%	Stockton Rifle Range AS3
4	Modified sand dunes (former Rifle Range)	387569 E 6361993 N	387760 E 6361952 N	10000 m ² (200 x 50m)	50%	10%	500m ² 5%	Stockton Rifle Range AS 4 Stockton Rifle Range AS5
5	Modified sand dunes (former Rifle Range)	387760 E 6361952 N	387983 E 6362009 N	9000 m ² (180 x 50m)	20%	15%	270m ² 3%	Stockton Rifle Range AS7
6	Modified sand dunes (former Rifle Range)	387930 E 6361997 N	387932 E 6361813 N	9500 m ² (190 x 50m)	80%	50%	3800m ² 40%	

Transect	Landform	MGA Start	MGA End	Survey Unit Area (m ²) approximately	Visibility %	Exposure %	Effective Coverage	Sites within Transect
7	Modified sand dunes (former Rifle Range)	387983 E 6362009 N	388104 E 6361917 N	7500 m ² (150 x 50m)	20%	20%	300m ² 4%	
8	Modified sand dunes (former Rifle Range)	388095 E 6362015 N	388114 E 6361823 N	10000 m ² (200 x 50m)	80%	50%	4000m ² 40%	
9	Modified sand dunes (former Rifle Range)	388113 E 6361947 N	388229 E 6361807 N	9500 m ² (190 x 50m)	10%	15%	142.5m ² 1.5%	38-4-0698
10	Modified sand dunes (former Rifle Range)	388229 E 6361807 N	388203 E 6362021 N	11000 m ² (220 x 50m)	80%	50%	4400m ² 40%	
11	Modified sand dunes (former Rifle Range)	388230 E 6361869 N	388362 E 6361818 N	7500 m ² (150 x 50m)	25%	30%	562.5m ² 7.5%	
12	Modified sand dunes	388362 E 6361818 N	388344 E 6362033 N	11000 m ² (220 x 50m)	40%	30%	1320m ² 12%	Stockton Rifle Range IF1

Transect	Landform	MGA Start	MGA End	Survey Unit Area (m ²) approximately	Visibility %	Exposure %	Effective Coverage	Sites within Transect
13	Modified sand dunes (access track)	388344 E 6362033 N	387458 E 6361992 N	45000 m ² (900 x 50m)	20%	20%	1800m ² 4%	38-4-1127 (burial incorrect coordinates) 38-4-1128 (burial incorrect coordinates) 38-4-1129 (burial incorrect coordinates)
14	Modified sand dunes (access track)	387569 E 6361993 N	387703 E 6362183 N	11500 m ² (230 x 50m)	5%	2%	11.5m ² 0.1%	Stockton Rifle Range Midden 1
15	Modified sand dunes (access track)	387703 E 6362183 N	388041 E 6362142 N	17500 m ² (350 x 50m)	15%	50%	1312.5m ² 7.5%	Stockton Rifle Range AS8
16	Modified sand dunes (access track)	387703 E 6362183 N	387480 E 6362114 N	12000 m ² (240 x 50m)	10%	50%	600m ² 5%	Stockton Rifle Range IF2 38-4-0692
17	Modified sand dunes	387532 E 6362127 N	387458 E 6361992 N	8000 m ² (160 x 50m)	10%	5%	40m ² 0.5%	38-4-1130 (burial incorrect coordinates)

5.3 Evaluation of Disturbance

The entire area surveyed consists primarily of modified dune formations as the area has been substantially impacted by the construction, maintenance and decommissioning of the rifle range (refer to **Figure 3.1**). As a part of the decommissioning the firing mounds and sand at the surface was sieved in the rifle range area south of the central access road. These works resulted in disturbance of the upper soil profile. Immediately north of the central access road a series of structures used during the life of the range have since been demolished. Other disturbance to the area north of the central access road includes the construction and decommissioning of the Links anti-aircraft battery, the construction of the electricity easement and the formation, maintenance and use of the northern access track adjacent to the boundary.

5.4 Archaeological Sites

Many of the newly identified sites are located within the Fern Bay site 38-4-0895 or potentially within 38-4-0693 (Stockton Rifle Range 2) as exposures within the larger sites. However they were recorded individually in accordance with OEH requirements and this information will be provided to AHIMS for the registration as separate sites to facilitate the management of the sites. The locations of all identified archaeological sites within Stockton Rifle Range and its vicinity are detailed in **Figure 5.2**.

5.4.1 Newly identified sites within Stockton Rifle Range

Eleven new site areas (nine within 38-4-0895- Fern Bay Complex) were identified during the survey and are detailed below and in **Figure 5.2**. AHIMS site cards for these sites have been submitted in accordance with the NPW Act.

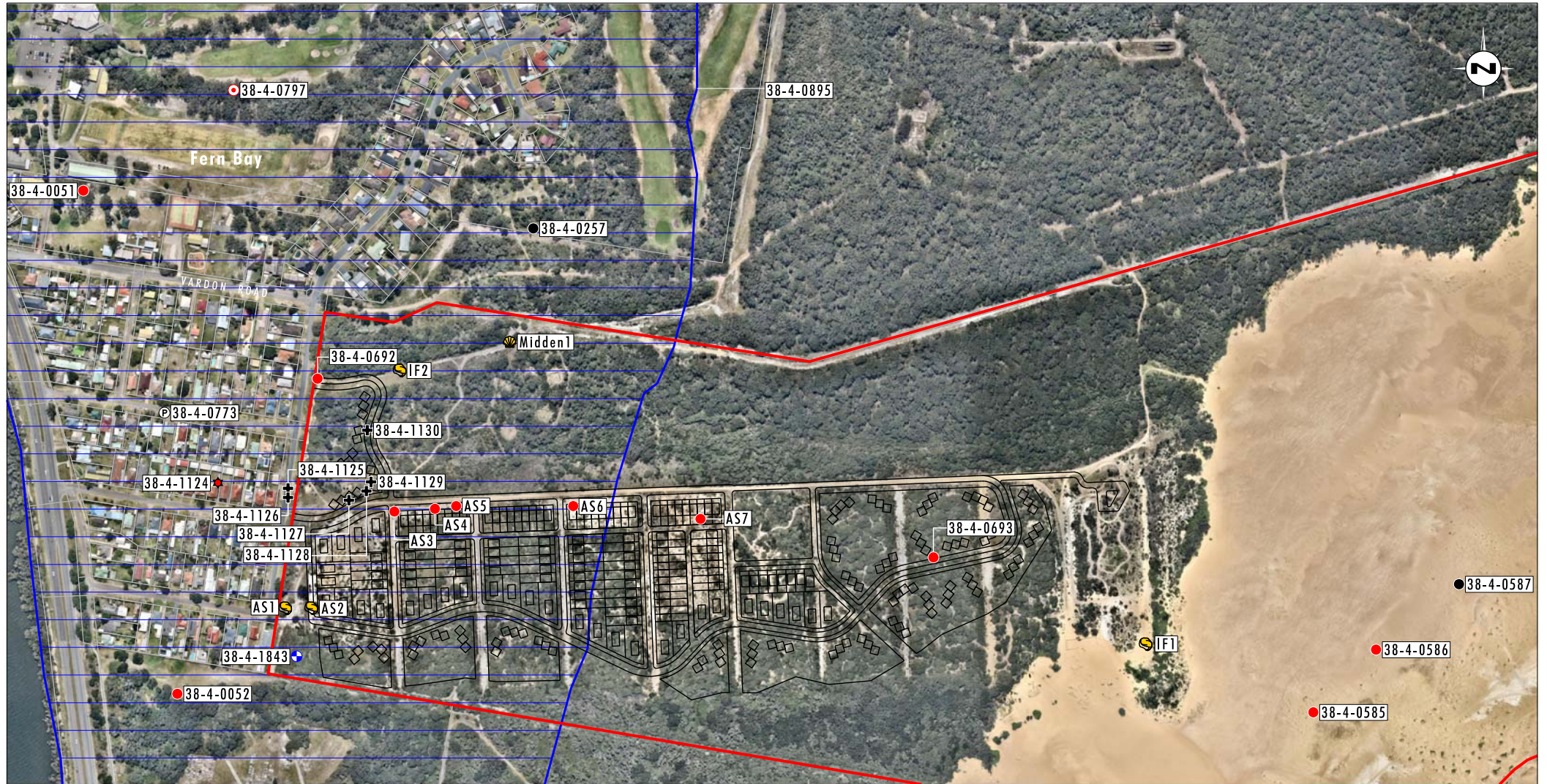


Image Source: Nearmap (May2016)
Data Source: LPI NSW (2009), Architectus (2016), AHIMS (2016)

0 100 200 300 m
1:6000

Legend

- | | | |
|---|---|--|
| Site Boundary | + Burial | ● Shell |
| Fern Bay Complex Boundary | ● Isolated Find | ● Shell and Artefact |
| ★ Aboriginal Resource and Gathering | ● Midden | |
| ⊕ Artefact Reburial Site | ● Midden and Associated Artefact | |
| ● Artefact Scatter (Open Camp Site) | Ⓟ Potential Archaeological Deposit | |

File Name (A4): R02/3772_019.dgn
20170505 11.55

FIGURE 5.2
Newly Identified
Archaeological Sites

5.4.1.1 Stockton Rifle Range AS1 – 38-4-1893 (387437E 6361877N)

Stockton Rifle Range AS1 consists of a scatter of 10 flakes and broken flakes of Nobbys Tuff and shell within an exposure extending across a vehicle access track adjacent to the fence of the Rifle Range near the intersection of Popplewell Road and Braid Road (**Plate 5.1**). The shell was highly fragmented, weathered and sparsely scattered. Diagnostic fragments included oyster and whelk. The site extent is approximately 40 by 30 metres in an area with 50 per cent surface visibility. The area of visibility extended beyond the site however no further artefacts were visible. The site is in poor condition as a result of the previous impacts to the area as a result of the construction, demolition and remediation of the Rifle Range.



Plate 5.1 Across scatter within Stockton Rifle Range AS1, view to the west

© Umwelt, 2016

5.4.1.2 Stockton Rifle Range AS2 – 38-4-1894 (387465E 6361877N)

Stockton Rifle Range AS2 consists of a scatter of 6 artefacts and shell fragments within an erosion exposure which included gravel adjacent to an access track (**Plate 5.2**). The site extent is approximately 15 by 15 metres. The area of visibility extended beyond the site however no further artefacts were visible. The artefacts consisted of broken flakes of Nobbys Tuff interspersed with weathered highly fragmented and scattered pieces of shell. The area also included weathered mechanically cut bone. The site is in poor condition as a result of the previous impacts to the area as a result of the construction, demolition and remediation of the Rifle Range.



Plate 5.2 Across site within Stockton Rifle Range AS2, view to the east

© Umwelt, 2016

5.4.1.3 Stockton Rifle Range AS3 – 38-4-1895 (387554E 6361982N)

Stockton Rifle Range AS3 consists of a flake and broken flake of Nobbys tuff. They are located within an exposure extending across a vehicle access track currently utilised by trail bikes (**Plate 5.3**). The site extent is approximately 1 by 1 metre in an area with 90 per cent surface visibility within the track and 10 per cent surface visibility around the track. The site is in poor condition as a result of the previous impacts to the area as a result of the construction, demolition and remediation of the Rifle Range and used of the area by recreational vehicles.



Plate 5.3 Across Stockton Rifle Range AS3 view to the south

© Umwelt, 2016

5.4.1.4 Stockton Rifle Range AS4 – 38-4-1896 (387598E 6361985N)

Stockton Rifle Range AS4 consists of a flake and broken flake of Nobbys tuff. They are located within an exposure next to the central gravel access track near the intersection with one of the north south access tracks (**Plate 5.4**). The site extent is approximately 5 by 5 metres in an area with 40 per cent surface visibility. The area of visibility extended beyond the site however no further artefacts were visible, the ground surface visibility continued outside the site area. The site is in poor condition as a result of the previous impacts to the area as a result of the construction, demolition and remediation of the Rifle Range.



Plate 5.4 Across Stockton Rifle Range AS4 view to the south southwest

© Umwelt, 2016

5.4.1.5 Stockton Rifle Range AS5 – 38-4-1897 (387621E 6361988N)

Stockton Rifle Range AS5 consists of a scatter of 8 flakes and broken flakes of Nobbys Tuff, located within an exposure next to the central gravel access track near the intersection with one of the north south access tracks (**Plate 5.5**). The site is located within an area with 40 per cent surface visibility. The area of visibility extended beyond the site however no further artefacts were visible. The site is in poor condition as a result of the previous impacts to the area as a result of the construction, demolition and remediation of the Rifle Range.



Plate 5.5 Across Stockton Rifle Range AS5 view to the west.

© Umwelt, 2016

5.4.1.6 Stockton Rifle Range AS6 – 38-4-1898 (387748E 6361988N)

Stockton Rifle Range AS6 consists of a large scatter of 26 Nobbys Tuff artefacts, primarily flakes and broken flakes and one silcrete broken flake (**Plate 5.6**). The site extends over an area of 80 by 30 metres and is located within an exposure next to the central gravel access track (**Plate 5.7**). The site is located within an area with 40 per cent surface visibility. The site boundaries are dictated by surface visibility due to introduced gravel of the access track and increased vegetation. The site is in poor condition as a result of the previous impacts to the area as a result of the construction, demolition and remediation of the Rifle Range and use of the area by recreational vehicles.



Plate 5.6 Broken silcrete Bondi point

© Umwelt, 2016



Plate 5.7 From centre of Stockton Rifle Range AS 6, view to the southwest

© Umwelt, 2016

5.4.1.7 Stockton Rifle Range AS7 – 38-4-1899 (387886E 6361974N)

Stockton Rifle Range AS7 consists of a scatter of 20 Nobbys Tuff artefacts, primarily flakes and broken flakes and one silcrete broken flake. The site extends over an area of 10 by 30 metres and is located within an exposure next to the central gravel access track immediately adjacent to and area of introduced soil fill (**Plate 5.8**). The site is located within an area with 40 per cent surface visibility. Visibility is reduced outside the site boundary due to the introduced fill and dense vegetation. The site is in poor condition as a result of the previous impacts to the area as a result of the construction, demolition and remediation of the Rifle Range and ongoing vehicle access to the area.



Plate 5.8 Across Stockton Rifle Range AS7 view to the northwest

© Umwelt, 2016

5.4.1.8 Stockton Rifle Range IF 1 – 38-4-1903 (388370E 6361838N)

Stockton Rifle Range IF1 consists of a tuff flake found near 2 pieces of weathered bone (**Plate 5.9**). The site is within an area of 1 by 2 metres and is located within an exposure as the base of a dune (**Plate 5.10**). The site is located within an area with 90 per cent surface visibility which continued for several metres surrounding the artefact. The wider area surrounding the site is has been subject to revegetation works.

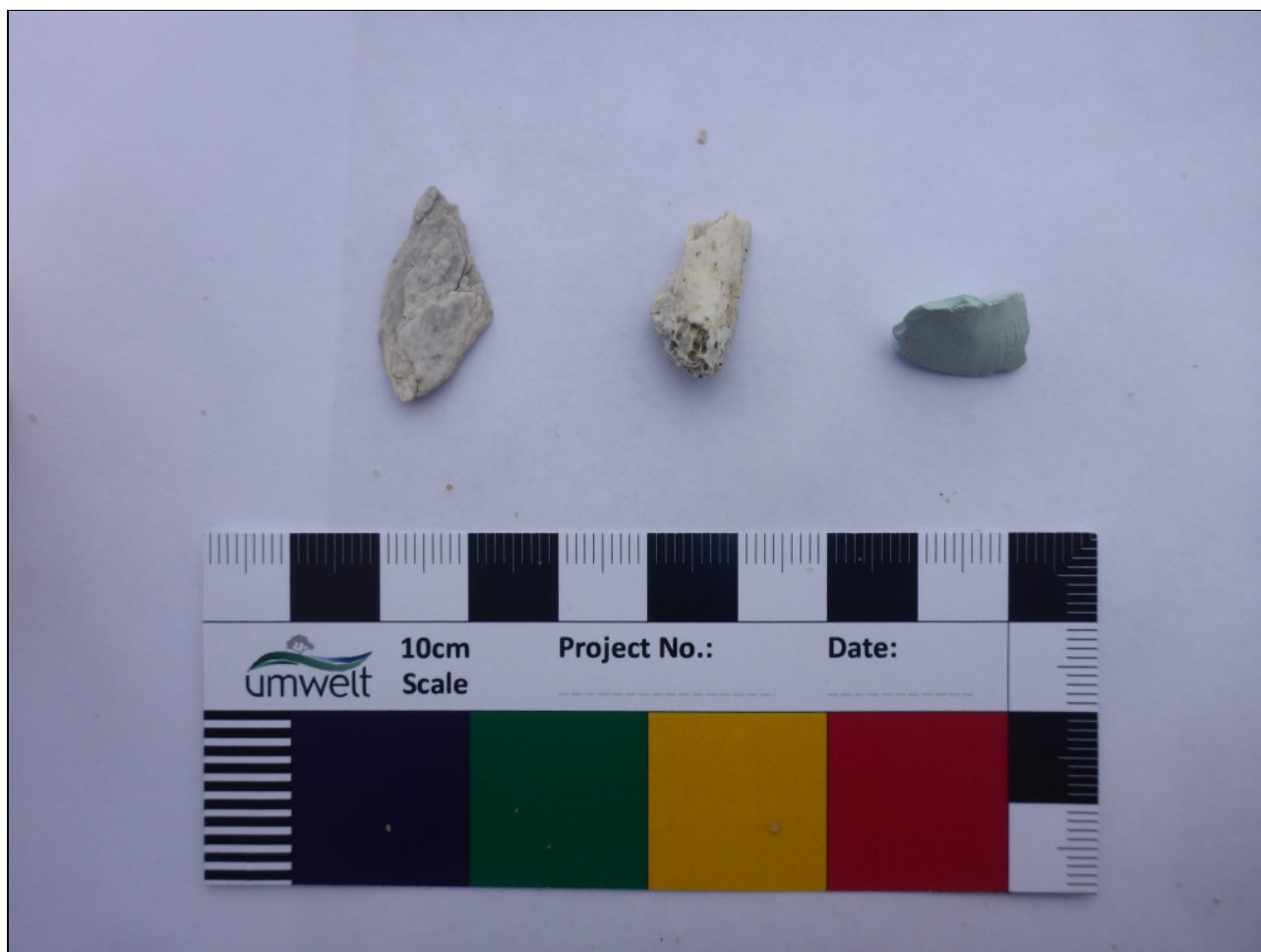


Plate 5.9 Artefact and pieces of weathered bone

© Umwelt, 2016



Plate 5.10 Across Stockton Rifle Range IF1 view to the south

© Umwelt, 2016

5.4.1.9 Stockton Rifle Range Midden 1 – 38-4-1902 (387679E 6362166N)

Stockton Rifle Range Midden1 consists of scattered fragments of shell (dominated by oyster) adjacent to an access track (surfaced with introduced gravel) leading to a concrete structure within the Links anti-aircraft battery (**Plate 5.11**). The visible surface site extends over an area of approximately 2 metres by 5 metres within an exposure with 70 per cent surface visibility. The site boundaries are dictated by surface visibility due to introduced gravel of the access track and increased vegetation. The area surrounding the site has been subject to significant disturbance due to the construction and operation of the Links Anti-aircraft Battery.



Plate 5.11 Across Stockton Rifle Range Midden 1, view to the northeast

© Umwelt, 2016

5.4.1.10 Stockton Rifle Range AS8 – 38-4-1901 (387770E 6362174N)

Stockton Rifle Range AS8 consists of a scatter of 15 Nobbys Tuff artefacts, primarily flakes and broken flakes and one silcrete flake. The site extends over an area of 50 by 10 metres along the southern edge of the access track adjacent to the boundary with the Worimi Regional Park within the electricity easement (**Plate 5.12**). The landform is gently to moderately sloping towards the west. Artefacts were visible in areas of exposure however visibility was low across much of the area due to the high levels of vegetation.



Plate 5.12 Across Stockton Rifle Range AS 8 downslope, view to the west southwest

© Umwelt, 2016

5.4.1.11 Stockton Rifle Range IF2 – 38-4-1900 (387561E 6362135N)

Stockton Rifle Range IF2 consists of a tuff broken flake found near 2 fragments of highly weathered shell located within an electricity easement (**Plate 5.13**). The site is located within an undulating area immediately east of the steep dune beneath Popplewell Road. The site located within an exposure in an access track with 40 per cent surface visibility with no visibility in the surrounding area.



Plate 5.13 Across the site, view to the south west

© Umwelt, 2016

5.4.2 Previously recorded sites within the Project area

5.4.2.1 38-4-0693

Access to the central coordinate of this site (recorded as a scatter located between 2 of the firing mounds over and area 200 metres by 100 metres) was attempted during the survey. However at the time of survey the vegetation in this area was very dense and the only accessible areas nearby were a series of winding established trail bike tracks. No artefacts were observed however they were potentially salvaged during the Department of Defence decommissioning works which involved the mechanical sieving of the firing mounds and the upper soil profile.

5.4.2.2 38-4-0692

No artefacts were visible within the site area adjacent to the boundary fence. Aboriginal representatives participating in the survey also participated in decommissioning works for the Department of Defence described the addition of sand to the area to cover and protect the site (recorded as a scatter of 7 artefacts exposed in trail bike tracks).

5.4.2.3 Burial Sites (38-4-1127, 38-4-1128, 38-4-1129 and 38-4-1130)

The coordinates of these sites were visited during the survey. While the site cards for these sites are no longer available on AHIMS, the site cards were submitted by Mr Leonard Anderson who was present on the survey and confirmed the coordinates currently available on AHIMS are incorrect. Mr Anderson advised that the potential burials are in fact located in the southwest corner of the project area, in the vicinity of the boundary fence with Popplewell Road and outside the rifle range within the road reserve. One in particular is located at the intersection of Braid Road and Popplewell Road. The identification of the sites was associated with ground penetrating radar which was undertaken as part of an assessment for a project undertaken outside the boundaries of the current project area. OEH archaeologists Richard Bath and Peter Saad were consulted with regards to the incorrect coordinates; they advised that a submission to AHIMS should be prepared for the correction of the coordinates or the removal of the sites from the register if the correct coordinates cannot be determined.

Updated site cards were submitted to AHIMS correcting the locations of the burial sites based on information provided by the site recorder Leonard Anderson (correct site coordinates provided in **Table 5.3** below). Confirmation of the correction of the site locations on the AHIMS registered was provided 26/6/2017. One of the correct locations is outside the project area. The remaining three are located on the south west corner outside areas proposed for impact.

Table 5.3 Corrected Previously Recorded Burial Site Locations

AHIMS site ID	Correct Easting (MGA)	Correct Northing (MGA)
38-4-1127	387432	6361816
38-4-1128	387591	6362226
38-4-1129	387436	6361848
38-4-1130	387440	6361869

5.4.3 Assessment of Archaeological Potential

Archaeological potential within the project area was assessed with reference to visible surface sites and the known archaeological patterns for the region. The areas of proposed impact by residential development south of the central access road have been subject to high levels of disturbance. This area was the site of the firing range and the upper portions of the soil profile have been disturbed through its construction, use and decommissioning. The Aboriginal parties that participated in the decommissioning works describe it as involving the excavation and sieving of the upper portion of the soil profile and the firing mounds for the removal of metal objects and during this process Aboriginal objects were also salvaged from the mechanical sieve. However artefacts were still visible at the surface in the decommissioned area in areas of exposure during the survey. This could be the result of ongoing erosion exposing further artefacts within the soil profile indicating the potential for subsurface deposits or since all the artefacts identified in the survey were small, artefacts being redeposited with the sieved sand which were not captured with the mechanical sieve and ejected with the small fraction. The area north of the central access road has been also been subject to disturbance through the construction of the Links anti-aircraft battery, access track and the electricity easement. Geotechnical testing of the project area shows the sand extends for more than 1 metre in depth throughout these areas of disturbance (Douglas Partners 2016). There is no way to determine the depth of disturbance throughout the area; therefore it is possible that deeper sections of the soil profile remain undisturbed. The archaeological pattern for the area demonstrates the artefacts can be present at depth throughout the Fern Bay area (MCH 2005b and Nur Run Gee 2006) and it is possible that deposits may be present below the current depth of disturbance.

The areas to the north and south of the disturbed central area that are proposed for environmental protection consist of vegetated sections of stabilised dunes. These areas have higher archaeological potential as they are within landforms associated with deposits of Aboriginal objects and have been subject to substantially less disturbance than the modified landforms within the area for proposed development. Therefore they have increased potential to retain intact deposits.

The eastern portion of the project area also proposed for environmental protection is a dynamic landform that is currently subject to processes of erosion and deposition. However it still has the potential to contain sites and buried soil profiles if areas exist where windblown sand has covered over former stabilised surfaces.

5.5 Aboriginal Party Response to Survey

During the survey the registered Aboriginal parties identified the importance of the area to the north of the central access road as a culturally sensitive area that needs to be protected in order to protect story lines. The Aboriginal parties identified that, due to the high values, no development should occur in this area except facing Popplewell Road in line with existing houses. The area in the south west corner of the site was identified by the Aboriginal parties as an area containing burials that also requires protection. Similarly, the Aboriginal parties identified that the burial reported at the intersection of Braid Road and Popplewell Road, should be avoided and this intersection should not be used for access into the development. The entire area was identified as important as a part of the Fern Bay site complex.

The registered Aboriginal parties provided detail for mapping to outline cultural sensitivity and recommendations (refer to **Figure 2.1**). *Further information may be added after review by Registered Aboriginal Parties*

5.6 Survey Conclusions

Aboriginal objects were identified in areas of exposure across the survey area, with almost all of the sites identified in areas of disturbance within the heavily modified landscape. As exposures due to previous disturbance are a large factor in the current visibility of sites a lack of identified surface artefacts in the less disturbed portions of the project area does not necessarily indicate a lack of sites, simply low visibility.

The central portion of the study area has been subject to modification and disturbance to the extent that the former dune crests have been levelled or removed. However as the depth of the impact cannot be determined, there is still the potential for archaeological deposits at depth (refer to **Figure 5.3**). Given that the visibility of surface scatters is largely reflective of disturbance, the location of surface material is not necessarily an indicator of the location of subsurface deposits. Registered Aboriginal parties identified the southwest corner and area to the north of the access road as areas of cultural sensitivity and specified that the proposed development should be redesigned to avoid impacts in these areas.

Survey effort was primarily limited to areas of proposed impact partly due to the dense vegetation particularly in the northern and north-eastern portions of the property. These areas are of increased archaeological potential due to the lack of disturbance within the areas. The locations of previously recorded sites in the eastern most end of the property, that have been described in previous assessments as destroyed by sandmining (refer to **Section 4.3.2**) were not assessed. These areas are proposed for environmental protection and will not be subject to any impacts as a result of the proposed rezoning or residential development. Should impacts change and include these areas of previously recorded sites of the active seaward dune further survey would be required.

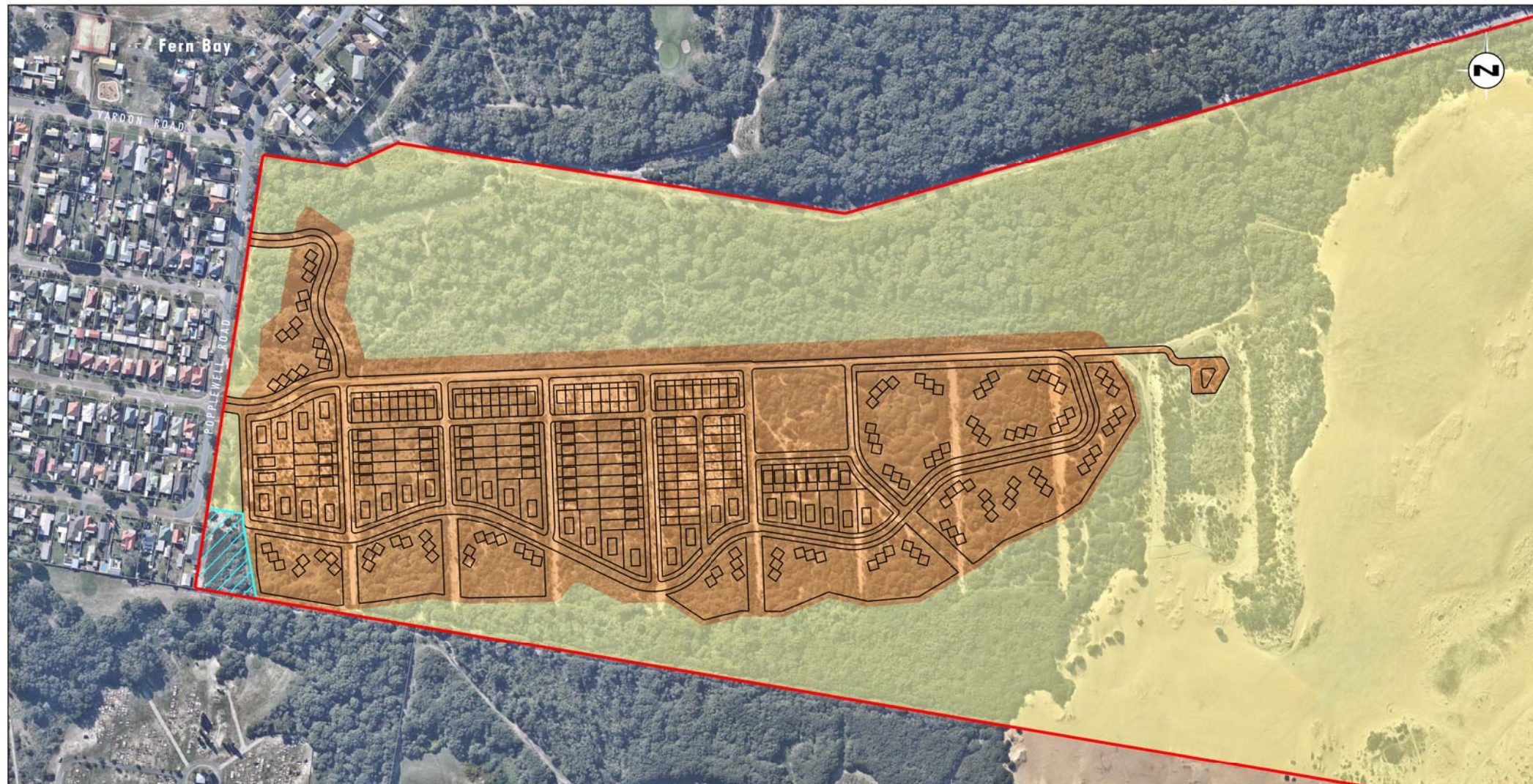


Image Source: Nearmap (May2016)
Data Source: LPI NSW (2009), Architectus (2016)

Legend

- Site Boundary
- Area Not Assessed for Impact
- Requires AHIP
- Burial Area

FIGURE 5.3

Archaeological Sensitivity
Stockton Rifle Range

6.0 Significance Assessment

The Burra Charter defines cultural significance in terms of aesthetic, scientific, historic and social values. Aboriginal cultural heritage is typically assessed according to its social and scientific significance; however other values may also be of importance. The assessment of cultural significance is critical in establishing mitigation and management strategies for cultural heritage (refer to Pearson and Sullivan, 1995:21).

The assessment of significance provides a guideline for determining appropriate mitigation and management strategies. The relationship between levels of significance and management strategies can be summarised as follows:

- High significance – the site should be conserved and protected from the impacts of development, where possible.
- Moderate significance – the site should be protected if possible, however, if impacts to the site are unavoidable, appropriate mitigation strategies should be implemented prior to impact.
- Low significance – the site should be protected if possible, however, if impacts to the site are unavoidable, the presence of the site should not impede the proposed development.

6.1 Aboriginal Cultural Significance

As Aboriginal cultural significance relates to the values of a site, place or landscape to Aboriginal people, it must be determined by Aboriginal people. The registered Aboriginal parties participating in the project are therefore the appropriate stakeholders to assess the significance of their cultural heritage. In assessing this significance, a range of factors may be considered and this can extend beyond the physical presence of a site and its contents to intangible aspects of the cultural landscapes. Archaeological material, cultural knowledge, natural resources and landscape attributes may all be considered.

The registered Aboriginal parties who participated in the survey provided the following statements with regard to significance:

- The northern side of the current access road has very significant areas and no development should occur there.
- There are known burials near Popplewell and Braid Roads and in the south west corner of the project area. No development should occur there.

The registered Aboriginal parties' survey response is provided in **Appendix B**

Discussions with Lennie Anderson who recorded the burial sites on AHIMS while working for National Parks and Wildlife Service determined the burial sites were recorded on AHIMS in incorrect locations. Lennie identified three of the burial locations in the southwest corner of the site adjacent to the Popplewell Road boundary fence and one located to the north outside the project area behind houses on Popplewell Road near the Worimi Conservation Lands access track. This information was provided to AHIMS and the locations of the Registered Burials have been corrected (confirmed 26/6/2017, refer to **Section 5.4.2.3**).

6.2 Scientific (Archaeological) Significance

The criteria applied to the assessment of archaeological significance are listed in **Table 6.1**. The significance of the new sites identified within the project area is assessed in **Table 6.2** with reference to the criteria described below. Many of these sites are a part of the Fern Bay Site complex (AHIMS #38-4-0895) but have been assessed individually as a result of the size and variation across the larger site.

The artefact scatters and middens identified within the area proposed for development are examples of relatively common site types and contain archaeological evidence comparable to sites throughout the region. They have all been subject to significant levels of disturbance in association with the construction, use and decommissioning of the Rifle Range and, as a result, have little to no integrity, with the exception of Stockton Rifle Range AS 8 and Stockton Rifle Range Midden 1. These two sites are located in the northern portion of the project area within exposures created within vehicle access tracks in areas of lower previous disturbance with greater potential for integrity. With reference to the criteria listed in **Table 6.1**, the sites within the project area are assessed as having low archaeological potential.

Table 6.1 Criteria for Assessment of Archaeological Significance of the Sites

Criterion	Low	Moderate	High
Rarity	The site within the surrounding landscape, its integrity, contents and/or potential for sub-surface artefacts, are common within the local and regional context.	The site within the surrounding landscape, its integrity, contents and/or potential for sub-surface artefacts, are common within the regional context but not the local context.	The site within the surrounding landscape, its integrity, contents and/or potential for sub-surface artefacts, are rare within the local and regional context.
Representative-ness	This site, when viewed in relation to its integrity, contents and/or potential for sub-surface artefacts, is common within a local and regional context and sites of similar nature (or in better condition) are already set aside for conservation within the region.	This site, when viewed in relation to its integrity, contents and/or potential for sub-surface artefacts, is uncommon within a local context but common in a regional context and sites of similar nature (or in better condition) are already set aside for conservation within the region.	This site, when viewed in relation to its integrity, contents and/or potential for sub-surface artefacts, is uncommon within a local and regional context and sites of similar nature (or in better condition) are not already set aside for conservation within the locality or region.
Research potential	The site, when viewed in relation to its integrity, contents and/or potential for sub-surface artefacts has limited potential to contribute to a greater understanding of how Aboriginal people lived within this area or region.	The site, when viewed in relation to its integrity, contents and/or potential for sub-surface artefacts has moderate potential to contribute to a greater understanding of how Aboriginal people lived within this area or region.	The site, when viewed in relation to its integrity, contents and/or potential for sub-surface artefacts has high potential to contribute to a greater understanding of how Aboriginal people lived within this area or region.

Criterion	Low	Moderate	High
Education potential	The site is not readily accessible and/or when viewed in relation to its contents, integrity and location in the landscape has limited suitability to be used for educational purposes. Other sites with higher education potential are known to be present in the local area and region.	The site is not readily accessible and/or when viewed in relation to its contents, integrity and location in the landscape provides a tangible example that is suitable to assist in educating people regarding how Aboriginal people lived in this area or region. However, other sites with higher education potential are known or expected to be present in the local area or region.	The site is readily accessible and/or when viewed in relation to its contents, integrity and location in the landscape, provides a very good tangible example that is suitable to assist in educating people regarding how Aboriginal people lived in this area or region. Other sites of higher education potential are generally not known to exist in the local area or region.
Integrity	Stratigraphic integrity of the site has clearly been destroyed due to major disturbance/loss of topsoil. The level of disturbance is likely to have removed all spatial and chronological information.	The site appears to have been subject to moderate levels of disturbance, however, there is a moderate possibility that useful spatial information can still be obtained from sub-surface investigation of the site, even if it is unlikely that any useful chronological evidence survives.	The site appears relatively undisturbed and there is a high possibility that useful spatial information can still be obtained from sub-surface investigation of the site, even if it is still unlikely that any useful chronological evidence survives.

Table 6.2 Assessment of Archaeological Significance

Archaeological Site	Rarity Value	Representative Value	Research Potential	Educational Potential	Integrity	Overall Archaeological Significance
Stockton Rifle Range AS1	Low	Low	Low	Low	Low	Low
Stockton Rifle Range AS 2	Low	Low	Low	Low	Low	Low
Stockton Rifle Range AS3	Low	Low	Low	Low	Low	Low
Stockton Rifle Range AS4	Low	Low	Low	Low	Low	Low
Stockton Rifle Range AS5	Low	Low	Low	Low	Low	Low

Archaeological Site	Rarity Value	Representative Value	Research Potential	Educational Potential	Integrity	Overall Archaeological Significance
Stockton Rifle Range AS6	Low	Low	Low	Low	Low	Low
Stockton Rifle Range AS7	Low	Low	Low	Low	Low	Low
Stockton Rifle Range AS8	Low	Low	Low	Low	Low to Moderate	Low
Stockton Rifle Range IF1	Low	Low	Low	Low	Low	Low
Stockton Rifle Range IF2	Low	Low	Low	Low	Low	Low
Stockton Rifle Range Midden1	Low	Low	Low	Low	Low to Moderate	Low
38-4-0692	Low	Low	Low	Low	Low	Low
38-4-0693	Low	Low	Low	Low	Low	Low

The locations of the sites within the active dunes at the eastern end of the project area are well outside of any potential impacts and these sites are not subject to assessment (refer to **Section 5.4.2**). The burial sites (38-4-1127, 38-4-1128, 38-4-1129 and 38-4-1130) are not assessed for their archaeological significance as the registered coordinates are incorrect and the sites are not located within the area proposed for development (refer to **Section 5.4.2.3**). It is also difficult to assess the significance of the potential burial sites as the presence or absence of skeletal material has not been confirmed.

The disturbance of the project area is a major factor in the archaeological potential and significance of the various portions of the project area. The central disturbed portion within the footprint of the rifle range is of low archaeological significance due to the low integrity and research potential of the area. The vegetated areas to the north and south of the former rifle range have higher archaeological potential due to the lack of disturbance within these areas. Due to the typical site distribution within the Fern Bay area it is likely that Aboriginal objects occur within these areas and there is potential for undisturbed deposits. Therefore the vegetated areas of intact or semi-intact dunes to the north and south of the proposed development area have moderate to high archaeological significance. The easternmost portion of the site consisting of the active beachfront dunes has lower archaeological potential due to the dynamic nature of the landform which is constantly moving. There is the potential for buried soil profiles to occur, however portions of this area were utilised for sand mining (GML 2008).

7.0 Assessment of Harm Associated with the Project

This assessment is related to the rezoning of the former Stockton Rifle Range site to facilitate future residential development (refer to **Section 1.0**). This rezoning will include an area rezoned for residential development while the remainder of the site is proposed to be rezoned for environmental protection. The act of rezoning itself does not have the potential to cause harm to Aboriginal objects, however the rezoning of the central portion of the project area (centred on the former rifle range) for residential development will create a pathway for the change in land use and future potential impacts. The proposed rezoning of the remainder of the project area for environmental protection provides a planning mechanism to protect areas from harm.

The proposed rezoning of the project area will not directly result in harm to Aboriginal objects. However should residential development occur in the future as a result of the rezoning, harm will occur. Should any future planning approval for this development be approved in accordance with the current Masterplan, it will result in harm to recorded Aboriginal archaeological sites is listed below in **Table 7.1**. In addition, it has been identified that the area subject to proposed development is archaeologically sensitive and therefore there is the potential that harm will occur to any sub-surface deposits that may be present within this area but not currently visible.

The locations of these sites are detailed in **Figure 5.2**.

Table 7.1 Harm to identified Aboriginal Sites

Harm	Site
Located within the area subject to impacts as a result of proposed master plan	38-4-0692
	38-4-0693
	Stockton Rifle Range AS1
	Stockton Rifle Range AS2
	Stockton Rifle Range AS3
	Stockton Rifle Range AS4
	Stockton Rifle Range AS5
	Stockton Rifle Range AS6
	Stockton Rifle Range AS7
	Current incorrect locations of Burial Sites (38-4-1127, 38-4-1128, 38-4-1129 and 38-4-1130)
Located within project area outside of any proposed impacts- no harm	38-4-1843
	38-4-0590

Harm	Site
	38-4-0589
	38-4-0588
	38-4-0587
	38-4-0586
	38-4-0585
	Stockton Rifle Range IF1
	Stockton Rifle Range IF2
	Stockton Rifle Range Midden 1

Note the correct locations of the recorded burial sites are located outside the area subject to development (refer to **Section 5.4.2.3**).

8.0 Mitigation Strategies

There are a range of management strategies that have been developed for the project area that include varying levels of mitigation of identified or potential harm. These management strategies have also been developed in consultation with the registered Aboriginal stakeholder representatives and in accordance with OEH's *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales*.

8.1 Mitigation Strategies

8.1.1 Strategy 1 Site Conservation

This management strategy would involve the conservation of all or part of the project area. The conservation of the entire project area would not allow for any residential development of the site.

The proposal rezones the majority of the project area for environmental protection with residential development restricted to the areas within the project area previously disturbed as a result of construction and use of the rifle range. It is noted that the Aboriginal parties for the project have identified the need for a conservation outcome. While environmental protection zoning does not ensure conservation in perpetuity any change to the zoning of the area in the future would require reassessment and further consideration of cultural values. The areas proposed for environmental protection include the less disturbed areas of higher archaeological potential of the northern section adjacent to Worimi Regional Park, the southern section and the active dune field in the east. The current proposed Masterplan also avoids impact to the area of cultural concern associated with burials in the southwest corner of the project area.

8.1.2 Strategy 2 Site Destruction with Salvage

This mitigation strategy would involve the completion of archaeological testing and salvage works within the area of proposed residential development prior to any impacts in the area. Based on the outcomes of initial test excavations, it may be necessary to undertake further targeted subsurface salvage and/or monitoring of surrounding proposed impact areas. All surface objects within areas of impacts would be subject to collection.

This assessment determined the potential for archaeological deposits at depth throughout the area proposed for impact. The nature and extent of these deposits cannot be investigated through archaeological testing under the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010a) due to the proximity to recorded burial and midden sites and logistical issues (as it is not possible undertake 50 cm square excavations (as required by the code) to the required depth in the sand of the project area). Therefore archaeological investigation of areas of archaeological potential subject to harm as a result of the proposed development should be undertaken under an Aboriginal Heritage Impact Permit (AHIP) prior to impacts to the site.

Despite the assessment of low archaeological (scientific) significance for the surface deposits identified throughout the portion of the site area proposed for impact, the registered Aboriginal parties requested (from an Aboriginal cultural perspective) that all visible Aboriginal cultural material within the areas subject to impact be identified and collected prior to the commencement of ground disturbing works associated with any future development works.

8.1.3 Strategy 3 Site Destruction without Salvage

This management strategy would involve proceeding with construction of the residential development and the subsequent disturbance to any cultural material that may be present in area of proposed impact without any further salvage. As discussed above this assessment identified a number of archaeological sites and areas of subsurface archaeological potential and it is proposed that, further investigation of the archaeological potential of the project area is required to clarify the archaeological significance.

This strategy is not considered acceptable from an Aboriginal cultural perspective, with the registered Aboriginal parties identifying the need for the salvage of artefacts (regardless of context) prior to the commencement of works. The registered Aboriginal parties have recommended the subsurface investigation of the entire impact area including areas subject to substantial previous disturbance.

Based on the discussions above, it is considered appropriate to adopt **Strategy 2**.

9.0 Recommendations

The following management and mitigation recommendations have been developed with consideration of the cultural and archaeological landscape, the cultural and archaeological significance of the project area and the potential impacts of the proposed development.

It is recognised that recommendations provided from an Aboriginal cultural perspective may differ to those based on an archaeological perspective. Scope is therefore provided for the inclusion of both sets of recommendations.

9.1 Aboriginal party recommendations

The recommendations presented below were provided by registered Aboriginal party representatives throughout the consultation process:

- No development should occur on the north side of the current access road that runs through the project area including no establishment of roads. The only residential construction that may be permissible in this area should occur on the current Popplewell Road frontage.
- The south western corner of the project area is the location of previously recorded burials and the reburial of artefacts collected during Defence remediation works. No impact should occur in this area.
- Surface collection of all sites to be impacted should be undertaken.
- Due to the dense vegetation during the survey the vegetation should be removed with rubber tracked machinery (or burnt) and further survey and recording and collection of any sites discovered should occur.
- Excavation of test pits to investigate the sites identified.
- Full salvage excavation of the development footprint where excavations to the natural ground surface will occur including structural supports and drainage.
- The artefacts could be potentially stored at Worimi LALC with the artefacts to be reburied when works are completed.

Figure 2.1 was developed with the Registered Aboriginal Parties to identify areas of cultural sensitivity and provide further detail to mitigation recommendations

9.2 Archaeological recommendations

The following recommendations have been developed in light of the archaeological context of the region, the findings of the survey, the archaeological assessment of the project area, the potential impacts of the proposed residential development and current cultural heritage legislation.

- From an archaeological perspective, there are no factors that should prevent the rezoning of the project area as described throughout this report. However, any subsequent proposal to rezone areas currently proposed for environmental protection would require additional assessment as the current assessment does not involve any consideration of impacts within these areas.
- Should the rezoning be approved, any future development activities within the section of the project area zoned 'Residential' should occur with reference to the recommendations provided below.
- DHA should ensure that its employees and contractors are aware that it is an offence under Section 86 of the NPW Act to harm or desecrate an Aboriginal object unless that harm or desecration is the subject of an Aboriginal Heritage Impact Permit (AHIP).
- DHA should apply to the Director-General of OEH for an AHIP in accordance with Section 90 of the NPW Act, with this AHIP to cover the entirety of the impact area on the finalised master plan. The need to cover the entirety of the impact area is in recognition that archaeological material has been identified and/or predicted throughout the project area as a result of the disturbance of former dunes throughout the site. The AHIP should include provision for the completion of salvage works (both surface collection and sub-surface investigation), which should be conducted in accordance with the methodology specified in **Section 10.0**.
- The AHIP should specifically exclude impacts to recorded burial sites. In the event that suspected human skeletal material is identified within the other portions of the project area, all works should cease immediately and the NSW Police Department, OEH and the registered Aboriginal parties should be contacted so that appropriate management strategies can be identified.

10.0 Salvage Methodologies

This section provides methodologies for all salvage activities to be undertaken within the AHIP area.

10.1 Surface Collections

The locations of all surface artefacts within areas subject to impact by the proposed works will be assessed and, where appropriate, artefacts will be grouped into loci for the purposes of recording and analysis. The location of the artefacts will be recorded using a hand-held GPS and the artefacts will then be collected and bagged in meaningful groupings according to location. Sites identified outside areas of impact (refer to **Table 7.1**) will not be subject to salvage.

10.2 Sub-Surface Investigation

It is proposed to undertake staged sub-surface investigations. The aim of Stage 1 of the sub-surface investigations will involve excavation of a sample of areas subject to proposed sub-surface disturbance (refer to **Figure 5.3**). A second stage of sub-surface investigations may then be triggered based on the outcomes of Stage 1 investigations.

Stage 1 investigations will be undertaken at a sample of up to 1 per cent of areas where the project will require ground surface disturbance at depths below 30 cm (nominal depth of general surface disturbance from current land use). The sampled locations will be based on a 50 metre grid extending across the project area. Testing will be undertaken only within areas of proposed impact with locations selected by an archaeologist in consultation with Aboriginal party representatives to allow for focus on less disturbed areas with higher archaeological potential. Areas that demonstrate a lack of previous disturbance and higher concentrations of Aboriginal objects may be subject to test excavation at the surrounding 25 metre intervals to determine any lateral extent to deposits.

The methods for Stage 1 excavations would include:

- Excavation at the selected locations (see above) in units measuring two metres by one metre.
- Excavations undertaken mechanically according to stratigraphic unit or to a maximum of 100 millimetres per spit as appropriate
- Drawings and photographs to be undertaken for each soil profile identified. Where the soil profiles are consistent, it would not be necessary to draw a section for each investigation unit.
- The sieving of all material using 5 millimetre aperture nested wire-mesh sieves.
- Excavations may continue to a maximum depth of approximately 1.5 metres below ground surface if assessed as safe to do so, however given the nature of sand deposits, it may be necessary to cease excavation at a shallower depth in order to adhere to relevant WorkCover (NSW) requirements.
- Excavation may cease at a shallower depth due to safety concerns, or if B horizon sands or the water table are encountered. If it is agreed upon by the archaeologist and the Aboriginal stakeholder representatives present on site, excavations may also cease within expected artefact bearing deposits if those deposits have remained culturally sterile for a minimum of 20 centimetres in depth.

- Should any features (such as a hearth or heat treatment pit or an accumulation of animal bone or shell likely to relate to Aboriginal cultural activities) be identified, it will be excavated in accordance with the methodology provided in **Section 10.4**.
- Should human/possible human skeletal material (single bones or an intact burial) be located within any excavated area, it will be managed in accordance with the methodology provided in **Section 10.5**.

10.3 Stage Two Excavations

Where the Stage 1 excavations trigger further excavation requirements, Stage 2 excavations would be undertaken. Stage 2 excavations will only be undertaken where one or more of the triggers identified below is identified.

Salvage Excavation Triggers

- Where test excavations identify Aboriginal cultural material in the form of stone artefacts, further salvage excavations would only be required if high artefact densities are reached and/or significant artefacts or archaeological features are recovered. High artefact densities will consist of 50 stone artefacts or more per 1 by 1 metres Stage 1 excavation unit. Significant artefacts and archaeological features will be determined by the representative of the registered Aboriginal parties on site and the archaeologist.
- Where Stage 1 excavations identify Aboriginal cultural material in the form of undisturbed midden material, Stage 2 excavations would be targeted in order to obtain an adequate sample of in-situ deposit that would be able provide further local and regional information on the age, settlement and habitation of past Aboriginal land use.
- The location of Stage 2 excavation areas will be selected with reference to the location of Stage 1 excavation areas that meet the triggers identified above. Stage 2 excavations will not extend outside the areas proposed for impact and will not exceed more than 25 per cent of the total area of proposed sub-surface disturbance. The Stage 2 excavations will be conducted using the same methods used for Stage 1 excavations, except where it is agreed by the archaeologist and Aboriginal parties that the nature of deposit warrants hand excavation (such as in areas of high density shell midden).

10.4 Excavation of Features

Should a feature such as a possible hearth or heat treatment pit or an accumulation of animal bone or shell likely to relate to Aboriginal cultural activities be identified during excavations, the following methodology will be followed:

- The surface of the feature will be cleaned by hand (using trowels, hand shovels and brushes as required) to allow the edges of the feature to be identified.
- The feature will then be excavated in cross-section (half-sectioned or part thereof depending on the location of the feature within the excavation unit and whether it extends outside the excavation unit) to investigate the dimensions and orientation of the feature to more accurately assess whether it is a cultural feature or the result of natural process (for example, a burnt tree root/stump or accumulation of bone within a former void). The excavation will proceed according to the stratigraphy (if any) of the in-filling materials.
- If it is identified as a feature, it will be photographed in cross-section and a stratigraphic profile of the cross-section will be recorded (where possible).

- If it is identified as a feature, it will then be excavated in its entirety within the excavation unit. All excavated cultural materials (including those from original cross-sectional excavation) will be retained for analysis and samples of relevant materials will be sent for additional analysis, including radio-carbon dating. If the feature extends outside the excavation unit, it will be further assessed whether excavation should continue into the adjoining area. This will be considered with reference to the need to maintain the integrity of the feature during excavation and/or backfilling if required.
- Following the removal of all in-filling material, the remaining cut feature (where present) will be planned to scale and photographed.
- Following this excavation can resume in the remaining portion of the excavation unit.

10.5 Management of Potential Human Skeletal Remains

Should human/possible human skeletal material (single bones or an intact burial) be located within the excavation/salvage area, it will be managed in accordance with the strategy outlined below:

- All salvage/excavation works within the immediate vicinity of the skeletal material will cease and the area will be cordoned off for 10 metres from all edges of the skeletal material.
- The skeletal material will be inspected to determine whether it is human or animal. If necessary, advice will be sought from a forensic specialist.
- If the skeletal material is human, the NSW Police and OEH will be contacted. No excavation will proceed until an appropriate course of action has been determined in consultation with NSW Police, OEH and the Aboriginal parties.
- If the skeletal material is not human, the skeletal remains (or part thereof) will be assessed, together with its depositional context, to determine the likelihood of a cultural origin. If the deposit is not considered a cultural feature, excavation may proceed in accordance with the general methodology. If the bone is identified as a feature, excavation may proceed in accordance with the methodology for the excavation of features provided in **Section 10.4**.

10.6 Post-Excavation Analysis and Reporting

Following the completion of salvage works (surface collection and sub-surface investigations), cultural material will be subject to analysis in accordance with the protocols provided below.

10.6.1 Stone Artefacts

Umwelt proposes to record and analyse stone artefacts recovered during AHIP works. The analysis of the stone artefacts would be undertaken to determine artefact distribution, density, artefact and raw material variability, typological dates and the possible type of activities undertaken across the study area.

In accordance with best practice standards, Umwelt will record the following features, at a minimum:

- Artefact type
- Attributes
- Raw material

- Length, width and thickness
- Photographic recording of diagnostic and selected artefacts.

10.6.2 Midden Material

Umwelt proposes to record and analyse any midden material recovered. Dependent on the scale of recovered material, a sample of the all shell midden material would be recorded and analysed.

In accordance with best practice standards, Umwelt will record the following features, at a minimum:

- Material (by weight)
 - shell
 - bone
 - organics
 - charcoal
- Species
- Where relevant, calculate Minimum Number of Individuals (MNI) (per species)
- Type
 - non-artefactual
 - artefactual
 - attributes
 - use-wear.

10.6.3 Reporting

As part of the post field work analysis, all artefacts and a sample of the shell midden material would be subject to comprehensive analysis undertaken at the Umwelt Teralba offices.

The results of all Aboriginal cultural heritage archaeological investigations would be collated into one overarching archaeological excavation report. The final excavation report would discuss the results of the investigations and the site formation and post depositional processes.

The report would also include digitised photographic records, excavation results and outcomes of analysis (where undertaken). The report would also reassess the significance of the identified archaeological resources and the future archaeological potential of the study area.

The report would be provided to registered Aboriginal parties and submitted to OEH.

11.0 Management of Cultural Materials

All archaeological material would be temporarily stored at Umwelt (Australia) Pty Limited Head Office:

75 York Street
Teralba NSW 2284

Upon the completion of the cultural material recording and analysis and the preparation of the final excavation report, the salvaged material will be returned to the project area for redistribution/burial in accordance with the code of practice. An appropriate location will be determined by the registered Aboriginal parties in consultation with the proponent

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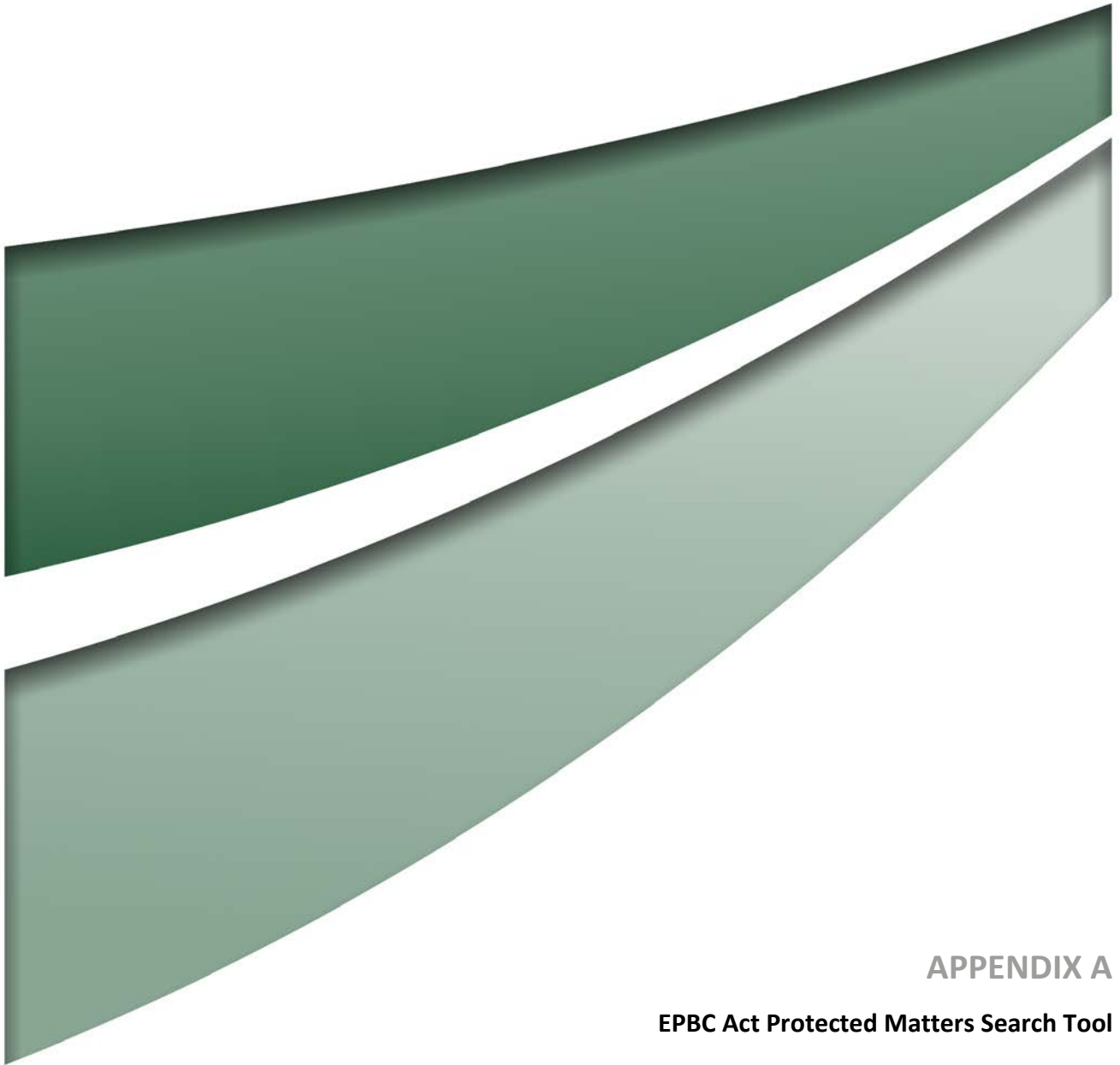
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APPENDIX A

EPBC Act Protected Matters Search Tool



EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 01/12/16 15:12:13

[Summary](#)

[Details](#)

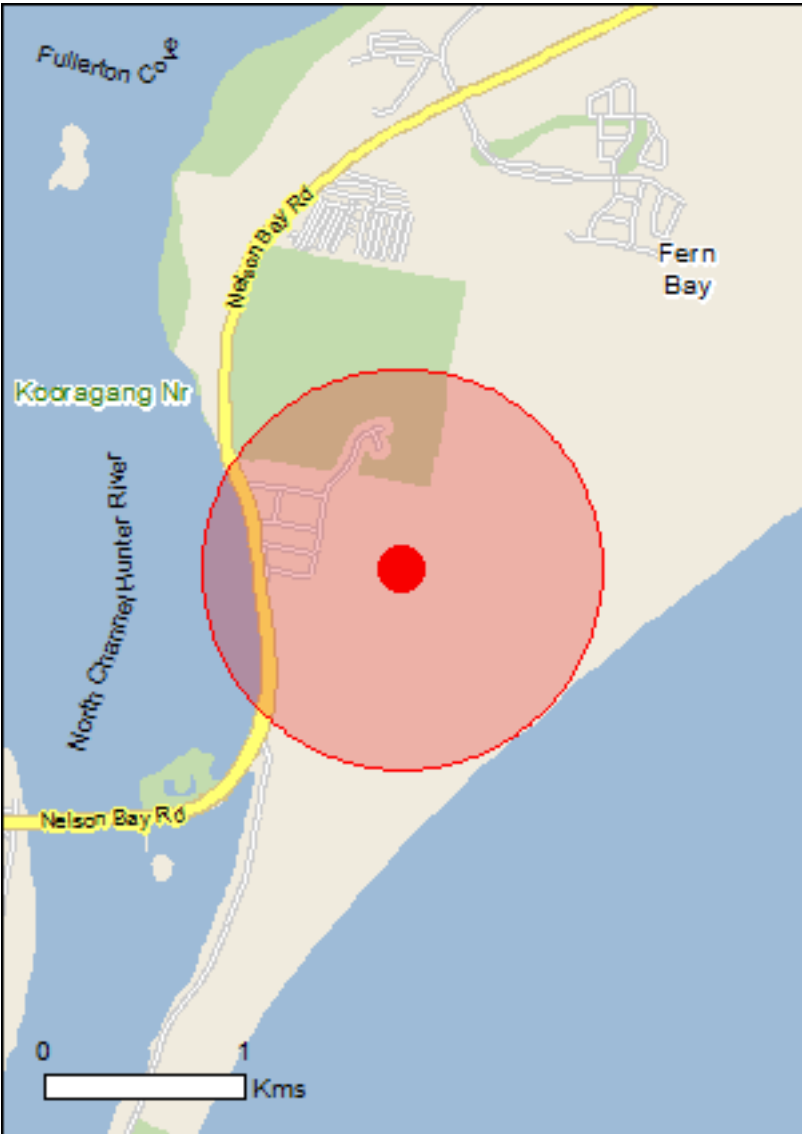
[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

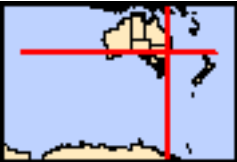
[Acknowledgements](#)



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[Coordinates](#)

[Buffer: 1.0Km](#)



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Importance:	1
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	1
Listed Threatened Species:	60
Listed Migratory Species:	73

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	1
Commonwealth Heritage Places:	None
Listed Marine Species:	96
Whales and Other Cetaceans:	14
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Commonwealth Reserves Marine:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	2
Regional Forest Agreements:	1
Invasive Species:	43
Nationally Important Wetlands:	1
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

Wetlands of International Importance (Ramsar)		[Resource Information]
Name		Proximity
Hunter estuary wetlands		Within Ramsar site

Listed Threatened Ecological Communities		[Resource Information]
For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.		

Name	Status	Type of Presence
Central Hunter Valley eucalypt forest and woodland	Critically Endangered	Community may occur within area

Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Anthochaera phrygia Regent Honeyeater [82338]	Critically Endangered	Foraging, feeding or related behaviour likely to occur within area
Botaurus poiciloptilus Australasian Bittern [1001]	Endangered	Species or species habitat known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Roosting known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Dasyornis brachypterus Eastern Bristlebird [533]	Endangered	Species or species habitat likely to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea antipodensis gibsoni Gibson's Albatross [82270]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora (sensu stricto) Southern Royal Albatross [1072]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area

Name	Status	Type of Presence
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Erythrotriorchis radiatus Red Goshawk [942]	Vulnerable	Species or species habitat likely to occur within area
Fregetta grallaria grallaria White-bellied Storm-Petrel (Tasman Sea), White-bellied Storm-Petrel (Australasian) [64438]	Vulnerable	Species or species habitat likely to occur within area
Grantiella picta Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Limosa lapponica baueri Bar-tailed Godwit (baueri), Western Alaskan Bar-tailed Godwit [86380]	Vulnerable	Species or species habitat known to occur within area
Limosa lapponica menzbieri Northern Siberian Bar-tailed Godwit, Bar-tailed Godwit (menzbieri) [86432]	Critically Endangered	Species or species habitat may occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Pachyptila turtur subantarctica Fairy Prion (southern) [64445]	Vulnerable	Species or species habitat known to occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Pterodroma leucoptera leucoptera Gould's Petrel, Australian Gould's Petrel [26033]	Endangered	Species or species habitat may occur within area
Pterodroma neglecta neglecta Kermadec Petrel (western) [64450]	Vulnerable	Foraging, feeding or related behaviour may occur within area
Rostratula australis Australian Painted Snipe [77037]	Endangered	Species or species habitat likely to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche bulleri platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area

Name	Status	Type of Presence
Thalassarche cauta cauta Shy Albatross, Tasmanian Shy Albatross [82345]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche cauta steadi White-capped Albatross [82344]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Fish		
Epinephelus daemeli Black Rockcod, Black Cod, Saddled Rockcod [68449]	Vulnerable	Species or species habitat likely to occur within area
Frogs		
Litoria aurea Green and Golden Bell Frog [1870]	Vulnerable	Species or species habitat likely to occur within area
Mammals		
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Chalinolobus dwyeri Large-eared Pied Bat, Large Pied Bat [183]	Vulnerable	Species or species habitat likely to occur within area
Dasyurus maculatus maculatus (SE mainland population) Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population) [75184]	Endangered	Species or species habitat likely to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Petauroides volans Greater Glider [254]	Vulnerable	Species or species habitat may occur within area
Phascolarctos cinereus (combined populations of Qld, NSW and the ACT) Koala (combined populations of Queensland, New South Wales and the Australian Capital Territory) [85104]	Vulnerable	Species or species habitat known to occur within area
Potorous tridactylus tridactylus Long-nosed Potoroo (SE mainland) [66645]	Vulnerable	Species or species habitat likely to occur within area
Pseudomys novaehollandiae New Holland Mouse, Pookila [96]	Vulnerable	Species or species habitat likely to occur within area
Pteropus poliocephalus Grey-headed Flying-fox [186]	Vulnerable	Foraging, feeding or

Name	Status	Type of Presence
related behaviour known to occur within area		
Plants		
Cryptostylis hunteriana Leafless Tongue-orchid [19533]	Vulnerable	Species or species habitat likely to occur within area
Eucalyptus parramattensis subsp. decadens Earp's Gum, Earp's Dirty Gum [56148]	Vulnerable	Species or species habitat likely to occur within area
Melaleuca biconvexa Biconvex Paperbark [5583]	Vulnerable	Species or species habitat may occur within area
Phaius australis Lesser Swamp-orchid [5872]	Endangered	Species or species habitat may occur within area
Tetratheca juncea Black-eyed Susan [21407]	Vulnerable	Species or species habitat likely to occur within area
Reptiles		
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Sharks		
Carcharias taurus (east coast population) Grey Nurse Shark (east coast population) [68751]	Critically Endangered	Species or species habitat likely to occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Listed Migratory Species		[Resource Information]
* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.		
Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora (sensu stricto) Southern Royal Albatross [1072]	Vulnerable	Foraging, feeding or

Name	Threatened	Type of Presence
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Vulnerable	related behaviour likely to occur within area
Diomedea gibsoni Gibson's Albatross [64466]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Phoebetria fusca Sooty Albatross [1075]	Vulnerable	Species or species habitat may occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Foraging, feeding or related behaviour likely to occur within area
Sterna albifrons Little Tern [813]		Breeding may occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]	Vulnerable	Species or species habitat may occur within area
Thalassarche bulleri_platei Northern Buller's Albatross, Pacific Albatross [82273]	Vulnerable	Species or species habitat may occur within area
Thalassarche cauta (sensu stricto) Shy Albatross, Tasmanian Shy Albatross [64697]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thalassarche eremita Chatham Albatross [64457]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Vulnerable	Species or species habitat may occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Migratory Marine Species		
Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within

Name	Threatened	Type of Presence
Caperea marginata Pygmy Right Whale [39]		area Foraging, feeding or related behaviour may occur within area
Carcharodon carcharias White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat known to occur within area
Caretta caretta Loggerhead Turtle [1763]	Endangered	Species or species habitat known to occur within area
Chelonia mydas Green Turtle [1765]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Species or species habitat known to occur within area
Dugong dugon Dugong [28]		Species or species habitat may occur within area
Eretmochelys imbricata Hawksbill Turtle [1766]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Lamna nasus Porbeagle, Mackerel Shark [83288]		Species or species habitat may occur within area
Manta alfredi Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat may occur within area
Manta birostris Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Natator depressus Flatback Turtle [59257]	Vulnerable	Foraging, feeding or related behaviour known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Rhincodon typus Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Cuculus optatus Oriental Cuckoo, Horsfield's Cuckoo [86651]		Species or species habitat may occur within

Name	Threatened	Type of Presence
Hirundapus caudacutus White-throated Needletail [682]		area Species or species habitat known to occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat likely to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Species or species habitat known to occur within area
Migratory Wetlands Species		
Actitis hypoleucos Common Sandpiper [59309]		Roosting known to occur within area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Roosting known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Roosting known to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Roosting known to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area
Heteroscelus brevipes Grey-tailed Tattler [59311]		Roosting known to occur within area

Name	Threatened	Type of Presence
Limicola falcinellus Broad-billed Sandpiper [842]	Critically Endangered	Roosting known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]		Species or species habitat may occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur within area
Philomachus pugnax Ruff (Reeve) [850]		Roosting known to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Roosting known to occur within area
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area
Tringa nebularia Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Roosting known to occur within area
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land	[Resource Information]
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The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name
Defence - STOCKTON RIFLE RANGE

Listed Marine Species	[Resource Information]
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* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Roosting known to occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Breeding known to occur within area

Name	Threatened	Type of Presence
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Arenaria interpres Ruddy Turnstone [872]		Roosting known to occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Roosting known to occur within area
Calidris canutus Red Knot, Knot [855]	Endangered	Roosting known to occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat may occur within area
Calidris melanotos Pectoral Sandpiper [858]		Roosting known to occur within area
Calidris ruficollis Red-necked Stint [860]		Roosting known to occur within area
Calidris tenuirostris Great Knot [862]	Critically Endangered	Roosting known to occur within area
Charadrius bicinctus Double-banded Plover [895]		Roosting known to occur within area
Charadrius leschenaultii Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Roosting known to occur within area
Charadrius mongolus Lesser Sand Plover, Mongolian Plover [879]	Endangered	Roosting known to occur within area
Charadrius ruficapillus Red-capped Plover [881]		Roosting known to occur within area
Cuculus saturatus Oriental Cuckoo, Himalayan Cuckoo [710]		Species or species habitat may occur within area
Diomedea antipodensis Antipodean Albatross [64458]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea epomophora (sensu stricto) Southern Royal Albatross [1072]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea exulans (sensu lato) Wandering Albatross [1073]	Vulnerable	Foraging, feeding or related behaviour likely to occur within area
Diomedea gibsoni Gibson's Albatross [64466]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Diomedea sanfordi Northern Royal Albatross [64456]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Roosting known to occur within area
Gallinago megala Swinhoe's Snipe [864]		Roosting likely to occur within area
Gallinago stenura Pin-tailed Snipe [841]		Roosting likely to occur within area

Name	Threatened	Type of Presence
Haliaeetus leucogaster White-bellied Sea-Eagle [943]		Species or species habitat known to occur within area
Heteroscelus brevipes Grey-tailed Tattler [59311]		Roosting known to occur within area
Himantopus himantopus Black-winged Stilt [870]		Roosting known to occur within area
Hirundapus caudacutus White-throated Needletail [682]		Species or species habitat known to occur within area
Lathamus discolor Swift Parrot [744]	Critically Endangered	Species or species habitat likely to occur within area
Limicola falcinellus Broad-billed Sandpiper [842]		Roosting known to occur within area
Limosa lapponica Bar-tailed Godwit [844]		Species or species habitat known to occur within area
Limosa limosa Black-tailed Godwit [845]		Roosting known to occur within area
Macronectes giganteus Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
Macronectes halli Northern Giant Petrel [1061]	Vulnerable	Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Monarcha melanopsis Black-faced Monarch [609]		Species or species habitat known to occur within area
Monarcha trivirgatus Spectacled Monarch [610]		Species or species habitat likely to occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat likely to occur within area
Myiagra cyanoleuca Satin Flycatcher [612]		Species or species habitat likely to occur within area
Numenius madagascariensis Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat may occur within area
Numenius minutus Little Curlew, Little Whimbrel [848]		Roosting likely to occur within area
Numenius phaeopus Whimbrel [849]		Roosting known to occur within area
Pachyptila turtur Fairy Prion [1066]		Species or species habitat known to occur within area
Pandion haliaetus Osprey [952]		Species or species habitat known to occur

Name	Threatened	Type of Presence
Philomachus pugnax Ruff (Reeve) [850]	Vulnerable	within area
Phoebastria fusca Sooty Albatross [1075]		Roosting known to occur within area
Pluvialis fulva Pacific Golden Plover [25545]		Species or species habitat may occur within area
Pluvialis squatarola Grey Plover [865]		Roosting known to occur within area
Puffinus carneipes Flesh-footed Shearwater, Fleshy-footed Shearwater [1043]		Roosting known to occur within area
Recurvirostra novaehollandiae Red-necked Avocet [871]	Endangered*	Foraging, feeding or related behaviour likely to occur within area
Rhipidura rufifrons Rufous Fantail [592]		Roosting known to occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]		Species or species habitat known to occur within area
Sterna albifrons Little Tern [813]		Species or species habitat likely to occur within area
Thalassarche bulleri Buller's Albatross, Pacific Albatross [64460]		Breeding may occur within area
Thalassarche cauta (sensu stricto) Shy Albatross, Tasmanian Shy Albatross [64697]	Vulnerable	Species or species habitat may occur within area
Thalassarche eremita Chatham Albatross [64457]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thalassarche impavida Campbell Albatross, Campbell Black-browed Albatross [64459]	Endangered	Foraging, feeding or related behaviour likely to occur within area
Thalassarche melanophris Black-browed Albatross [66472]	Vulnerable	Species or species habitat may occur within area
Thalassarche salvini Salvin's Albatross [64463]	Vulnerable	Species or species habitat may occur within area
Thalassarche sp. nov. Pacific Albatross [66511]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Thalassarche steadi White-capped Albatross [64462]	Vulnerable*	Species or species habitat may occur within area
Tringa nebularia Common Greenshank, Greenshank [832]	Vulnerable*	Foraging, feeding or related behaviour likely to occur within area
Tringa stagnatilis Marsh Sandpiper, Little Greenshank [833]		Species or species habitat known to occur within area
Xenus cinereus Terek Sandpiper [59300]		Roosting known to occur within area

Name	Threatened	Type of Presence within area
Fish		
Acentronura tentaculata Shortpouch Pygmy Pipehorse [66187]		Species or species habitat may occur within area
Festucalex cinctus Girdled Pipefish [66214]		Species or species habitat may occur within area
Filicampus tigris Tiger Pipefish [66217]		Species or species habitat may occur within area
Heraldia nocturna Upside-down Pipefish, Eastern Upside-down Pipefish, Eastern Upside-down Pipefish [66227]		Species or species habitat may occur within area
Hippichthys penicillus Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
Hippocampus abdominalis Big-belly Seahorse, Eastern Potbelly Seahorse, New Zealand Potbelly Seahorse [66233]		Species or species habitat may occur within area
Hippocampus whitei White's Seahorse, Crowned Seahorse, Sydney Seahorse [66240]		Species or species habitat may occur within area
Histiogamphelus briggsii Crested Pipefish, Briggs' Crested Pipefish, Briggs' Pipefish [66242]		Species or species habitat may occur within area
Lissocampus runa Javelin Pipefish [66251]		Species or species habitat may occur within area
Maroubra perserrata Sawtooth Pipefish [66252]		Species or species habitat may occur within area
Notiocampus ruber Red Pipefish [66265]		Species or species habitat may occur within area
Phyllopteryx taeniolatus Common Seadragon, Weedy Seadragon [66268]		Species or species habitat may occur within area
Solegnathus spinosissimus Spiny Pipehorse, Australian Spiny Pipehorse [66275]		Species or species habitat may occur within area
Solenostomus cyanopterus Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
Solenostomus paegnius Rough-snout Ghost Pipefish [68425]		Species or species habitat may occur within area
Solenostomus paradoxus Ornate Ghostpipefish, Harlequin Ghost Pipefish, Ornate Ghost Pipefish [66184]		Species or species habitat may occur within area
Stigmatopora argus Spotted Pipefish, Gulf Pipefish, Peacock Pipefish [66276]		Species or species habitat may occur within area
Stigmatopora nigra Widebody Pipefish, Wide-bodied Pipefish, Black Pipefish [66277]		Species or species habitat may occur within

Name	Threatened	Type of Presence
Stigmatopora olivacea a pipefish [74966] Syngnathoides biaculeatus Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279] Trachyrhamphus bicoarctatus Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280] Urocampus carinirostris Hairy Pipefish [66282] Vanacampus margaritifer Mother-of-pearl Pipefish [66283]		area
		Species or species habitat may occur within area
		Species or species habitat may occur within area
		Species or species habitat may occur within area
		Species or species habitat may occur within area

Mammals		
Arctocephalus forsteri Long-nosed Fur-seal, New Zealand Fur-seal [20] Arctocephalus pusillus Australian Fur-seal, Australo-African Fur-seal [21] Dugong dugon Dugong [28]		Species or species habitat may occur within area
		Species or species habitat may occur within area
		Species or species habitat may occur within area

Reptiles		
Caretta caretta Loggerhead Turtle [1763] Chelonia mydas Green Turtle [1765] Dermochelys coriacea Leatherback Turtle, Leathery Turtle, Luth [1768] Eretmochelys imbricata Hawksbill Turtle [1766] Natator depressus Flatback Turtle [59257] Pelamis platurus Yellow-bellied Seasnake [1091]	Endangered	Species or species habitat known to occur within area
	Vulnerable	Foraging, feeding or related behaviour known to occur within area
	Endangered	Species or species habitat known to occur within area
	Vulnerable	Foraging, feeding or related behaviour known to occur within area
	Vulnerable	Foraging, feeding or related behaviour known to occur within area
		Species or species habitat may occur within area

Whales and other Cetaceans		[Resource Information]
Name	Status	Type of Presence
Mammals		
Balaenoptera acutorostrata Minke Whale [33] Balaenoptera edeni Bryde's Whale [35]		Species or species habitat may occur within area
		Species or species habitat may occur within area

Name	Status	Type of Presence
Balaenoptera musculus Blue Whale [36]	Endangered	Species or species habitat may occur within area
Caperea marginata Pygmy Right Whale [39]		Foraging, feeding or related behaviour may occur within area
Delphinus delphis Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
Eubalaena australis Southern Right Whale [40]	Endangered	Species or species habitat likely to occur within area
Grampus griseus Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
Lagenorhynchus obscurus Dusky Dolphin [43]		Species or species habitat may occur within area
Megaptera novaeangliae Humpback Whale [38]	Vulnerable	Species or species habitat known to occur within area
Orcinus orca Killer Whale, Orca [46]		Species or species habitat may occur within area
Sousa chinensis Indo-Pacific Humpback Dolphin [50]		Species or species habitat likely to occur within area
Stenella attenuata Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
Tursiops aduncus Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
Tursiops truncatus s. str. Bottlenose Dolphin [68417]		Species or species habitat may occur within area

Extra Information

State and Territory Reserves		[Resource Information]
Name		State
Hunter Wetlands		NSW
Worimi		NSW
Regional Forest Agreements		[Resource Information]
Note that all areas with completed RFAs have been included.		
Name		State
North East NSW RFA		New South Wales

Invasive Species

[Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Acridotheres tristis Common Myna, Indian Myna [387]		Species or species habitat likely to occur within area
Alauda arvensis Skylark [656]		Species or species habitat likely to occur within area
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Lonchura punctulata Nutmeg Mannikin [399]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Passer montanus Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
Pycnonotus jocosus Red-whiskered Bulbul [631]		Species or species habitat likely to occur within area
Streptopelia chinensis Spotted Turtle-Dove [780]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Frogs		
Rhinella marina Cane Toad [83218]		Species or species habitat likely to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur

Name	Status	Type of Presence
		within area
Feral deer Feral deer species in Australia [85733]		Species or species habitat likely to occur within area
Lepus capensis Brown Hare [127]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus norvegicus Brown Rat, Norway Rat [83]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		
Alternanthera philoxeroides Alligator Weed [11620]		Species or species habitat likely to occur within area
Anredera cordifolia Madeira Vine, Jalap, Lamb's-tail, Mignonette Vine, Anredera, Gulf Madeiravine, Heartleaf Madeiravine, Potato Vine [2643]		Species or species habitat likely to occur within area
Asparagus aethiopicus Asparagus Fern, Ground Asparagus, Basket Fern, Sprengi's Fern, Bushy Asparagus, Emerald Asparagus [62425]		Species or species habitat likely to occur within area
Asparagus asparagoides Bridal Creeper, Bridal Veil Creeper, Smilax, Florist's Smilax, Smilax Asparagus [22473]		Species or species habitat likely to occur within area
Asparagus plumosus Climbing Asparagus-fern [48993]		Species or species habitat likely to occur within area
Cabomba caroliniana Cabomba, Fanwort, Carolina Watershield, Fish Grass, Washington Grass, Watershield, Carolina Fanwort, Common Cabomba [5171]		Species or species habitat likely to occur within area
Chrysanthemoides monilifera Bitou Bush, Boneseed [18983]		Species or species habitat may occur within area
Chrysanthemoides monilifera subsp. rotundata Bitou Bush [16332]		Species or species habitat likely to occur within area
Genista monspessulana Montpellier Broom, Cape Broom, Canary Broom, Common Broom, French Broom, Soft Broom [20126]		Species or species habitat likely to occur within area
Genista sp. X Genista monspessulana Broom [67538]		Species or species habitat may occur within area
Lantana camara Lantana, Common Lantana, Kamara Lantana, Large-leaf Lantana, Pink Flowered Lantana, Red		Species or species habitat likely to occur

Name	Status	Type of Presence
Flowered Lantana, Red-Flowered Sage, White Sage, Wild Sage [10892] Opuntia spp. Prickly Pears [82753]		within area Species or species habitat likely to occur within area
Pinus radiata Radiata Pine Monterey Pine, Insignis Pine, Wilding Pine [20780]		Species or species habitat may occur within area
Protasparagus densiflorus Asparagus Fern, Plume Asparagus [5015]		Species or species habitat likely to occur within area
Protasparagus plumosus Climbing Asparagus-fern, Ferny Asparagus [11747]		Species or species habitat likely to occur within area
Rubus fruticosus aggregate Blackberry, European Blackberry [68406]		Species or species habitat likely to occur within area
Salix spp. except S.babylonica, S.x calodendron & S.x reichardtii Willows except Weeping Willow, Pussy Willow and Sterile Pussy Willow [68497]		Species or species habitat likely to occur within area
Salvinia molesta Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]		Species or species habitat likely to occur within area
Senecio madagascariensis Fireweed, Madagascar Ragwort, Madagascar Groundsel [2624]		Species or species habitat likely to occur within area
Solanum elaeagnifolium Silver Nightshade, Silver-leaved Nightshade, White Horse Nettle, Silver-leaf Nightshade, Tomato Weed, White Nightshade, Bull-nettle, Prairie-berry, Satansbos, Silver-leaf Bitter-apple, Silverleaf-nettle, Trompillo [12323]		Species or species habitat likely to occur within area

Nationally Important Wetlands		[Resource Information]
Name		State
Kooragang Nature Reserve		NSW

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-32.87526 151.80062

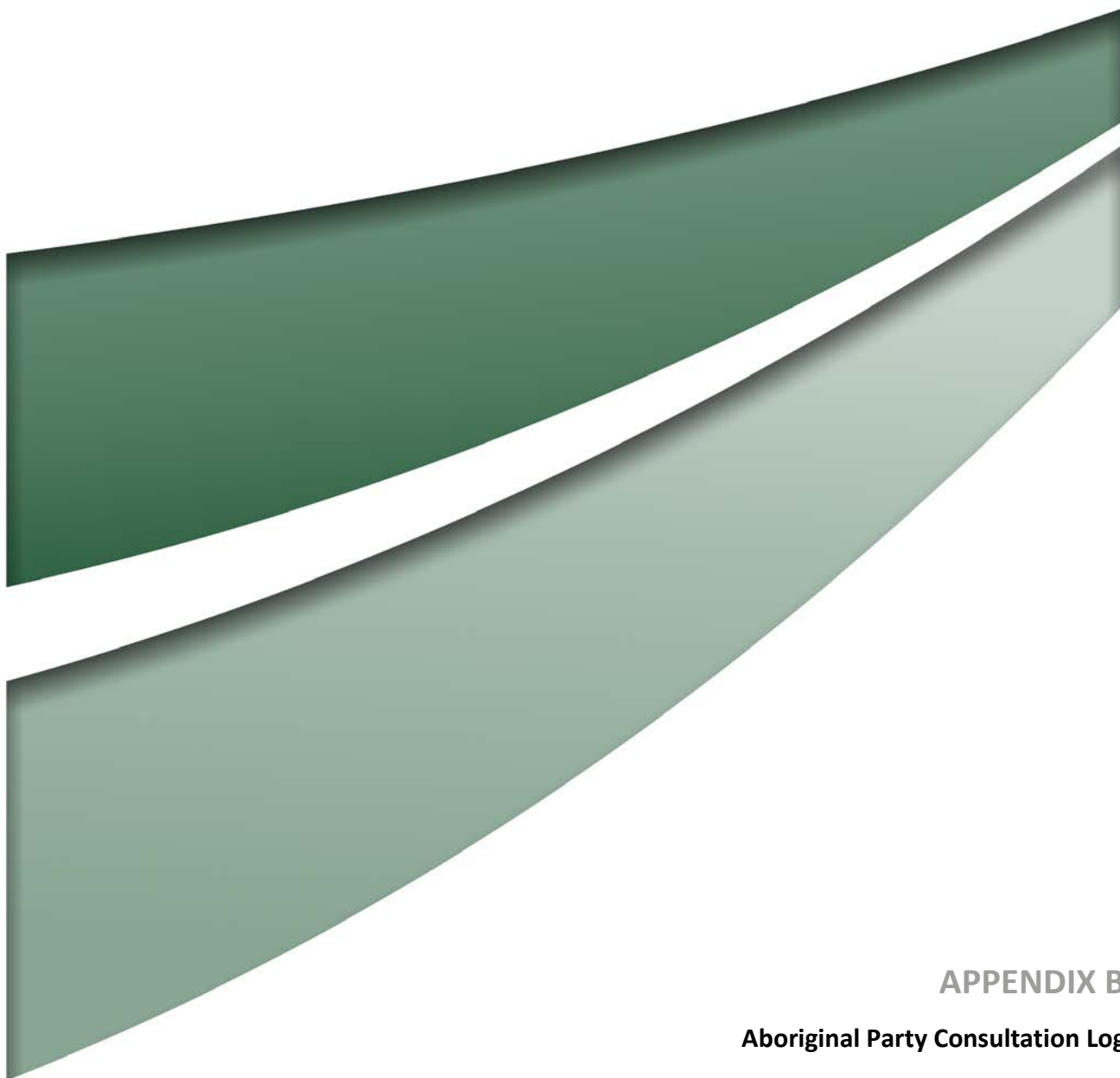
Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.



APPENDIX B

Aboriginal Party Consultation Log



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Our Ref:3772/AL/30052016

30 May 2016

Carol Ridgeway-Bissett
Maaingal Aboriginal Heritage
17 Parkes Street
Nelson Bay NSW 2315

Dear Carol

Re: Aboriginal Cultural Heritage and Archaeological Assessment – Fort Wallace and Stockton Rifle Range Sites, Stockton, NSW

Defence Housing Australia (DHA) is proposing to seek development approvals for Fort Wallace and Stockton Rifle Range, Stockton, NSW (refer to **Figure 1**). DHA has commissioned Umwelt (Australia) Pty Ltd (Umwelt) to prepare an Aboriginal Cultural Heritage and Archaeological Assessment for the proposed development.

In accordance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010), Umwelt, on behalf of DHA, is seeking to ascertain if your organisation has cultural knowledge relevant to determining the significance of Aboriginal sites/objects within the project area. This information will be used to inform the Aboriginal Cultural Heritage and Archaeological Assessment, which in turn may support an application for an Aboriginal Heritage Impact Permit. In order to facilitate the consultation process, please register an interest in the project by no later than **13 June 2016**.

Please send any registrations of interest in the project to:

Alison Lamond
Umwelt (Australia) Pty Ltd
75 York St, Teralba NSW 2284
Ph: 4950 5322
Email: alamond@umwelt.com.au

In compliance with Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010), the contact details for DHA are as follows:

Gulliver Coote
Defence Housing Australia
Suite 201, Level 2
287 Elizabeth Street
Sydney, NSW
Ph: 02 9762 5612
Email: gully.coote@dha.gov.au

Should you have any queries or wish to discuss this notification letter, please do not hesitate to call me on 02 4950 5322 or alamond@umwelt.com.au.

Yours sincerely

Alison Lamond
Archaeologist

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Our Ref:3772/AL/30052016

30 May 2016

Anthony Anderson
Mur-Roo-Ma Inc.
7 Vardon Road
Fern Bay NSW 2295

Dear Anthony

**Re: Aboriginal Cultural Heritage and Archaeological Assessment – Fort Wallace and
Stockton Rifle Range Sites, Stockton, NSW**

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Our Ref:3772/AL/30052016

30 May 2016

Lea Anderson
Nur-Run-Gee Pty Ltd
22 Popplewell Road
Fern Bay NSW 2295

Dear Lea

Re: Aboriginal Cultural Heritage and Archaeological Assessment – Fort Wallace and Stockton Rifle Range Sites, Stockton, NSW

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30 May 2016

Cheryl Hendry
Worimi Aboriginal Community Co-operative
17a Wahgunyah Road
Nelson Bay NSW 2315

Dear Cheryl

Re: Aboriginal Cultural Heritage and Archaeological Assessment – Fort Wallace and Stockton Rifle Range Sites, Stockton, NSW

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Our Ref:3772/AL/30052016

30 May 2016

Del Arnold
Garrigal Aboriginal Community Inc.
PO Box 182
Gloucester NSW 2422

Dear Del

Re: Aboriginal Cultural Heritage and Archaeological Assessment – Fort Wallace and Stockton Rifle Range Sites, Stockton, NSW

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30 May 2016

Mick Leon
Doo-Wa-Kee
PO Box 22
Taree NSW 2430

Dear Mick

Re: Aboriginal Cultural Heritage and Archaeological Assessment – Fort Wallace and Stockton Rifle Range Sites, Stockton, NSW

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30 May 2016

Mick Leon
Lakkari NTCG
C/- 4/39 Short Street
Forster NSW 2428

Dear Mick

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Should you have any queries or wish to discuss this notification letter, please do not hesitate to call me on 02 4950 5322 or alamond@umwelt.com.au.

Yours sincerely

Alison Lamond
Archaeologist

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75 York Street
Teralba NSW 2284
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Dedicated Team.
Quality Outcomes.

Our Ref:3772/AL/30052016

30 May 2016

David Ahoy
Lower Hunter Aboriginal Incorporated
5 Killara Drive
Cardiff South NSW 2285

Dear David

Re: Aboriginal Cultural Heritage and Archaeological Assessment – Fort Wallace and Stockton Rifle Range Sites, Stockton, NSW

Defence Housing Australia (DHA) is proposing to seek development approvals for Fort Wallace and Stockton Rifle Range, Stockton, NSW (refer to **Figure 1**). DHA has commissioned Umwelt (Australia) Pty Ltd (Umwelt) to prepare an Aboriginal Cultural Heritage and Archaeological Assessment for the proposed development.

In accordance with the Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010), Umwelt, on behalf of DHA, is seeking to ascertain if your organisation has cultural knowledge relevant to determining the significance of Aboriginal sites/objects within the project area. This information will be used to inform the Aboriginal Cultural Heritage and Archaeological Assessment, which in turn may support an application for an Aboriginal Heritage Impact Permit. In order to facilitate the consultation process, please register an interest in the project by no later than **13 June 2016**.

Please send any registrations of interest in the project to:

Alison Lamond
Umwelt (Australia) Pty Ltd
75 York St, Teralba NSW 2284
Ph: 4950 5322
Email: alamond@umwelt.com.au

In compliance with Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010), the contact details for DHA are as follows:

Gulliver Coote
Defence Housing Australia
Suite 201, Level 2
287 Elizabeth Street
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Our Ref:3772/AL/30052016

30 May 2016

Candy Lee Towers
Gimbay Gatigaan Aboriginal Corporation
126 Hanbury Street
Mayfield NSW 2304

Dear Candy Lee

Re: Aboriginal Cultural Heritage and Archaeological Assessment – Fort Wallace and Stockton Rifle Range Sites, Stockton, NSW

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Our Ref:3772/AL/30052016

30 May 2016

David Feeney
Karuah Indigenous Corporation
1/7 Mustons Rd
Karuah NSW 2324

Dear David

Re: Aboriginal Cultural Heritage and Archaeological Assessment – Fort Wallace and Stockton Rifle Range Sites, Stockton, NSW

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Our Ref:3772/AL/30052016

30 May 2016

Arthur Fletcher
Kauwul t/a Wonn1
619 Main Road
Glendale NSW 2285

Dear Arthur

Re: Aboriginal Cultural Heritage and Archaeological Assessment – Fort Wallace and Stockton Rifle Range Sites, Stockton, NSW

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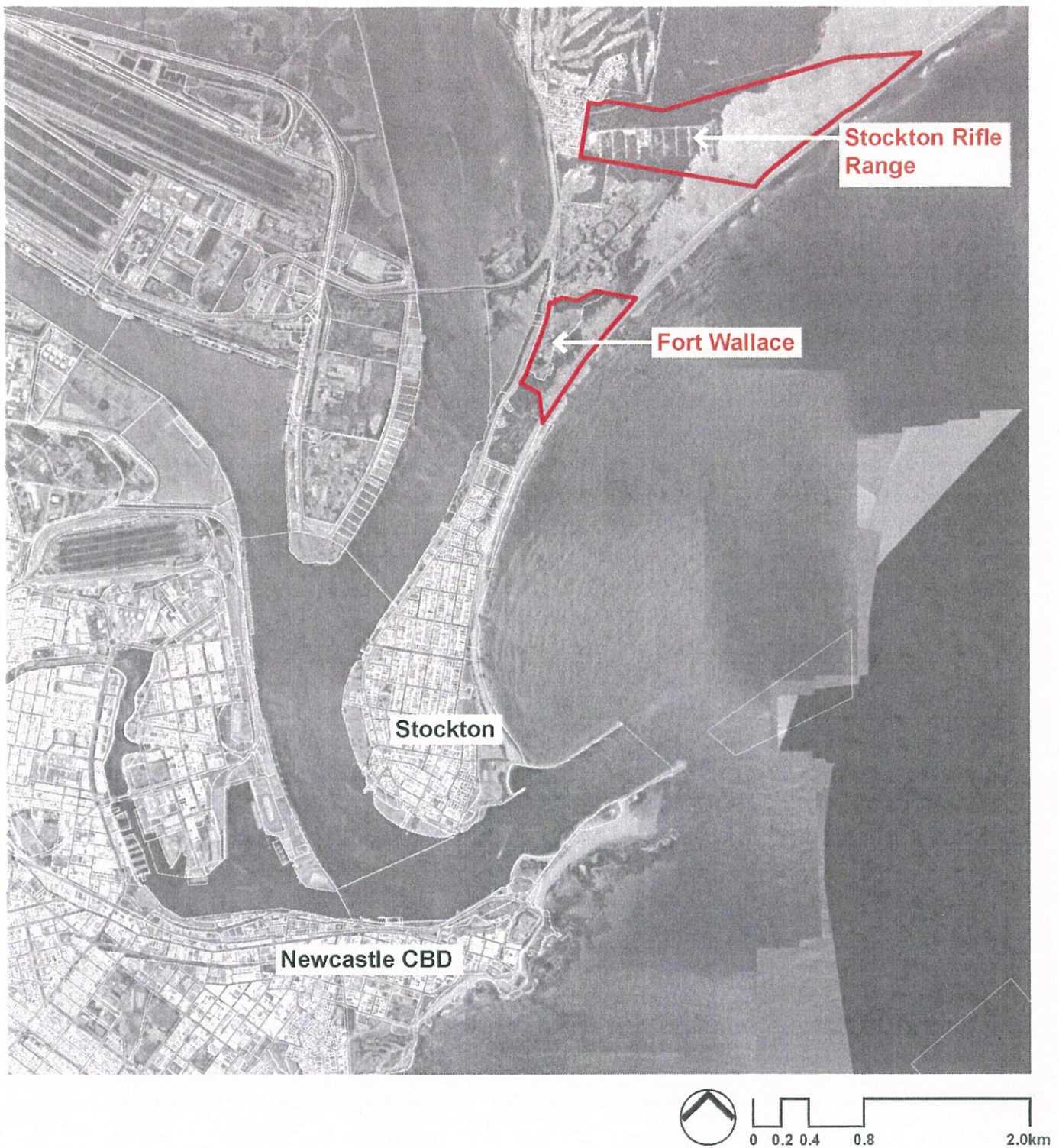


Figure 1



Our Ref: 3772/ AL/NR/02082016

2 August 2016

Karuah Indigenous Corporation
David Feeney
1/7 Mustons Rd
KARUAH NSW 2324

'karuahindigenous@outlook.com'

Dear David Feeney

Re: Draft Assessment Methodology: Aboriginal Cultural Heritage and Archaeological Assessment Stockton Rifle Range and Fort Wallace Stockton, NSW

Thank you for your registration of interest in the abovementioned project. The proposed works area is illustrated in **Figure 1** and is herein referred to as the Stockton Rifle Range and Fort Wallace project areas.

The Aboriginal cultural heritage and archaeological assessment (ACHAA) of the project area will be undertaken in accordance with the requirements of the *National Parks and Wildlife Act 1974* (NPW Act), the *National Parks and Wildlife Regulation 2009* (NPW Regulation) and the *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (the Code of Practice). In line with these requirements, this letter provides a draft methodology for the ACHAA of the project area for your review and comment.

1.0 Background Information

Defence Housing Australia (DHA) is proposing to seek development consent for residential subdivision of the Stockton Rifle Range and Fort Wallace, located north of Stockton NSW.

The project areas and surrounding area include a large number of previously recorded sites (refer to **Figure 1**). Within the Fort Wallace project area 1 burial site, 4 stone artefact sites and 2 Aboriginal resource and gathering sites are recorded, and a portion of the project area is also contained within the Fern Bay site complex. While previous assessments have identified high levels of disturbance within the main fort complex the area has been previously identified as having high cultural value and was mapped as an area of high Aboriginal cultural sensitivity in a recent assessment of Fern Bay

The Stockton Rifle Range project area includes 4 previously recorded burial sites, 6 artefact sites and 1 midden site and is also partially located within the Fern Bay site complex. This area has also previously been mapped as within a zone of high Aboriginal cultural sensitivity.

2.0 Proposed works

DHA is proposing to seek consent for residential development of the project areas, with the proposed development footprint shown in **Figure 1**.

Detailed designs are yet to be finalised as they are awaiting the results of this assessment and the other environmental assessments, however the development will include vegetation clearance, earthworks, dwelling construction, road construction, service installation and landscaping throughout the project areas.

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3.0 Draft Assessment Methodology

Investigations of the project areas will be undertaken as components of the ACHAA process to support a future application for an Aboriginal Heritage Impact Permit. Following your organisations review of this methodology a field survey will be organised. Pedestrian survey across both project areas will be undertaken in accordance with the requirements under the OEH *Code of Practice for Archaeological Investigation of Aboriginal Objects in NSW*. During the survey your representative will be encouraged to participate in discussions related to any sites, objects, PADs, or landscape features of cultural value located. Any information provided will be included in the draft report for review by the broader membership of your group/corporation. It is noted that if information is provided which is of a sensitive nature that your group/corporation can choose to have this information remain private.

During the survey has the Aboriginal cultural significance of any previously or newly identified sites and site management/mitigation required will be discussed. The outcomes of this discussion will then be incorporated into the draft assessment report which will be provided to all Registered Aboriginal Parties for broader group consideration and comment.

Following the end of the survey Umwelt will complete the draft ACHAA for your review. All responses provided by registered Aboriginal parties will be included in full in the ACHAA. The archaeologists at Umwelt pride themselves on dealing fairly with registered Aboriginal parties and in ensuring that everyone involved in the consultation process has their voice heard in the final report.

4.0 Survey Methodology

It is proposed to undertake a survey of all landforms within both the Stockton Rifle Range and Fort Wallace Project areas over a period of 2 days with the involvement of a representative from each of the registered Aboriginal parties and an archaeologist from Umwelt. The survey methodology will comprise pedestrian transects that will take into account the following requirements:

- To survey an adequate sample of all of the landforms present in the project areas.
- To locate, ground truth and assess the current condition of the previously recorded sites within the project areas.
- The survey transects will be walked with the survey participants at roughly 10 metre intervals (depending on levels of exposure and visibility). Throughout the survey all exposures will be carefully inspected and details will recorded in relation to:
 - landform
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 - extent of any exposures
 - any information provided by the registered Aboriginal parties in relation to cultural values
 - the nature of any site, PAD or landscape feature of Aboriginal cultural value located will be recorded
 - the nature of any artefacts observed

All sites and artefacts located will be recorded to OEH standards. The archaeological and Aboriginal and cultural significance of the sites/artefacts will be discussed with the registered Aboriginal parties participating in the survey and any requirements for subsurface testing of sites and PADs post approval will also be discussed.

**Please note that as a result of the presence of previously recorded midden sites and burials within the project areas subsurface testing is not permitted under the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales. Therefore subsurface investigation can only occur with an AHIP.*

As noted above, a meeting will be held on the afternoon of the survey to ensure that your representatives are fully informed about the project and have an opportunity to provide input on potential management options.

The dates proposed for the survey will be provided shortly.

5.0 Draft Aboriginal Cultural Heritage and Archaeological Assessment

Following the completion of the survey program a draft ACHAA will be prepared for review by all registered Aboriginal parties. The draft ACHAA will include:

- details of the nature of the proposed development
- a description of the potential impacts of the proposed development on Aboriginal cultural heritage and archaeological values
- full details of the registered Aboriginal party consultation process
- the results of an Office of Environment and Heritage (OEH) Aboriginal Heritage Information Management System (AHIMS) search and Native Title search
- a review of the cultural context of the proposed project area and its surrounds which will draw heavily on information provided by registered Aboriginal parties and the known archaeological sites in the area as well as any new information provided through the AHIMS search and during the assessment process
- a review of background information related to the environmental characteristics of the project areas that may have determined how Aboriginal people may have occupied/utilised the area and the likelihood of site survival
- the preparation of a predictive model drawing on all the above
- details of the survey methodology and results
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Participating registered Aboriginal parties will be encouraged to provide information they feel is appropriate for inclusion in any section of the report. Opportunity will also be provided for registered Aboriginal parties to provide information that they would like taken into account but not provided in a report that will be made available to the public. Registered Aboriginal parties will be provided 28 days to review and provide their response to the draft report.

6.0 Comments on Consultation, Survey and Assessment Methodologies

As part of the consultation process Umwelt, on behalf of DHA, seeks your comments on the methodologies outlined above for the survey and assessment process outlined above for the proposed development of the Stockton Rifle Range and Fort Wallace. Umwelt, on behalf of DHA, would be grateful if we could receive your comments on the methodologies by **30 August 2016**. Your comments can be sent by mail to:

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Attn: Alison Lamond

Alternatively, you may email your comments to: alamond@umwelt.com.au

7.0 Further Contact

Umwelt, on behalf of HDA, will make further contact with you shortly to ensure that you have been supplied with all the information you require to consider the appropriateness of the methodologies supplied in this correspondence. At that time Umwelt will also be speaking with you about the schedule for the field survey.

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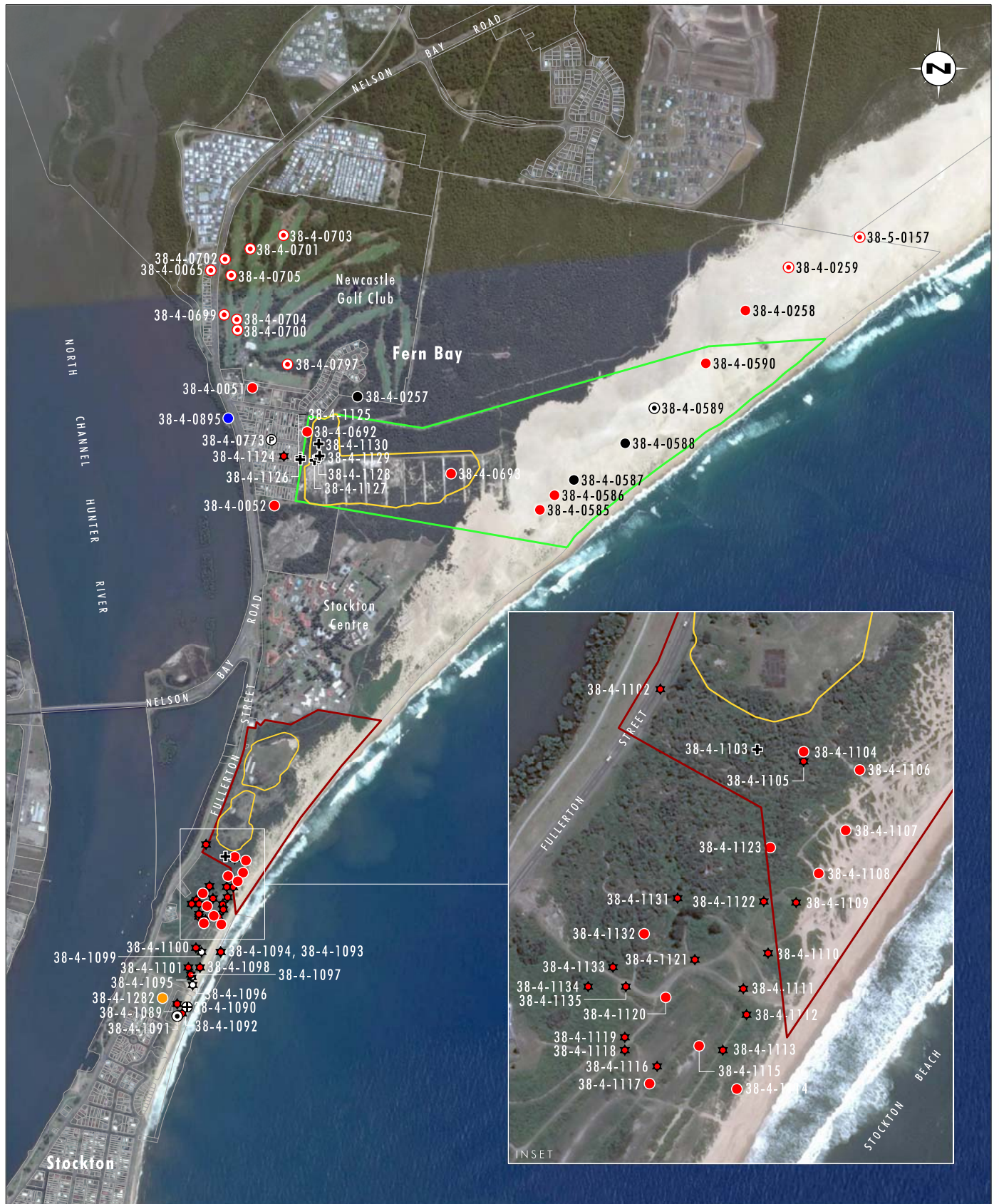


Image Source: Google Earth/DigitalGlobe/
CNES/Astrium (Nov 2015)

Data Source: AHIMS (2016), LPI (2009)

Legend

- Stockton Rifle Range Proposed Project Area
- Fort Wallace Proposed Project Area
- Proposed Extent of Residential Development
- ☆ Aboriginal Ceremony and Dreaming Site
- ★ Aboriginal Resource and Gathering
- Artefact Scatter
- Burial, Midden, Artefact Scatter and Aboriginal Ceremony and Dreaming
- ⊕ Burial
- Isolated Find
- ⊙ Midden
- Midden and Aboriginal ceremony and dreaming
- ⊙ Midden and Artefact Scatter
- ⊙ Potential Archaeological Deposit
- ⊕ Stone Arrangement

FIGURE 1

Previously Registered Aboriginal Sites
Fort Wallace and Stockton Rifle Range



Our Ref: 3772/ AL/NR/02082016

2 August 2016

Mur-Roo-Ma Inc.
Anthony Anderson/ Bec Young
7 Vardon Road
FERN BAY NSW 2295

murroomainc1@gmail.com

Dear Anthony Anderson/ Bec Young

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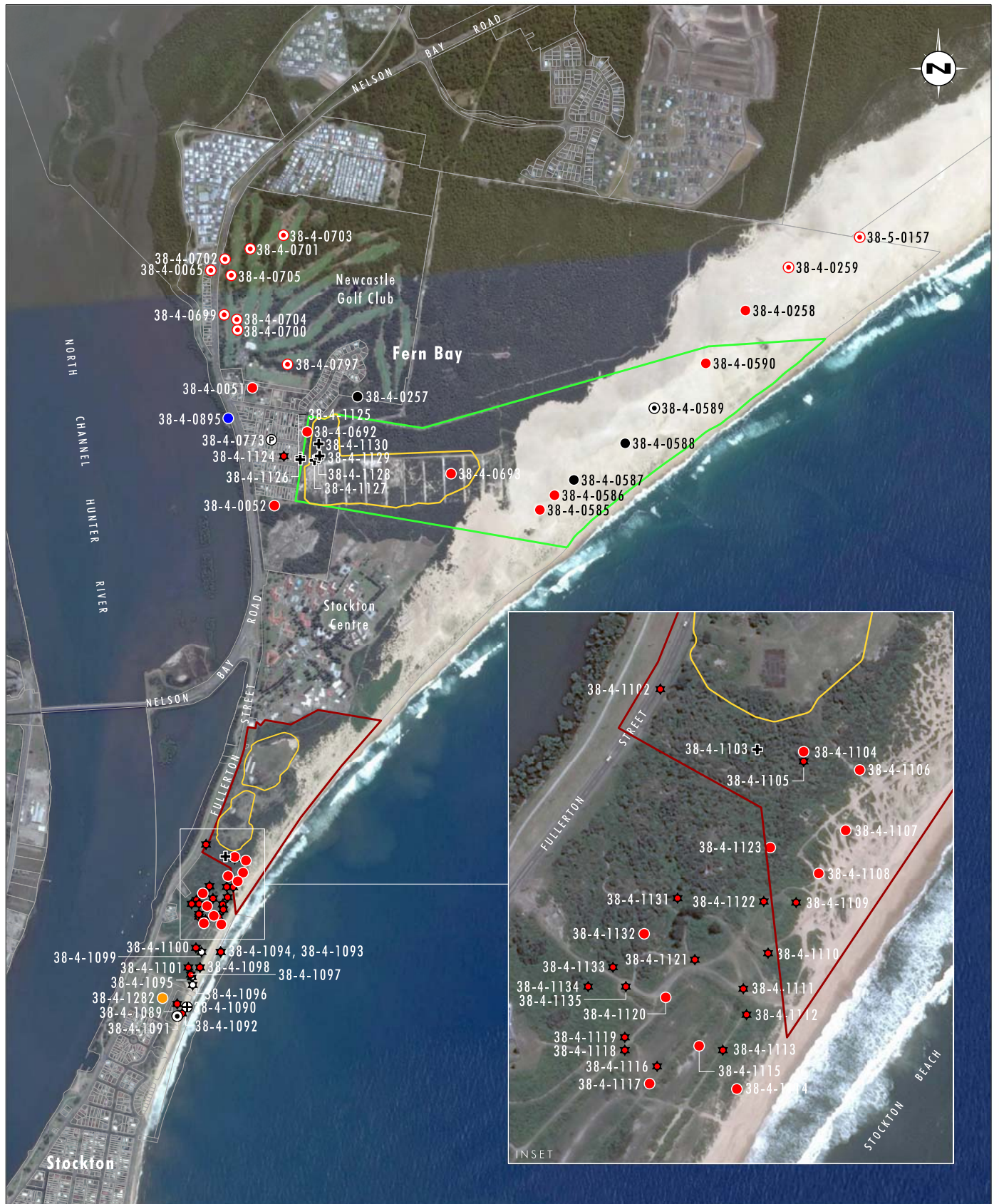


Image Source: Google Earth/DigitalGlobe/
CNES/Astrium (Nov 2015)

Data Source: AHIMS (2016), LPI (2009)

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FIGURE 1

Previously Registered Aboriginal Sites
Fort Wallace and Stockton Rifle Range



Our Ref: 3772/ AL/NR/02082016

2 August 2016

Nur-Run-Gee Pty Ltd
Lennie Anderson
22 Popplewell Road
FERN BAY NSW 2295

Dear Lennie Anderson

Re: Draft Assessment Methodology: Aboriginal Cultural Heritage and Archaeological Assessment Stockton Rifle Range and Fort Wallace Stockton, NSW

Thank you for your registration of interest in the abovementioned project. The proposed works area is illustrated in **Figure 1** and is herein referred to as the Stockton Rifle Range and Fort Wallace project areas.

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Yours sincerely



Alison Lamond
Archaeologist

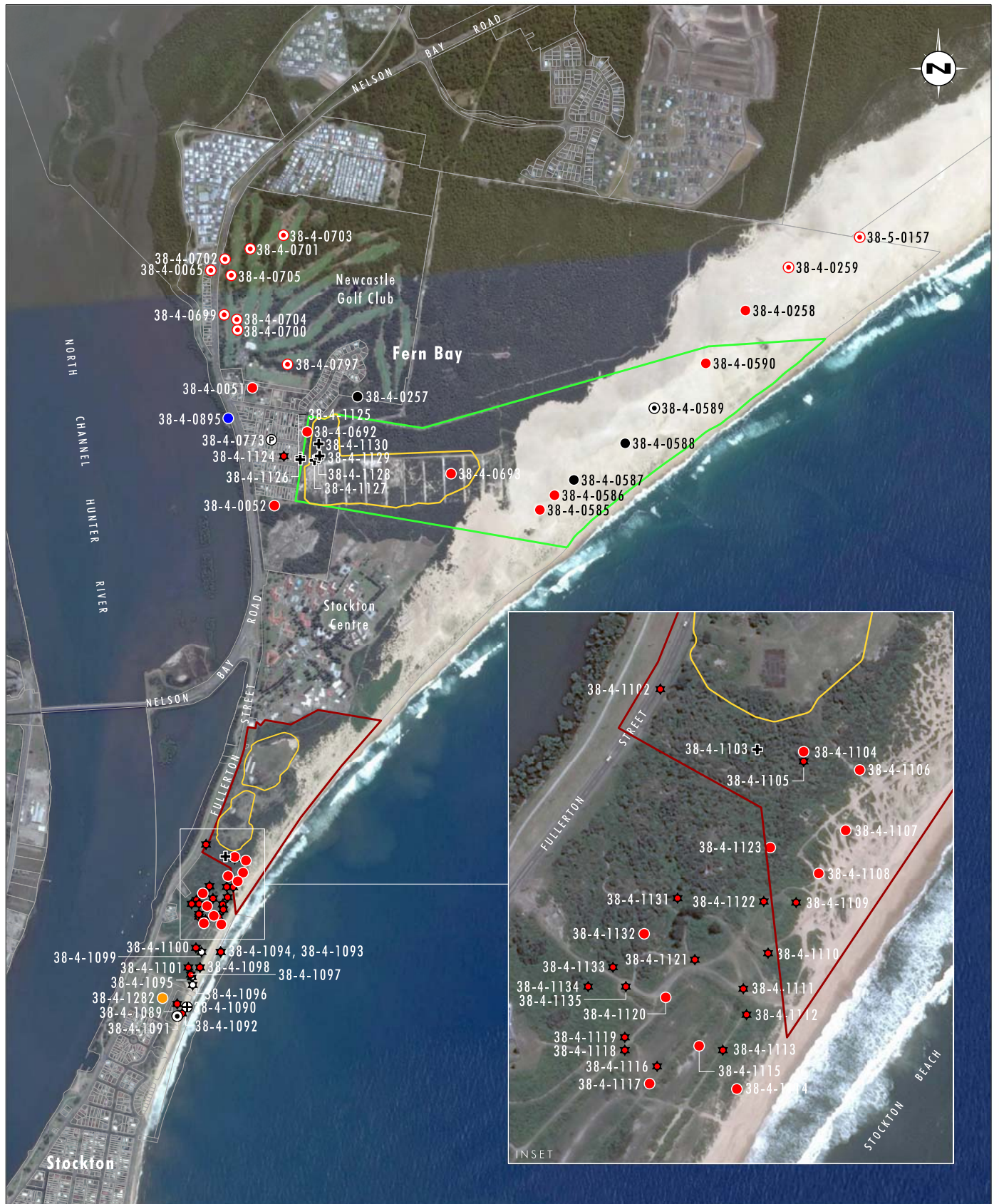


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0 50 100 200m 0 0.25 0.5 1.0km
INSET 1:5000 1:25 000

FIGURE 1

Previously Registered Aboriginal Sites
Fort Wallace and Stockton Rifle Range



Our Ref: 3772/ AL/NR/02082016

2 August 2016

Worimi Local Aboriginal Land Council
Jackie Henderson
2163 Nelson Bay Road
WILLIAMTOWN NSW 2318

Dear Jackie Henderson

Re: Draft Assessment Methodology: Aboriginal Cultural Heritage and Archaeological Assessment Stockton Rifle Range and Fort Wallace Stockton, NSW

Thank you for your registration of interest in the abovementioned project. The proposed works area is illustrated in **Figure 1** and is herein referred to as the Stockton Rifle Range and Fort Wallace project areas.

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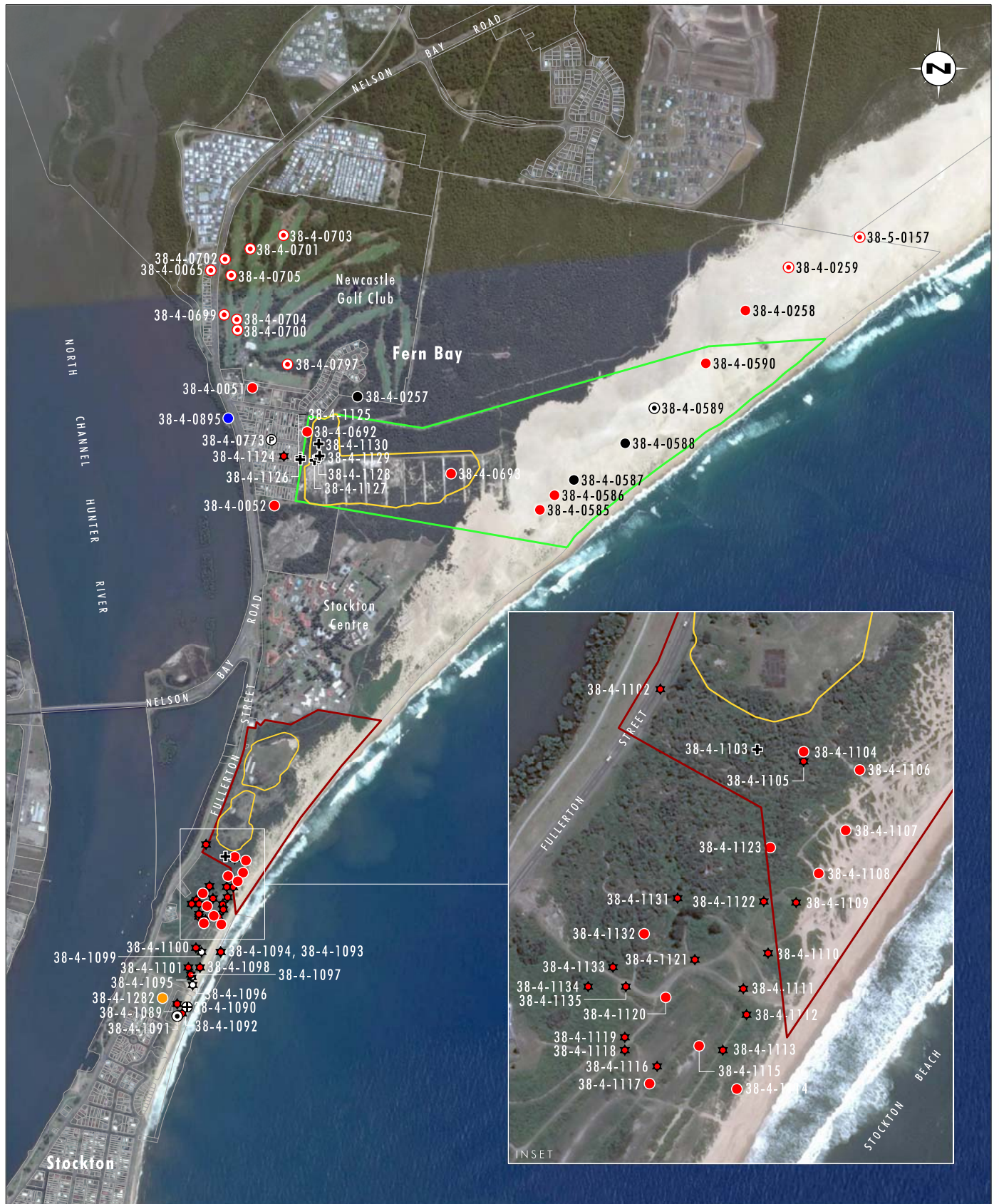


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FIGURE 1

Previously Registered Aboriginal Sites
Fort Wallace and Stockton Rifle Range



Our Ref: 3772/ AL/NR/02082016

4 August 2016

Wonn1
Suzie Worth and Arthur Flechter
619 Main Road
GLENDALE NSW2285

suzieworth17@bigpond.com

Dear Suzie and Arthur

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Yours sincerely



Alison Lamond
Archaeologist

From: [Nicola Roche](#)
To: [Alison Lamond](#)
Subject: FW: RE: Stockton Rifle Range - Additional outcomes following site meeting
Date: Wednesday, 14 June 2017 4:15:54 PM

Nicola Roche
Manager Cultural Heritage

Umwelt (Australia) Pty Limited
75 York Street
Teralba, NSW 2284

Phone: (02) 4950 5322
Mobile: 0427 125 685

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Please consider the environment before printing this email

From: lennie.anderson011 lennie.anderson011 [mailto:lennie.anderson011@bigpond.com]
Sent: Wednesday, 14 June 2017 3:56 PM
To: Nicola Roche
Subject: Re: RE: Stockton Rifle Range - Additional outcomes following site meeting

Hi Nic,

I appreciate your response, But I have just visited another area where Defence Housing gave the Communities a so called 'Iron Clad' agreement (verbal) but did not back their 'word' up! I feel Gulli will try his best but he is only one person! and you are aware of the inherit lack of trust that is apparent on this Project from previous dealings we have had. Also I still request that NO aboriginal reports be seen by anyone, or group, that is not directly engaged on this Project, A degree of 'Confidentiallity' must be adhered to, as we still carry out Traditional Business in that area!

Thanking you

Lennie Anderson OAM

Nur-run-Gee Pty Ltd (Director)

----- Original Message -----

From: "Nicola Roche" <nroche@umwelt.com.au>

To: "lennie.anderson011 lennie.anderson011" <lennie.anderson011@bigpond.com>
Cc: "Alison Lamond" <alamond@umwelt.com.au>
Sent: Wednesday, 14 Jun, 2017 At 3:37 PM
Subject: RE: Stockton Rifle Range - Additional outcomes following site meeting

Hi Lennie,

I'm sorry to hear about your mum. We held off on contacting you during that period as we figured you all had a lot on your plate. Thanks very much for getting back to us so promptly.

The draft report notes the Aboriginal parties objections to development north of the rifle range road so I didn't reiterate it in this email. It will be in the draft report as it forms a key aspect of your feedback.

I'll let Gully/Nigel talk to you about what consultation has already gone on/is planned with the general Fern Bay community about access from Nelson Bay Rd as this consultation has been undertaken outside the scope of our report.

Cheers

Nic

Nicola Roche
Manager Cultural Heritage

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Teralba, NSW 2284

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From: lennie.anderson011 lennie.anderson011 [<mailto:lennie.anderson011@bigpond.com>]
Sent: Wednesday, 14 June 2017 3:34 PM
To: Anthony Anderson; David Feeney; Jaqualine Henderson; Nicola Roche
Cc: Alison Lamond; Coote, Gully; Nigel Macdonald
Subject: Re: Stockton Rifle Range - Additional outcomes following site meeting

Hi Nicola,

I'm sorry for the Late reply, but as you know Anthony was in Hospital and our Mother past over to the other side! so things like work took a backseat! I agree with your readings of this e-mail and yes proceeding with the AHIP Application! The only thing that has concerned me is: (I may of overlooked this in the report), but I could not see where any writings stated that there would be NO development on the Northern Side of the Old Access Road other than what we agreed with along Popplewell Rd, and all access to these properties 'come off' Popplewell Road with no infrastructural work to be taken East of these proposed dwellings (eg further access roads). Also has anyone spoken to the Community about the utilisation of Rankin and Taylor Road as access to the Development? as the general opinion is that Vardon and Braid Roads are 'unsuitable' for this Purpose for obvious reasons?

Lennie Anderson OAM

Nur=Run-Gee Pty Ltd (Director)

----- Original Message -----

From: "Nicola Roche" <nroche@umwelt.com.au>

To: "Lennie Anderson" <lennie.anderson011@bigpond.com>; "Anthony Anderson" <murroomainc1@gmail.com>; "Jaqualine Henderson" <jackie@worimi.org.au>; "David Feeney" <karuahindigenous@outlook.com>
Cc: "Nigel Macdonald" <nigel.macdonald@npc.com.au>; "Coote, Gully" <gully.coote@dha.gov.au>; "Alison Lamond" <alamond@umwelt.com.au>
Sent: Wednesday, 14 Jun, 2017 At 1:56 PM
Subject: Stockton Rifle Range - Additional outcomes following site meeting

Hi all,

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During the meeting, we discussed a range of factors, as summarised below.

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On 17th April, I met with OEH (Nicole Davis and Laura Dafter). Nicole and Laura indicated that they understood the context of the project and that, from OEH's perspective, it would be feasible to obtain an AHIP to undertake the Phase 1 excavations. Based on the outcomes of the excavations, we would then seek to either vary the AHIP or obtain an additional AHIP to cover any subsequent archaeological salvage, community collection/salvage and the development activities, with this to be done post-DA.

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To close this project out, could you please confirm whether the approach outlined in this email is acceptable and provide any further comment on the draft report that you wish to make. Given that the original review period for the draft report has now closed, we request that you provide confirmation/feedback by no later than 30 June. Should you have any questions, please don't hesitate to give me a call.

DHA will also be in touch regarding the proposed burn.

Regards

Nic

Nicola Roche
Manager Cultural Heritage

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Please consider the environment before printing this email

From: [Nicola Roche](#)
To: [Alison Lamond](#)
Subject: FW: Stockton Rifle Range - Additional outcomes following site meeting
Date: Friday, 16 June 2017 10:01:17 AM

Nicola Roche
Manager Cultural Heritage

Umwelt (Australia) Pty Limited
75 York Street
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From: David Feeney [mailto:karuahindigenous@outlook.com]
Sent: Friday, 16 June 2017 9:44 AM
To: Nicola Roche
Subject: Re: Stockton Rifle Range - Additional outcomes following site meeting

Hi Nicola;

I would like to confirm that the approach that was outlined in your e-mail is acceptable from Karuah Indigenous Corporation

Thank you

Dave Feeney
CEO
Karuah indigenous Corporation

From: Nicola Roche <nroche@umwelt.com.au>
Sent: Wednesday, June 14, 2017 5:56:19 AM
To: Lennie Anderson; Anthony Anderson; Jaqualine Henderson; David Feeney
Cc: Nigel Macdonald; Coote, Gully; Alison Lamond
Subject: Stockton Rifle Range - Additional outcomes following site meeting

Hi all,

Further to the information included in the Stockton Rifle Range draft Aboriginal cultural heritage assessment report provided to you on 18th April, as you are aware, we had an on-site meeting on 12th May to discuss and review the management and mitigation recommendations included in the draft report. The meeting was attended by David Kirk (Karuah Indigenous Corporation), Brett Chambers (Worimi Local Aboriginal Land Council), Lennie Anderson (Nur-Run-Gee), Anthony Anderson (Mur-Roo-Ma), Gully Coote (DHA), Nicola Roche (Umwelt) and Alison Lamond (Umwelt).

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1 works (including surface collection where required). Once we have completed these works and compiled a short report (including all feedback received from Aboriginal parties), we will identify whether there is any need to progress to Phase 2 excavations, community collection/salvage etc and this will then inform any additional AHIP application/variation.

To close this project out, could you please confirm whether the approach outlined in this email is acceptable and provide any further comment on the draft report that you wish to make. Given that the original review period for the draft report has now closed, we request that you provide confirmation/feedback by no later than 30 June. Should you have any questions, please don't hesitate to give me a call.

DHA will also be in touch regarding the proposed burn.

Regards
Nic

Nicola Roche
Manager Cultural Heritage

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9 Vardon Road Fern Bay 2295 NSW
49281910
0402827482

ABN: 97 807 719 484

Monday 6th of June 2016.

Umwelt

Re: Aboriginal Cultural Heritage and Archaeological Assessment – Fort Wallace and Stockton Rifle Range Sites- Fern Bay/Stockton, NSW

To Alison Lamond,

Please find enclosed application for Murrooma Incorporated to register our interest to be a part of the community consultation process for this proposed project.

Anthony Anderson and Bec Young are representatives of Murrooma who both hold specific cultural knowledge and education relevant to determining the significance of Aboriginal objects and places in the Fern Bay/ Stockton region. We are both Traditional Custodians of the Worimi area and are in a position to speak for country.

The project area is within a noted Aboriginal Place and this area and surrounding areas are very significant to our local Aboriginal people. We believe that in order to gain the specific information that will be required for this area, it must be sorted through Local Knowledge Holders and this is what we can offer in the consultation process.

Thankyou

Anthony Anderson - CEO

Bec Young- Operations Manager



9 Vardon Road
Fern Bay NSW 2295
Ph: 02 49281910
M: 0402827482
Murroomainc1@gmail.com
ABN: 97 807 719 484

Thursday 18th May 2017

Umwelt
Att: Alison Lamond

Re: Response and Comments for draft report, Fern Bay Rifle Range - DHA.

To Alison,

Murrooma Incorporated has read and fully understands the Aboriginal Cultural Heritage and Archaeological Assessment report for the Proposed Residential Development Planning- Fern Bay Rifle Range.

We agree with all aspects of this draft report and have previously submitted all of our recommendations for this area. These recommendations still stand and believe they are accurately reported within this assessment.

The recommendations and methodologies within this draft report meet our requirements as Traditional knowledge holders of this area and maintain the protection and best options for these circumstances of our local Aboriginal sites.

Please contact if you have any questions,

Thankyou

Bec Young- Murrooma -Operations Manager/Sites Officer
Anthony Anderson - Murrooma- CEO.

From: [Dave Feeney](#)
To: [Alison Lamond](#)
Subject: RE: Hi David
Date: Monday, 6 June 2016 4:58:34 PM

Hi Alison;

The Karuah Indigenous Corporation would like to registrar there interest in the projects
Regarding the Aboriginal Cultural Heritage and archaeological assessment for
Fort Wallace and Stockton Rifle Range
At Stockton NSW

Thank you

Dave Feeney
Chief Executive Officer
Snr Cultural Officer
Karuah Indigenous Corporation

From: Alison Lamond [mailto:alamond@umwelt.com.au]
Sent: Monday, 6 June 2016 9:20 AM
To: karuahindigenous@outlook.com
Subject: Hi David

Hi David
Here is my email

Alison Lamond
Archaeologist

Umwelt (Australia) Pty Limited
75 York Street
Teralba, NSW 2284

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From: [Nicola Roche](#)
To: [Jaqualine Henderson](#)
Cc: [Alison Lamond](#)
Subject: RE: Stockton Rifle Range - Additional outcomes following site meeting
Date: Wednesday, 28 June 2017 2:11:13 PM
Attachments: [image001.png](#)

Hi Jackie,

Thanks for that. Just to let you know, I'm off on leave from Friday for 6 weeks. If you need to get hold of anyone in my absence, please contact Jan Wilson or Alison Lamond at our office.

Cheers

Nic

Nicola Roche
Manager Cultural Heritage

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From: Jaqualine Henderson [mailto:jackie@worimi.org.au]
Sent: Wednesday, 28 June 2017 2:08 PM
To: Nicola Roche
Subject: RE: Stockton Rifle Range - Additional outcomes following site meeting

Good afternoon Nicola,

Jamie has advised as per your below email regarding Stockton rifle Range Draft Aboriginal Cultural Heritage Assessment Report is all good as per Jamie's discussion with Rebecca and Lennie.

Please also note, Jamie has his own email address now: YAHOO -- Jamie email:
sites@worimi.org.au

Kind regards

Jackie Henderson

Administration Officer
Worimi Local Aboriginal Land Council
2163 Nelson Bay Road
WILLIAMTOWN NSW 2318

Ph: 02 40338802
Fax: 02 40338899
Email: jackie@worimi.org.au

D5022-Worimi-Local-Aboriginal-Land-Council-Blue



From: Nicola Roche [<mailto:nroche@umwelt.com.au>]
Sent: Wednesday, 14 June 2017 1:56 PM
To: Lennie Anderson <lennie.anderson011@bigpond.com>; Anthony Anderson <murroomainc1@gmail.com>; Jaqualine Henderson <jackie@worimi.org.au>; David Feeney <karuahindigenous@outlook.com>
Cc: Nigel Macdonald <nigel.macdonald@npc.com.au>; Coote, Gully <gully.coote@dha.gov.au>; Alison Lamond <alamond@umwelt.com.au>
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Nic

Nicola Roche
Manager Cultural Heritage

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From: lennie.anderson011 lennie.anderson011
To: [Anthony Anderson](#); [David Feeney](#); [Jaqualine Henderson](#); [Nicola Roche](#)
Cc: [Alison Lamond](#); [Coote, Gully](#); [Nigel Macdonald](#)
Subject: Re: Stockton Rifle Range - Additional outcomes following site meeting
Date: Wednesday, 14 June 2017 3:33:41 PM

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Lennie Anderson OAM

Nur=Run-Gee Pty Ltd (Director)

----- Original Message -----

From: "Nicola Roche" <nroche@umwelt.com.au>
To: "Lennie Anderson" <lennie.anderson011@bigpond.com>; "Anthony Anderson" <murroomainc1@gmail.com>; "Jaqualine Henderson" <jackie@worimi.org.au>; "David Feeney" <karuahindigenous@outlook.com>
Cc: "Nigel Macdonald" <nigel.macdonald@npc.com.au>; "Coote, Gully" <gully.coote@dha.gov.au>; "Alison Lamond" <alamond@umwelt.com.au>
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On 17th April, I met with OEH (Nicole Davis and Laura Dafter). Nicole and Laura indicated that they understood the context of the project and that, from OEH's perspective, it would be feasible to obtain an AHIP to undertake the Phase 1 excavations. Based on the outcomes of the excavations, we would then seek to either vary the AHIP or obtain an additional AHIP to cover any subsequent archaeological salvage, community collection/salvage and the development activities, with this to be done post-DA.

On this basis, we propose to finalise the report (incorporating your final comments) as it is. The report will then be used to inform the rezoning application. Following the determination of the rezoning application, we would then develop an AHIP application that relates only to the Phase 1 works (including surface collection where required). Once we have completed these works and compiled a short report (including all feedback received from Aboriginal parties), we will identify whether there is any need to progress to Phase 2 excavations, community collection/salvage etc and this will then inform any additional AHIP application/variation.

To close this project out, could you please confirm whether the approach outlined in this email is acceptable and provide any further comment on the draft report that you wish to make. Given that the original review period for the draft report has now closed, we request that you provide confirmation/feedback by no later than 30 June. Should you have any questions, please don't hesitate to give me a call.

DHA will also be in touch regarding the proposed burn.

Regards

Nic

Nicola Roche
Manager Cultural Heritage

Umwelt (Australia) Pty Limited
75 York Street
Teralba, NSW 2284

Phone: (02) 4950 5322
Mobile: 0427 125 685

www.umwelt.com.au

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**Newcastle ph. 02 4950 5322 | Perth ph. 08 6260 0700 | Canberra ph. 02 6262 9484 |
Sydney ph. 1300 793 267 | Brisbane ph. 1300 793 267**

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Please consider the environment before printing this email

From: [Anthony Anderson](#)
To: [Alison Lamond](#)
Subject: Registration of Interest
Date: Monday, 6 June 2016 11:09:14 AM
Attachments: [Umwelt- Rifle Range.docx](#)

Dear Alison-

Please find letter of interest for Murrooma Incorporated.

Thanks
Bec Young

--

[Anthony Anderson](#)
[CEO Mur-roo-ma Incorporated](#)
[Justice of The Peace](#)



9 Vardon Road Fern Bay 2295 NSW
49281910
0402827482

ABN: 97 807 719 484

Monday 6th of June 2016.

Umwelt

Re: Aboriginal Cultural Heritage and Archaeological Assessment – Fort Wallace and Stockton Rifle Range Sites- Fern Bay/Stockton, NSW

To Alison Lamond,

Please find enclosed application for Murrooma Incorporated to register our interest to be a part of the community consultation process for this proposed project.

Anthony Anderson and Bec Young are representatives of Murrooma who both hold specific cultural knowledge and education relevant to determining the significance of Aboriginal objects and places in the Fern Bay/ Stockton region. We are both Traditional Custodians of the Worimi area and are in a position to speak for country.

The project area is within a noted Aboriginal Place and this area and surrounding areas are very significant to our local Aboriginal people. We believe that in order to gain the specific information that will be required for this area, it must be sorted through Local Knowledge Holders and this is what we can offer in the consultation process.

Thankyou

Anthony Anderson - CEO

Bec Young- Operations Manager

From: [Nicola Roche](#)
To: [Lennie Anderson](#); [Anthony Anderson](#); [Jaqualine Henderson](#); [David Feeney](#)
Cc: [Nigel Macdonald](#); [Coote Gully](#); [Alison Lamond](#)
Subject: Stockton Rifle Range - Additional outcomes following site meeting
Date: Wednesday, 14 June 2017 1:56:20 PM

Hi all,

Further to the information included in the Stockton Rifle Range draft Aboriginal cultural heritage assessment report provided to you on 18th April, as you are aware, we had an on-site meeting on 12th May to discuss and review the management and mitigation recommendations included in the draft report. The meeting was attended by David Kirk (Karuah Indigenous Corporation), Brett Chambers (Worimi Local Aboriginal Land Council), Lennie Anderson (Nur-Run-Gee), Anthony Anderson (Mur-Roo-Ma), Gully Coote (DHA), Nicola Roche (Umwelt) and Alison Lamond (Umwelt).

During the meeting, we discussed a range of factors, as summarised below.

- Archaeological management recommendations (involving surface collection and 2 phases of excavation) were agreed to be a suitable way of managing the landscape. The Aboriginal parties recommended that Phase 1 of excavations should be undertaken as a priority to assist in clarifying the nature and extent of deposits. The Aboriginal parties supported the recommendation that these excavations should be undertaken mechanically (with the option to revert to hand excavation where applicable) due to the potential depth of deposits, the preliminary nature of the investigations, the disturbance to the upper soil profile and the extent of area subject to excavation.
- The registered Aboriginal parties identified that the decision regarding whether any further community collection/salvage (outside the archaeological works described above) could not be made until the Phase 1 archaeological works had been completed as this will provide a better understanding as to whether any deposits exist that require management outside the archaeological works.
- The registered Aboriginal parties agreed that undertaking a controlled burn to reduce the invasive species to the north of the access road appears to be a suitable management strategy, provided that the burn is undertaken in consultation with Aboriginal parties. The Aboriginal parties requested that further discussions should be had with Dan Pederson (ecologist) regarding the burn planning prior to commencement.

During the meeting, we discussed the fact that the archaeological excavations would need to be conducted under an AHIP as they do not meet the requirements for excavation under the Code of Practice. Given that DHA will not be lodging a DA for the site for some time, we discussed the option of undertaking the archaeological excavations under an AHIP and then seeking a variation/second AHIP for construction purposes and any additional community collection/salvage if a DA is granted. We agreed that Umwelt would consult with OEH regarding whether this would be a viable option.

On 17th April, I met with OEH (Nicole Davis and Laura Dafter). Nicole and Laura indicated that they understood the context of the project and that, from OEH's perspective, it would be feasible to obtain an AHIP to undertake the Phase 1 excavations. Based on the outcomes of the excavations, we would then seek to either vary the AHIP or obtain an additional AHIP to cover any subsequent archaeological salvage, community collection/salvage and the development

activities, with this to be done post-DA.

On this basis, we propose to finalise the report (incorporating your final comments) as it is. The report will then be used to inform the rezoning application. Following the determination of the rezoning application, we would then develop an AHIP application that relates only to the Phase 1 works (including surface collection where required). Once we have completed these works and compiled a short report (including all feedback received from Aboriginal parties), we will identify whether there is any need to progress to Phase 2 excavations, community collection/salvage etc and this will then inform any additional AHIP application/variation.

To close this project out, could you please confirm whether the approach outlined in this email is acceptable and provide any further comment on the draft report that you wish to make. Given that the original review period for the draft report has now closed, we request that you provide confirmation/feedback by no later than 30 June. Should you have any questions, please don't hesitate to give me a call.

DHA will also be in touch regarding the proposed burn.

Regards
Nic

Nicola Roche
Manager Cultural Heritage

Umwelt (Australia) Pty Limited
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Teralba, NSW 2284

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Mobile: 0427 125 685

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Wonn1
Entity of Kauwul Pty Ltd

619 Main Road Glendale, 2285

PHONE: 0249547751 Mobile: 0402146193

ABN: 27 153 953 363

11 July 2016

Ms A Lamond
Umwelt (Australia) Pty Ltd
75 York Street
TERALBA NSW 2284
Email: alamond@umwelt.com.au

Dear Alison

**RE: EXPRESSIONS OF INTEREST FOR ABORIGINAL CULTURAL HERITAGE AND
ARCHAEOLOGICAL ASSESSMENT – FORT WALLACE AND STOCKTON RIFLE
RANGE SITES, STOCKTON NSW**

Thank you for the invitation from your organisation to express our interest in being consulted for the above project and we would appreciate the opportunity to review the resulting draft report.

Below are our organisation's details as requested:

Registered Aboriginal Party: Kauwul trading as Wonn1

Name and Contact Details of site worker/s: Arthur Fletcher Phone: 0402 146 193

Brief Description of Skills and Experience:

Arthur Fletcher has had many years' experience in cultural heritage/archaeological survey and excavation work within the Port Stephens, Lower and Upper Hunter Valley on projects including mining, infrastructure and development sites. He has worked with EnergyAustralia, TransGrid, Hunter Water, RTA/RMS including Hunter Expressway, ARTC and on many mine sites including Centennial, Xstrata Ravensworth, Rio Tinto, etc. Arthur has had sites training through NSW NPWS and continues to expand cultural heritage knowledge independently through his association with skilled knowledge-holder Elders within the Hunter Valley and further afield. He has undertaken many inductions for RTA, ARTC and carries SGS Induction cards for Xstrata and Rio Tinto Coal & Allied sites (Induction cards are available upon request).
(White Card: Arthur Fletcher Work Cover CG100787865SEQ1 11/03/2006)

Statement of Physical Fitness to Undertake the Necessary Sites Work:

Arthur is physically fit and will be able to complete the specific project tasks required within acceptable survey terrain limits and climate.

Statement of Cultural Knowledge and/or Connection with Country:

Arthur is a Wonnarua/Gringai elder with knowledge of cultural lore and a concentrated interest, knowledge and understanding of cultural heritage, sites and spiritual beliefs of his traditional Country and has a long cultural association within the Newcastle and lower Worimi country.

Thank you once again for this opportunity to be consulted on this project. We look forward to hearing from you soon.

Kind regards

A handwritten signature in dark ink, appearing to read 'Suzie Worth', with a stylized flourish at the end.

Suzie Worth
For Arthur C Fletcher
Wonn1 (Kauwul Pty Ltd)

Attached.



9 Vardon Road
Fern Bay NSW 2295
Ph: 02 49281910
M: 0402827482
Murroomainc1@gmail.com
ABN: 97 807 719 484

Friday 16th June 2017

Umwelt
Att: Nicola Roche

Re: Email Response, Fern Bay Rifle Range - DHA.

To Nicola,

Murrooma Incorporated agree with the approach outlined in the email and believe this is accurate from the onsite meeting. We believe this management process will be acceptable and we have previously submitted all of our recommendations for this area. These recommendations still stand and they are accurately reported within the draft report. Murrooma did responded to the draft report on the 18th of May and this was emailed to Alison Lamond.

Please contact if you have any questions,

Thankyou

Bec Young- Murrooma -Operations Manager/Sites Officer
Anthony Anderson - Murrooma- CEO.



9 Vardon Road
Fern Bay NSW 2295
Ph: 02 49281910
M: 0402827482
Murroomainc1@gmail.com
ABN: 97 807 719 484

Tuesday 18th October 2016

Umwelt
Att: Alison Lamond

Re: Response and Comments from recent Site Survey-Aboriginal archaeological assessment Fern Bay Rifle Range and Fort Wallace- DHA.

To Alison,

After completion of the recent sites survey of Fern Bay Rifle Range and Stockton Fort Wallace, all groups represented attended a meeting to discuss our comments and recommendations for the local areas due to the high cultural sensitivity.

Fern Bay Rifle Range-

The area was discussed with maps issued by Alison on the survey and these were some findings:

The Northern side of the current access road was discussed and all RAP groups have indicated that due to the very significant areas through here both culturally and historically that we believe this area should not be developed on, that includes no roads etc behind the proposed housing on the Popplewell road site. This area has very significant intellectual property rights and storylines attached. The whole area is extremely important to our Traditional Owners to remain intact with no development to ensure protection of these traditional Worimi storylines.

- Development of houses on the Northern side, if needed can be completed along the road in line with the houses existing on Popperwell road, this area is already disturbed and will not affect our Aboriginal Sites.

We also discussed Braid road upgrade and believe that this should not be used as a new access or thorough fare through to the new development. There are known burials within this area and no excavation should take place on either side of the fence. An option may be using Rankin or Taylor road for main access into development. This will ensure no disturbance of the burials and protection of our Aboriginal sites.

Some possible steps for movement on construction within the open area/southern side of the access road:

- 1- Surface collection of accessible sites.
- 2- Storage is possible at Worimi LALC until work is finalised this includes the final process of re-burial of Aboriginal objects salvaged.
- 3- Due to the limitations of access and visibility from vegetation in our initial survey, all areas were not accessed and we are aware of sites from previous works in this area that have been since covered by vegetation. We would require to clear vegetation completely, all vehicles or machinery to be rubber tyred in order to minimise impact of sites. Once vegetation cleared another assessment to be completed in order to record and salvage these further sites.
- 4- Test pits to get extensive information from the sites identified- both scientific and cultural. All RAP groups believe the whole area surveyed is a large site complex however for the test pitting we may be able to capture the more complex exposed areas at first to test the extent.
- 5- We agreed on the development proceeding in the open area/southern side of access track however a full salvage excavation or the footprint/damage of development is recommended in order to protect all Aboriginal objects. This includes all areas to be developed that will be excavating the natural ground, e.g. structural supports or drainage.
- 6- The only area not to be excavated or developed on is the Northern area and the area where previous artefacts have been re-buried and returned to their natural place and the most southern/western corner due to the burials as previously discussed.

Fort Wallace- Stockton

The area was discussed with maps issued by Alison on the survey and these were some findings:

- 1- We discovered while we were completing the survey that someone had completed possible Geo Tech work within the area that we were surveying. There were holes dug and soil displaced and all material removed from the soil and spread back out around the marker pegs. This whole area is a site complex and is recorded on AHIMS as such. This disturbance and excavation may have uncovered or destroyed Aboriginal Objects. We have asked Alison to find out who was given access to complete this work as it is a severe breach of the Act. We will continue to follow this up as none of the RAP groups were aware or present while work was being complete and this area is extremely sensitive to our Traditional Owners especially close to a well know Aboriginal burial which is of great sensitivity.
- 2- We only completed the survey where the houses were potentially going, there are other buildings in the area that may be removed for development and we will return to survey/salvage in this area due to inaccessibility.
- 3- Anything outside the outlined scope of works was not surveyed e.g to the east where dune system begins. This area is extremely significant to our people and there are many Aboriginal sites within this area. If development is to go out of those boundaries another survey will need to be completed.
- 4- Some sites were identified on the AHIMS register that were in accessibility due to vegetation, we would need this cleared for identification and/or salvage.

- 5- To the southern end of the project site on a hill which was demonstrated to Alison is a well-known Aboriginal burial. This site is significant to our local people and NO access, foot passage or machinery will be given for development. We would like this area well marked and made clear it is a no-go-zone for all contractors/workers or anyone who comes in contact due to its sensitivity.
- 6- Test pits to get extensive information from the sites identified- both scientific and cultural. All RAP groups believe the whole area surveyed is a large site complex however for the test pitting we may be able to capture the more complex exposed areas at first to test the extent. Including the front/western dune system of the base which we are aware is an existing midden site that runs for kilometres through Stockton and Fern Bay.
- 7- A full salvage excavation or the footprint/damage of development is recommended in order to protect all Aboriginal objects. This includes all areas to be developed that will be excavating the natural ground, e.g. structural supports or drainage.
- 8- No exploration or work scheduled is to be undertaken on these site until a full comprehensive explanation is given to and accepted by us, in response to the damage to 'known /recorded sites' undertaken by the Geotech subsurface exploration. We would also like to know where the Cultural Material and other inclusions uncovered from those areas are.

As both of these areas are within the Fern Bay Aboriginal Site Complex and are of high significance to our people, we would like to be consulted in all aspects of potential development. It is our cultural roles and responsibilities to ensure the protection of our Aboriginal Heritage and its integrity which is not renewable once destroyed.

Please contact if you have any questions,

Thankyou

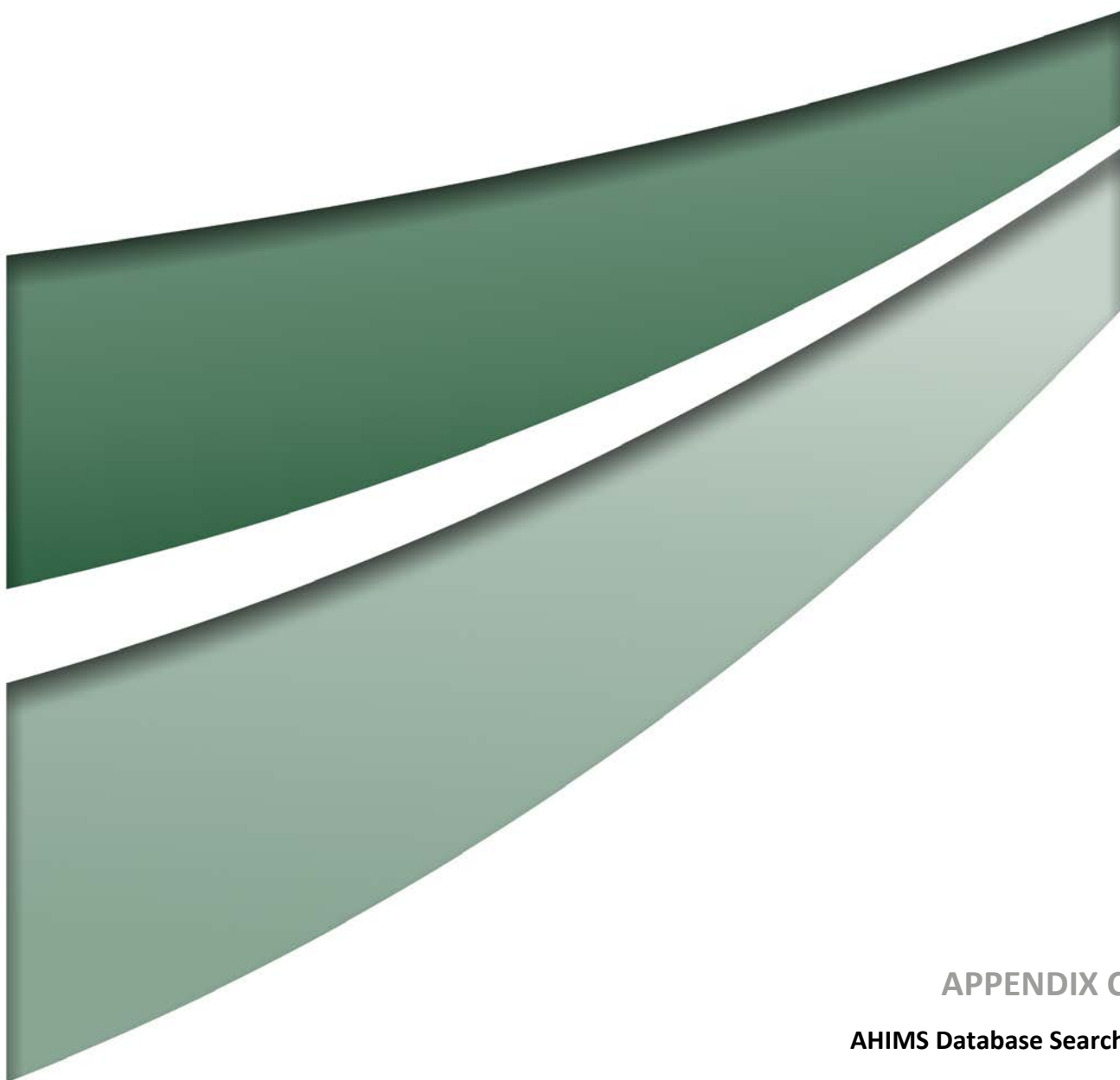
Bec Young- Murrooma -Operations Manager/Sites Officer

Anthony Anderson - Murrooma- CEO.

David Feeney-Karuah Indigenous Corporation-CEO

Lennie Anderson- Nurrungee- CEO

Jamie Merrick- Worimi LALC-Senior Sites Officer



APPENDIX C

AHIMS Database Search

AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Fort Wallace

Client Service ID : 225761

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
38-4-0257	Fern Hill 1;	AGD	56	387600	6362100	Open site	Valid	Artefact : -	Isolated Find	1845
	<u>Contact</u>	<u>Recorders</u>	<u>Permits</u>							
38-4-0258	Fern Hill 2;	AGD	56	389400	6362500	Open site	Valid	Artefact : -	Open Camp Site	1845
	<u>Contact</u>	<u>Recorders</u>	<u>Permits</u>							
38-4-0259	Fern Hill 3;	AGD	56	389600	6362700	Open site	Valid	Shell : -, Artefact : -	Midden	1845
	<u>Contact</u>	<u>Recorders</u>	<u>Permits</u>							
38-4-0065	Fullerton Cove	AGD	56	386919	6362686	Open site	Valid	Shell : -, Artefact : -	Midden	102493
	<u>Contact</u>	<u>Recorders</u>	<u>Permits</u>							
38-4-0051	Moscheto Island;Newcastle Golf Club;	AGD	56	387112	6362141	Open site	Valid	Artefact : -	Open Camp Site	102493
	<u>Contact</u>	<u>Recorders</u>	<u>Permits</u>							
38-4-0052	Moscheto Island;Newcastle Bight;	AGD	56	387214	6361595	Open site	Valid	Artefact : -	Open Camp Site	102493
	<u>Contact</u>	<u>Recorders</u>	<u>Permits</u>							
38-4-0585	Fullerton 25	AGD	56	388446	6361575	Open site	Valid	Artefact : 52		
	<u>Contact</u>	<u>Recorders</u>	<u>Permits</u>							
38-4-0586	Fullerton 26	AGD	56	388514	6361643	Open site	Valid	Artefact : 10		
	<u>Contact</u>	<u>Recorders</u>	<u>Permits</u>							
38-4-0587	Fullerton 27	AGD	56	388604	6361714	Open site	Valid	Artefact : 1		
	<u>Contact</u>	<u>Recorders</u>	<u>Permits</u>							
38-4-0588	Fullerton 28	AGD	56	388842	6361884	Open site	Valid	Artefact : 1		
	<u>Contact</u>	<u>Recorders</u>	<u>Permits</u>							
38-4-0589	Fullerton 29	AGD	56	388977	6362047	Open site	Valid	Shell : 1		
	<u>Contact</u>	<u>Recorders</u>	<u>Permits</u>							
38-4-0590	Fullerton 30	AGD	56	389216	6362255	Open site	Valid	Artefact : 3		
	<u>Contact</u>	<u>Recorders</u>	<u>Permits</u>							
38-4-0699	Newcastle Golf Club 2	AGD	56	386981	6362480	Open site	Valid	Artefact : 20, Shell : 20		102493
	<u>Contact</u>	<u>Recorders</u>	<u>Permits</u>							
38-4-0700	Newcastle Golf Club 3	AGD	56	387043	6362410	Open site	Valid	Artefact : 20, Shell : 20		102493
	<u>Contact</u>	<u>Recorders</u>	<u>Permits</u>							
38-4-0701	Newcastle Golf Club 4	AGD	56	387102	6362786	Open site	Valid	Artefact : 20, Shell : 20		102493
	<u>Contact</u>	<u>Recorders</u>	<u>Permits</u>							
38-4-0702	Newcastle Golf Club 5	AGD	56	386985	6362738	Open site	Valid	Artefact : 20, Shell : 20		102493
	<u>Contact</u>	<u>Recorders</u>	<u>Permits</u>							

Report generated by AHIMS Web Service on 17/05/2016 for Nicola Roche for the following area at Lat, Long From : -32.9002, 151.7815 - Lat, Long To : -32.8648, 151.8377 with a Buffer of 50 meters. Additional Info : Arch assessment. Number of Aboriginal sites and Aboriginal objects found is 73

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Fort Wallace

Client Service ID : 225761

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
38-4-0703	Newcastle Golf Club 6	AGD	56	387256	6362849	Open site	Valid	Artefact : 20, Shell : 20		102493
	<u>Contact</u>	<u>Recorders</u>	Mr.Warren Mayers					<u>Permits</u>	1781	
38-4-0704	Newcastle Golf Club 7	AGD	56	387040	6362458	Open site	Valid	Artefact : 20, Shell : 20		102493
	<u>Contact</u>	<u>Recorders</u>	Mr.Warren Mayers					<u>Permits</u>	1781	
38-4-0705	Newcastle Golf Club 8	AGD	56	387014	6362663	Open site	Valid	Artefact : 20, Shell : 20		102493
	<u>Contact</u>	<u>Recorders</u>	Mr.Warren Mayers					<u>Permits</u>	1781	
38-4-0692	Stockton Rifle Range 1	AGD	56	387366	6361937	Open site	Valid	Artefact : 7		98719,102493
	<u>Contact</u>	<u>Recorders</u>	Leila McAdam					<u>Permits</u>		
38-4-0693	Stockton Rifle Range 2	AGD	56	388034	6361743	Open site	Valid	Artefact : 22		98719
	<u>Contact</u>	<u>Recorders</u>	Leila McAdam					<u>Permits</u>		
38-4-0773	Fern Bay PAD - Rankin RD	AGD	56	387200	6361900	Open site	Partially Destroyed	Potential Archaeological Deposit (PAD) : -		102493
	<u>Contact</u>	<u>Recorders</u>	Hilton Naden					<u>Permits</u>	1998,2168,2274,2337	
38-4-0797	Fern Bay PAD	AGD	56	387275	6362250	Open site	Valid	Artefact : -, Shell : -		102493
	<u>Contact</u> T Russell	<u>Recorders</u>	Mr.Warren Mayers					<u>Permits</u>	2046	
38-4-0895	Fern Bay Complex	AGD	56	387000	6362000	Open site	Partially Destroyed	Shell : -, Artefact : -, Aboriginal Ceremony and Dreaming : -, Burial : -		102493
	<u>Contact</u> T Russell	<u>Recorders</u>	Ms.Penny McCardle					<u>Permits</u>	3001	
38-5-0157	Fullerton Site 1;Newcastle Bight;	AGD	56	389930	6362840	Open site	Valid	Shell : -, Artefact : -	Midden,Open Camp Site	
	<u>Contact</u>	<u>Recorders</u>	Liam Dagg					<u>Permits</u>	845,916	
38-4-1089	Eames avenue midden	AGD	56	386763	6359283	Open site	Valid	Aboriginal Resource and Gathering : 60		102493
	<u>Contact</u> Mr.Leonard (Lennie) Andersor	<u>Recorders</u>	Mr.Leonard (Lennie) Anderson					<u>Permits</u>		
38-4-1090	Eamens Ave stones	AGD	56	386809	6359269	Open site	Valid	Stone Arrangement : 8		102493
	<u>Contact</u> Mr.Leonard (Lennie) Andersor	<u>Recorders</u>	Mr.Leonard (Lennie) Anderson					<u>Permits</u>		
38-4-1091	Eames Ave midden	AGD	56	386763	6359226	Open site	Valid	Shell : 40		102493
	<u>Contact</u> Mr.Leonard (Lennie) Andersor	<u>Recorders</u>	Mr.Leonard (Lennie) Anderson					<u>Permits</u>		
38-4-1092	Eames ave shell	AGD	56	386786	6359239	Open site	Valid	Aboriginal Resource and Gathering : 30		102493
	<u>Contact</u> Mr.Leonard (Lennie) Andersor	<u>Recorders</u>	Mr.Leonard (Lennie) Anderson					<u>Permits</u>		

Report generated by AHIMS Web Service on 17/05/2016 for Nicola Roche for the following area at Lat, Long From : -32.9002, 151.7815 - Lat, Long To : -32.8648, 151.8377 with a Buffer of 50 meters. Additional Info : Arch assessment. Number of Aboriginal sites and Aboriginal objects found is 73

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Fort Wallace

Client Service ID : 225761

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
38-4-1093	Corroba corroboree ground	AGD	56	386965	6359524	Open site	Valid	Aboriginal Resource and Gathering : 27		102493
	<u>Contact</u> Mr.Leonard (Lennie) Andersor	<u>Recorders</u>		Mr.Leonard (Lennie) Anderson				<u>Permits</u>		
38-4-1094	Corrobba Corrobree grounds 1	AGD	56	386965	6359524	Open site	Valid	Aboriginal Ceremony and Dreaming : 1		102493
	<u>Contact</u> Mr.Peter Anderson	<u>Recorders</u>		Mr.Leonard (Lennie) Anderson				<u>Permits</u>		
38-4-1095	Corroba ceremonial grounds	AGD	56	386831	6359408	Open site	Valid	Aboriginal Ceremony and Dreaming : 1		102493
	<u>Contact</u> Mr.Leonard (Lennie) Andersor	<u>Recorders</u>		Mr.Leonard (Lennie) Anderson				<u>Permits</u>		
38-4-1096	Corroba 2	AGD	56	386835	6359371	Open site	Valid	Aboriginal Ceremony and Dreaming : 7		102493
	<u>Contact</u> Mr.Leonard (Lennie) Andersor	<u>Recorders</u>		Mr.Leonard (Lennie) Anderson				<u>Permits</u>		
38-4-1097	North Stockton	AGD	56	386826	6359419	Open site	Valid	Aboriginal Resource and Gathering : 28		102493
	<u>Contact</u> Mr.Leonard (Lennie) Andersor	<u>Recorders</u>		Mr.Leonard (Lennie) Anderson				<u>Permits</u>		
38-4-1098	North Stockton 3	AGD	56	386869	6359452	Open site	Valid	Aboriginal Resource and Gathering : 46		102493
	<u>Contact</u> Mr.Leonard (Lennie) Andersor	<u>Recorders</u>		Mr.Leonard (Lennie) Anderson				<u>Permits</u>		
38-4-1099	Charlie Foes	AGD	56	386876	6359524	Open site	Valid	Aboriginal Ceremony and Dreaming : 8		102493
	<u>Contact</u> Mr.Leonard (Lennie) Andersor	<u>Recorders</u>		Mr.Leonard (Lennie) Anderson				<u>Permits</u>		
38-4-1100	Charlie Foes 2	AGD	56	386850	6359543	Open site	Valid	Aboriginal Resource and Gathering : 43		102493
	<u>Contact</u> Mr.Leonard (Lennie) Andersor	<u>Recorders</u>		Mr.Leonard (Lennie) Anderson				<u>Permits</u>		
38-4-1101	Stockton North 4	AGD	56	386815	6359452	Open site	Valid	Aboriginal Resource and Gathering : 42		102493
	<u>Contact</u> Mr.Leonard (Lennie) Andersor	<u>Recorders</u>		Mr.Leonard (Lennie) Anderson				<u>Permits</u>		
38-4-1102	Treatment works1	AGD	56	386897	6360023	Open site	Valid	Aboriginal Resource and Gathering : 17		102493
	<u>Contact</u> Mr.Leonard (Lennie) Andersor	<u>Recorders</u>		Mr.Leonard (Lennie) Anderson				<u>Permits</u>		
38-4-1103	Treatment works2	AGD	56	386987	6359967	Open site	Valid	Burial : 1		102493
	<u>Contact</u> Mr.Leonard (Lennie) Andersor	<u>Recorders</u>		Mr.Leonard (Lennie) Anderson				<u>Permits</u>		
38-4-1104	Treatment works3	AGD	56	387030	6359965	Open site	Valid	Artefact : 106		102493
	<u>Contact</u> Mr.Leonard (Lennie) Andersor	<u>Recorders</u>		Mr.Leonard (Lennie) Anderson				<u>Permits</u>		
38-4-1105	Treatment works 4	AGD	56	387030	6359956	Open site	Valid	Aboriginal Resource and Gathering : 200		102493
	<u>Contact</u> Mr.Leonard (Lennie) Andersor	<u>Recorders</u>		Mr.Leonard (Lennie) Anderson				<u>Permits</u>		
38-4-1106	treatment works 5	AGD	56	387082	6359948	Open site	Valid	Artefact : 200		102493
	<u>Contact</u> Mr.Leonard (Lennie) Andersor	<u>Recorders</u>		Mr.Leonard (Lennie) Anderson				<u>Permits</u>		

Report generated by AHIMS Web Service on 17/05/2016 for Nicola Roche for the following area at Lat, Long From : -32.9002, 151.7815 - Lat, Long To : -32.8648, 151.8377 with a Buffer of 50 meters. Additional Info : Arch assessment. Number of Aboriginal sites and Aboriginal objects found is 73

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Fort Wallace

Client Service ID : 225761

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
38-4-1107	Treatment works 6	AGD	56	387069	6359892	Open site	Valid	Artefact : 150		102493
	Contact Mr.Leonard (Lennie) Andersor	Recorders		Mr.Leonard (Lennie) Anderson				Permits		
38-4-1108	Stockto Nth TW	AGD	56	387044	6359852	Open site	Valid	Artefact : 150		102493
	Contact Mr.Leonard (Lennie) Andersor	Recorders		Mr.Leonard (Lennie) Anderson				Permits		
38-4-1109	Stockton TW 7	AGD	56	387023	6359825	Open site	Valid	Aboriginal Resource and Gathering : 200		102493
	Contact Mr.Leonard (Lennie) Andersor	Recorders		Mr.Leonard (Lennie) Anderson				Permits		
38-4-1110	Stockton TW midden	AGD	56	386997	6359778	Open site	Valid	Aboriginal Ceremony and Dreaming : 200		102493
	Contact Mr.Leonard (Lennie) Andersor	Recorders		Mr.Peter Anderson				Permits		
38-4-1111	North Stockton Charlie Foe	AGD	56	386974	6359745	Open site	Valid	Aboriginal Resource and Gathering : 300		102493
	Contact Mr.Leonard (Lennie) Andersor	Recorders		Mr.Leonard (Lennie) Anderson				Permits		
38-4-1112	Stockton Stones	AGD	56	386977	6359721	Open site	Valid	Aboriginal Resource and Gathering : 300		102493
	Contact Mr.Leonard (Lennie) Andersor	Recorders		Mr.Leonard (Lennie) Anderson				Permits		
38-4-1113	Stockton CF	AGD	56	386955	6359688	Open site	Valid	Aboriginal Resource and Gathering : 200		102493
	Contact Mr.Leonard (Lennie) Andersor	Recorders		Mr.Leonard (Lennie) Anderson				Permits		
38-4-1114	Stockton twcf	AGD	56	386968	6359652	Open site	Valid	Artefact : 300		102493
	Contact Mr.Leonard (Lennie) Andersor	Recorders		Mr.Leonard (Lennie) Anderson				Permits		
38-4-1115	Stockton TW7	AGD	56	386933	6359692	Open site	Valid	Artefact : 150		102493
	Contact Mr.Leonard (Lennie) Andersor	Recorders		Mr.Leonard (Lennie) Anderson				Permits		
38-4-1116	Stockton 8	AGD	56	386894	6359673	Open site	Valid	Aboriginal Ceremony and Dreaming : 50		102493
	Contact Mr.Leonard (Lennie) Andersor	Recorders		Mr.Leonard (Lennie) Anderson				Permits		
38-4-1117	Stocko 9	AGD	56	386887	6359657	Open site	Valid	Artefact : 70		102493
	Contact Mr.Leonard (Lennie) Andersor	Recorders		Mr.Leonard (Lennie) Anderson				Permits		
38-4-1118	Stockton9	AGD	56	386864	6359688	Open site	Valid	Aboriginal Resource and Gathering : 150		102493
	Contact Mr.Leonard (Lennie) Andersor	Recorders		Mr.Leonard (Lennie) Anderson				Permits		
38-4-1119	Stockton 10	AGD	56	386864	6359700	Open site	Valid	Aboriginal Resource and Gathering : 200		102493
	Contact Mr.Leonard (Lennie) Andersor	Recorders		Mr.Leonard (Lennie) Anderson				Permits		
38-4-1120	Stockton 11	AGD	56	386902	6359737	Open site	Valid	Artefact : 80		102493
	Contact Mr.Leonard (Lennie) Andersor	Recorders		Mr.Leonard (Lennie) Anderson				Permits		
38-4-1121	Stockton12	AGD	56	386929	6359772	Open site	Valid	Aboriginal Resource and Gathering : 300		102493,102568

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Fort Wallace

Client Service ID : 225761

SiteID	SiteName	Datum	Zone	Easting	Northing	Context	Site Status	SiteFeatures	SiteTypes	Reports
	Contact	Mr.Leonard (Lennie) Andersor	Recorders	Mr.Leonard (Lennie) Anderson				Permits		
38-4-1122	Stockton 13	AGD	56	386993	6359826	Open site	Valid	Aboriginal Resource and Gathering : 250		102493
	Contact	Mr.Leonard (Lennie) Andersor	Recorders	Mr.Leonard (Lennie) Anderson				Permits		
38-4-1123	Stockton 13B	AGD	56	386999	6359876	Open site	Valid	Artefact : 80		102493
	Contact	Mr.Leonard (Lennie) Andersor	Recorders	Mr.Leonard (Lennie) Anderson				Permits		
38-4-1124	Cemetery/Braid Rd 1	AGD	56	387258	6361824	Open site	Valid	Aboriginal Resource and Gathering : 250		102493
	Contact	Mr.Leonard (Lennie) Andersor	Recorders	Mr.Leonard (Lennie) Anderson				Permits		
38-4-1125	Cemetery/Braid Rd 2	AGD	56	387334	6361818	Open site	Valid	Burial : 1		102493
	Contact	Mr.Leonard (Lennie) Andersor	Recorders	Mr.Leonard (Lennie) Anderson				Permits		
38-4-1126	cemetery Harpurs	AGD	56	387334	6361808	Open site	Valid	Burial : 1		102493
	Contact	Mr.Leonard (Lennie) Andersor	Recorders	Mr.Leonard (Lennie) Anderson				Permits		
38-4-1127	Cemetery Corner	AGD	56	387400	6361805	Open site	Valid	Burial : 1		102493
	Contact	Mr.Leonard (Lennie) Andersor	Recorders	Mr.Leonard (Lennie) Anderson				Permits		
38-4-1128	Rifle Range 1	AGD	56	387419	6361815	Open site	Valid	Burial : 1		102493
	Contact	Mr.Leonard (Lennie) Andersor	Recorders	Mr.Leonard (Lennie) Anderson				Permits		
38-4-1129	Rifle Range 2	AGD	56	387424	6361825	Open site	Valid	Burial : 1		102493
	Contact	Mr.Leonard (Lennie) Andersor	Recorders	Mr.Leonard (Lennie) Anderson				Permits		
38-4-1130	Cols Corner Braid Rd	AGD	56	387420	6361881	Open site	Valid	Burial : 1		102493
	Contact	Mr.Leonard (Lennie) Andersor	Recorders	Mr.Leonard (Lennie) Anderson				Permits		
38-4-1131	Trans Pit 1	AGD	56	386913	6359829	Open site	Valid	Aboriginal Resource and Gathering : 80		102493,102568
	Contact	Mr.Leonard (Lennie) Andersor	Recorders	Mr.Leonard (Lennie) Anderson				Permits		
38-4-1132	Trans Pit 2	AGD	56	386882	6359796	Open site	Valid	Artefact : 50		102493
	Contact	Mr.Leonard (Lennie) Andersor	Recorders	Mr.Leonard (Lennie) Anderson				Permits		
38-4-1133	Trans Pit 3	AGD	56	386853	6359765	Open site	Valid	Aboriginal Resource and Gathering : 150		102493
	Contact	Mr.Leonard (Lennie) Andersor	Recorders	Mr.Leonard (Lennie) Anderson				Permits		
38-4-1134	Revetted area	AGD	56	386830	6359747	Open site	Valid	Aboriginal Resource and Gathering : 50		102493
	Contact	Mr.Leonard (Lennie) Andersor	Recorders	Mr.Leonard (Lennie) Anderson				Permits		
38-4-1135	Revetted area 2	AGD	56	386865	6359747	Open site	Valid	Aboriginal Resource and Gathering : 200		102493
	Contact	Mr.Leonard (Lennie) Andersor	Recorders	Mr.Leonard (Lennie) Anderson				Permits		

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AHIMS Web Services (AWS)

Extensive search - Site list report

Your Ref/PO Number : Fort Wallace

Client Service ID : 225761

<u>SiteID</u>	<u>SiteName</u>	<u>Datum</u>	<u>Zone</u>	<u>Easting</u>	<u>Northing</u>	<u>Context</u>	<u>Site Status</u>	<u>SiteFeatures</u>	<u>SiteTypes</u>	<u>Reports</u>
38-4-1282	Corrobra Oval 1	GDA	56	386800	6359500	Open site	Valid	Aboriginal Ceremony and Dreaming : -, Shell : -		102015,10249 3
	<u>Contact</u>								<u>Permits</u>	3345
		<u>Recorders</u>	Ms.Penny McCardle							

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